RANI CHANNAMMA UNIVERSITY,

BELAGAVI-591156, Karnataka-India

A

DRAFT

COURSE STRUCTURE AND SYLLABUS

as per the Choice Based Credit System (CBCS) designed in accordance with Learning Outcomes-Based Curriculum Framework (LOCF)

For

UNDER-GRADUATE DEGREE IN MARATHI

leading to

B.A.IN MARATHI (U.G.)

w.e.f.

Academic Year 2021-22 and onwards...

BACHELOR'S IN MARATHI (B.A.)

Nature and Extent of the Bachelor's in Marathi (B.A.) Program

Introduction

Study of Marathi language and literature as a subject is committed to strengthening it's commitment to student's success and broadening the dimension of thought process of the students. That Under Graduation course of Marathi is designed to enable the students to…. Demonstrate an ability to think independently about a problem related to society and self, and clearly articulate and support their own views. Students completing B.A. in Marathi will be able to practice thinking and reading skills, so that they can devise original ideas, rather than simply echo the ideas of others. Students will learn to evaluate the credibility of sources, use academic/scholarly resources and incorporate sources effectively and ethically.

CHARACTERISTICS OF LANGUAGE

a. Language is not a born activity as crying and walking. It is not an automatic process. It has to be learnt. Any learner learns the language by imitation and practice.

b. If a baby or man is shifted to another community or cultural group, he will acquire the language spoken by that cultural community. For example; if an Maharashtrian family is settled in Karnataka, the children of the family will acquire the Kannada language with an Karnataka accent.

c. Language is a system like a human body, just as body functions through different organs such as brain, heart, lungs. In the same way, language functions through sounds, words and structures.

d. The language is primarily observed speech. Speech is a fundamental thing is language learning, reading and writing are secondary. Through speech and modulation of speech, we get a clear picture of Marathi inflexion.

e. No language on earth is static. Every language is undergoing changes in its grammar, vocabulary, structure and phonology with the course of time.

f. The main purpose of language is communication. Since it is so, a person's speech must be intelligible to others. For this, he must acquire the right pronunciation and intonation.

g. Language is arbitrary. There is no relationship between the words of a language and its meaning. The relationship between word and meaning is arbitrary.

h. Each language is unique. No two languages are alike. They cannot have the same set of patterns of structures, sounds, grammatical rules or words. The sounds, structures, vocabularies of every language have their own specialty.

PRINCIPLES OF SITUATIONAL APPROACH

1. Language learning is habit-formation.
2. Mistakes should be avoided.
3. Language skills are presented orally first, then in written form to improve the effectiveness of learning.
4. Examples are better than analysis for language learning.

5. Meanings of the words are presented in linguistic and cultural context.
6. Opportunities are created for learners to associate the meaning of new words with parallel situations.
7. New words are introduced as and when it comes in the class.
8. Language materials are used to create appropriate situation.
9. Continuous repetition of language items.
10. The teacher raises questions related to created situation and s/he answers them.
11. Revision is important.

STATUS OF MARATHI

In the Global and Indian Context - Scope of Marathi

Language Marathi is an important Indian language. Marathi has been playing an important role in our educational system as well as in our national life. Marathi is occupies an important place and position in media, courts, trade, commerce, industry, educational system and national life of Maharashtra and as well as India.

THE LEANING OUTCOMES

Based Curriculum Framework (LOCF) presented here visualizes that graduate training needs to attend to the following considerations:

1. Acquisition of graduate attributes and descriptors with demonstrated abilities through Marathi literature
2. Knowledge of Media and Information Literacy in the context of Marathi practice;
3. Application of Programme Media in Marathi practice;
4. Skill development and entrepreneurship abilities to be taught at undergraduate levels;
5. Learning by doing through concurrent and block Literature which provides an opportunity to the students for practice in diverse settings;
6. Selection of courses of their choice from a range of electives which allows in-built flexibility for students to learn they are truly interested in and avoid that which they may not be much inclined to learn; and
7. Development of research and analytical abilities through dissertation as a separate paper at the honours or research degree level in the fourth year of the undergraduate degree.

MAINTAINING LANGUAGE SKILLS AND CULTURAL CONNECTIONS

For those students who already have some knowledge of the MARATHI language or a family connection to the culture, the study of MARATHI offers the opportunity to learn and enhance their language and cultural heritage.

PERSONAL AND COGNITIVE BENEFITS

There is significant evidence to suggest that learning another language contributes to the development of first language skills and enhances cognitive functioning. Learning an additional language increases the ability to conceptualize, to think abstractly, and fosters more cognitive flexibility, greater divergent thinking and metalinguistic competence.

ECONOMIC BENEFITS

In today's world, the knowledge of an additional language and culture in general, and MARATHI in particular, provides individuals with an economic advantage. Learning another language enables them to communicate and interact effectively in the global community and marketplace.

GLOBAL CITIZENSHIP

Preparing students to meet the challenges in a world that is increasingly interdependent is one of the more important objectives of language education. Globalization and our multicultural society have increased the need for knowledge of other languages and cultures for effective communication. Through the study of languages, students learn to recognize, respect and appreciate the cultural diversity of Canadian society and contribute to our global community.

Learning MARATHI, just as learning any other language, develops thinking skills and learning strategies that are transferable to other learning situations. The study of MARATHI also develops awareness of, and sensitivity to, the cultural and linguistic diversity of our communities.

ASSUMPTIONS

The following statements are assumptions that have guided the development of this program.

- Language is communication.
- All students can be successful learners of language and culture, although they will learn in a variety of ways and acquire proficiency at varied rates.
- All languages can be taught and learned.
- Learning MARATHI as an additional language leads to enhanced learning in both the student's primary language and in related areas of cognitive development and knowledge acquisition. This is true for students who come to the class with some background knowledge of MARATHI and further develop skills in their language.

THE CONCEPTUAL MODEL

The aim of this program is the development of communicative competence in MARATHI.

Four Components

For the purposes of this program, communicative competence is represented by four interrelated and interdependent components.

- **Applications** deal with what the students will be able to do with the language, the functions they will be able to perform and the contexts in which they will be able to operate.
- **Language Competence** addresses the students' knowledge of the language and their ability to use that knowledge to interpret and produce meaningful texts appropriate to the situation in which they are used.
- **Global Citizenship aims** to develop intercultural competence with a particular focus on cultures associated with the Arabic language.

•**Strategies help** students learn and communicate more effectively and more efficiently. Each of these components is described more fully at the beginning of the corresponding section of this course series.

MODES OF COMMUNICATION

Because of the focus on using language to communicate in specific contexts, with a particular purpose or task in mind, three modes of communication are used to organize some of the specific outcomes.

• **Interaction** is most often direct, face-to-face oral communication, but it can take the form of written communication between individuals, using such a medium as e-mail where the exchange of information is fairly immediate. It is characterized principally by the opportunity to negotiate meaning actively; that is, helping others understand and working to understand others. Interactive communication generally requires quicker processing but less accuracy than the other two modes.

• **Interpretation** is receptive communication of oral and written messages in contexts where the listener or reader is not in direct contact with the creator of the message. While there is no opportunity to ask for clarification, there is sometimes the possibility of rereading or listening again, consulting references, or making the meaning clearer in other ways.

• **Reading and listening** will sometimes involve viewing and interpreting visual elements, such as illustrations in books or moving images in television and film. Interpretation goes beyond a literal comprehension to include an understanding of some of the unspoken or unwritten meaning intended by the speaker or author.

• **Production** is communication of oral and written messages in contexts where the audience is not in personal contact with the speaker or writer or in situations of one-to-many communication; e.g., a lecture or a performance where there is no opportunity for the listener to interact with the speaker.

• **Oral and written** presentations will sometimes be enhanced by representing the meaning visually, using pictures, diagrams, models, drama techniques or other nonverbal forms of communication.

• **Greater knowledge** of the language and culture is required to ensure that communication is successful, since the participants cannot directly negotiate meaning.

OBJECTIVES

Students should be able to identify, analyze, interpret and describe the critical ideas , values and themes, that appear in literary and cultural texts and understand the way these ideas – values. Further able to :

• To understand meaning, characteristics and functions of language
• To know principles of language learning ;
• To realize nature and scope of Marathi language in India and global level;
• To get some insight into different types of aims and objectives of Teaching Marathi;
• To realize the objectives of teaching different skills of Marathi;
• To recognize objectives of teaching prose and poetry; and
• To understand objectives of teaching Marathi at different levels of education.

OBJECTIVES OF TEACHING MARATHI

a. Understand Marathi when spoken;

b. Speak Marathi correctly and fluently;

c. Read Marathi with comprehension at a reasonable speed for gathering information and enjoy reading;

d. Write Marathi neatly and correctly with proper speed and legibility;

e. Acquire knowledge of the elements of Marathi for achieving a practical command of the language; and

f. Translate Marathi into their mother tongue and vice-versa

AIMS OF U.G. MARATHI PROGRAM / COURSE

The central aim of the U.G. Marathi program is to inculcate among the students the values, knowledge, skills, and techniques necessary for working with individuals, groups, communities and for collective action to bring about positive social change. In order to fulfil this, U.G. Marathi program comprises a wide range of courses including the core, supportive and inter-disciplinary domains of literary field. The programme is strongly committed to a diverse learning environment, in which respect for dignity and worth of all human beings and understanding of diverse conditions would be practiced. It respects individual uniqueness and offers a professional programme to build a foundation for practice with population groups, keeping the larger goal in mind.

- Create and cultivate taste in Marathi literature.
- Understand to analyze, evaluate and appreciate literary texts.
- Develop ability for in-depth study of literature.
- Understand the history of Marathi literature.
- Get the concept of literary history Clarified.
- Get acquainted to various movements in Modern Marathi literature.
- Generate interest in modern Marathi literature
- Get introduced to media.
- Develop skill in preparing materials for media including Newspaper, Radio and TV.
- Understand the nature and function of literature.
- Understand the nature of the process of literary creation and the concept of literary genus.
- Acquire ability to analyze the process of literary appreciation.
- Get acknowledged to some fundamental concepts in literary appreciation.
- Understand the original development of Marathi language in the light of linguistic theories.
- Understand the evolution of Marathi language.
- Get acquainted to the basic features of Marathi language.
- Get introduced to historical and descriptive linguistics.
- Acquire writing skills for newspaper and media
- Master the skills of Marathi language
- Understand the importance of media in society

- Increase understanding of literature and critical theories
- Comprehend the concepts in criticism
- Become familiar with value added concepts in criticism
- Understand the tradition of critics and criticism in Marathi Literature 8. Enrich critical aptitude
- Awared about nature and scope of interdisciplinary research
- Understand the tradition of researchers in Marathi literature
- Comprehend the relation between the creative writer and his age
- Understand the contribution of various creative artists
- Comprehend the nature of folk literature and its types
- Acquire in-depth knowledge of contemporary issues in media and communication.
- Make use of recent developments and current debates in media and communication through the range of modules.
- Explain various specialist sub disciplines, including big data, digital cultures , mobile media, news and information.
- Explain the methods of production and technological practices and relevant social issues.
- Demonstrate proficiency in writing in one or more professional media writing applications

IDENTIFY OWN STRENGTHS AND DEVELOP AREAS FOR GROWTH

- is aware of own strengths and weaknesses
- is open to improvement and growth opportunities
- is able to propose activities according to own interests and talents
- is willing to participate in different activities
- is able to undertake a thoughtful self-evaluation
- is able to see themselves as individuals with various abilities and skills, some more developed than others.

DEMONSTRATE THAT CHALLENGES HAVE BEEN UNDERTAKEN, DEVELOPING NEW SKILLS IN THE PROCESS

- participates in an experience that demands an appropriate personal challenge; this could be with new or familiar experiences
- is willing to become involved in unfamiliar environments and situations
- acquires new skills and abilities
- increases expertise in an established area
- shows newly acquired or developed skills or increased expertise in an established area.

Demonstrate the skills and recognize the benefits of working collaboratively

- shares skills and knowledge
- listens respectfully to proposals from peers
- is willing to take on different roles within a team

• shows respect for different points of view and ideas makes valuable contributions

• is responsible for participating in the group

• readily assists others

•is able to identify, demonstrate and discuss critically the benefits and challenges of collaboration gained through experiences.

Demonstrate engagement with issues of global significance

• recognizes the global implications of local issues

• is able to identify global issues in the local or national community

• shows awareness of issues of global importance and takes concrete and appropriate actions in response to them either locally, nationally or internationally

• develops awareness and responsibility towards a shared humanity.

Recognize and consider the ethics of choices and actions

• recognizes ethical issues

• is able to explain the social influences on one's ethical identity

• takes into account cultural context when making a plan or ethical decision

• identifies what is needed to know in order to make an ethical decision

• articulates ethical principles and approaches to ethical decisions

• shows accountability for choices and actions

• is aware of the consequences of choices and actions regarding self, others involved and the community

• integrates the process of reflection when facing an ethical decision

TOTAL COURSE OUTCOMES (STUDENTS WILL BE ABLE TO)

• Develop Marathi reading & linguistic comprehension of students

• Understand the basic forms of fiction and Poetry.

• Develop interest in literature fiction and story.

• Inculcate moral and human values within themselves

• Understand the types of Marathi Short Story Writing.

• Develop Reading, Writing & Communication skills of students

• Develop attitude of literary forms Marathi Poetry.

• Students learn Values through literary works.

• The students are able to make accurate use of Marathi language in their respective fields.

• The students could communicate effectively in their various business situations.

• The verbal and non-verbal skills of communication are developed.

• Develop attitude of literary forms in Marathi novel and literary form

• Information about the history of modern Marathi Literature.

• Develop the Novel reading skills.

• Get information well known writer in Marathi.

- Get information about the biography and autobiography.
- Know the concept of old Gadya Wangamaya.
- Know the concept Padya Wangamaya.
- Get information about Sant Poet & their literature.
- Get information about Sant literature forms.
- Get information well Known Poet Sant Dnyaneshwar, Sant Namadev, Sant Tukaram, Sant Sant Ekanath, Chokhamela, Sant Janabai, Sant Narhari Sonar etc.
- The students develop interest in the old Marathi literature
- Information about the ancient Marathi Literature.
- Know the concept and process of Literature.
- Information about the history of Marathi Literature.
- Know the concept & process Literature.
- Increase vision regarding literary value.
- Develop literary tendencies.
- Understand the types of Marathi Short Story Writing skills,
- Know the concept and process of literature.
- Know the concept of Drama.
- The students learn the origin of drama as dramatics art and is skills.
- Students are acquainted with the language, style, dialogue structure of the age to which it belongs.
- Students learn value through literary works.
- Introduce to the Minor genres such as one act play.
- Use literature to develop their social and moral sense in life.
- Develop attitude of literary forms.
- Know the Types of Marathi Wagamaya.
- Know the importance of language in human life.
- Know the various methods to the study of language.
- Understand the communication process and method.
- Know the concept of Linguistics.
- Know the importance of language in human life.
- Know the various methods to the study of language.
- Understand the communication process and method.
- Connect literature to real life experience.
- Understand various branches and movements of Marathi literature.
- Develop linguistic skills to meet the requirements in the age of globalization.
- Develop the skill of translation etc.

SOME OF THE CHARACTERISTIC ATTRIBUTES THAT A MARATHI GRADUATE SHOULD DEMONSTRATE AT THE END OF THE PROGRAM ARE AS FOLLOWS:

Identify own strengths and develop areas for growth :

• Is aware of own strengths and weaknesses

• Is open to improvement and growth opportunities

• Is able to propose activities according to own interests and talents

• Is willing to participate in different activities

• Is able to undertake a thoughtful self-evaluation

• Is able to see themselves as individuals with various abilities and skills, some more developed than others.

Demonstrate that challenges have been undertaken, developing new skills in the process

• Participates in an experience that demands an appropriate personal challenge; this could be with new or familiar experiences

• Is willing to become involved in unfamiliar environments and situations

• Acquires new skills and abilities

• Increases expertise in an established area

• Shows newly acquired or developed skills or increased expertise in an established area.

Demonstrate how to initiate experience

• Shows initiative by launching a new idea or process

• Suggests creative ideas, proposals or solutions

• Integrates reflective thoughts in planning or taking initiative

• Is aware of roles and responsibilities when designing an individual experience

• Shows responsible attitude to project planning

Show commitment to and perseverance in experiences

• Demonstrates regular involvement and active engagement

• Is able to foresee potential challenges to the initial plan and consider valid alternatives and contingencie

• Demonstrates adaptability to uncertainties and changes

• Gets involved in long-term experiences.

Demonstrate the skills and recognize the benefits of working collaboratively :

• Shares skills and knowledge

• Listens respectfully to proposals from peers

• Is willing to take on different roles within a team

• Shows respect for different points of view and ideas makes valuable contributions

• Is responsible for participating in the group

• Readily assists others

Demonstrate engagement with issues of global significance

• Recognizes the global implications of local issues

• Is able to identify global issues in the local or national community

• Shows awareness of issues of global importance and takes concrete and appropriate actions in response to them either locally, nationally or internationally

• Gets involved in addressing global issues in a local, national or international context

• Develops awareness and responsibility towards a shared humanity.

Recognize and consider the ethics of choices and actions

• Recognizes ethical issues

• Is able to explain the social influences on one's ethical identity

• Takes into account cultural context when making a plan or ethical decision

• Identifies what is needed to know in order to make an ethical decision

• Articulates ethical principles and approaches to ethical decisions

• Shows accountability for choices and actions

• Is aware of the consequences of choices and actions regarding self, others involved and the community

• Integrates the process of reflection when facing an ethical decision

• Shows awareness of the potential and varied consequences of choices

GENERAL OUTCOMES

General outcomes are broad statements identifying the knowledge, skills and attitudes that students are expected to achieve in the course of their language learning experience. The four general outcomes serve as the foundation for this Marathi program and are based on the conceptual model outlined on the preceding pages.

APPLICATIONS

• Students will use Marathi in a variety of situations and for a variety of purposes.

LANGUAGE COMPETENCE

• Students will use Marathi effectively and competently.

GLOBAL CITIZENSHIP

• Students will acquire the knowledge, skills and attitudes to be effective global citizens. Strategies

• Students will know and use various strategies to maximize the effectiveness of learning and communication.

The order in which the general outcomes are presented in the program does not represent a sequential order, nor does it indicate the relative importance of each component. The general outcomes are to be implemented in an integrated manner.

SPECIFIC OUTCOMES

Each general outcome is further broken down into specific outcomes that students are to achieve by the end of each course. The specific outcomes are interrelated and interdependent. In most classroom activities, a number of learning outcomes will be dealt with in an integrated manner. The specific

outcomes are categorized under cluster headings, which show the scope of each of the four general outcomes.

These headings are shown in the table on the following page.

- The specific outcomes are further categorized by strands, which show the developmental flow of learning from the beginning to the end of the program. However, an outcome for a particular course will not be dealt with only in that particular year of the program.
- The spiral progression that is part of the conceptual model means that activities in the years preceding will prepare the ground for acquisition and in the years following will broaden applications.

THE SALIENT FEATURES OF THE CREDIT BASED SEMESTER SCHEME

Each course shall carry certain number of credits. Credits normally represent the weightage of a course and are a function of teaching, learning and evaluation strategies such as the number of contact hours, the course content, teaching methodology, learning expectations, maximum marks etc. In the proposed programs, generally one hour of instructions per week in a semester is assigned one credit. In terms of evaluation, one credit is generally equivalent to 25 marks in a semester. Thus a 3 or 4 credits course will be assessed for 100 marks, 2 credits courses are assessed for 50 marks and one credit course will be assessed for 25 marks. What matters for the calculation of Semester Grade Point Average (SGPA) or the Cumulative Grade Point Average (CGPA) is the percentage of marks secured in a course and the credits assigned to that course. On this basis, generally, a three-year six-semester undergraduate program will have around 142 credits, and a four-year eight-semester honors degree program will have around 184 credits and a five-year ten-semester master's degree programme will have 228 credits.

The general features of the Credit Based Semester Scheme are

a) The relative importance of subjects of study are quantified in terms of credits.

b) The subjects of study include core, elective, ability/skill enhancement courses

c) The programme permits horizontal mobility in course selections.

d) The students shall take part in co-curricular and extension activities.

e) The declaration of result is based on Semester Grade Point Average (SGPA) or Cumulative Grade Point Average (CGPA) earned

CREDIT REQUIREMENTS:

The candidates shall complete courses equivalent to a minimum of 142 credits to become eligible for the Regular Bachelor Degree, 184 credits to become eligible for the Bachelor Degree with Honours 228 credits to become eligible for the Integrated Master's Degree.

COURSES DESCRIPTION:

1. Discipline Specific Course [DSC]: Are compulsory core courses of the program: Every semester consists of Core Course/s which is to be compulsorily studied by a student as a core requirement to complete the programme in MARATHI Language discipline.

2. Minor Discipline Course: Minor Discipline is a secondary specialization that one may choose to pursue in addition to a Major Discipline. They may be related areas of studies or two distinct areas of studies which are not interrelated at all.

3. Discipline Specific Elective [DSE)/Open Elective (OE)]: Offered under the main discipline/subject of study**:** An elective course focuses on those courses which add generic proficiency to the students. An elective may be 'Discipline Centric' or an 'Open Elective.' Discipline-centric elective courses are value-addition to the students of MARATHI in strengthening their knowledge and skills and in doing so help them to be able to follow their interest. Open elective courses may be chosen from an unrelated discipline so that they gain a multidisciplinary perspective and this also provides the much-required flexibility to the students to select any of the courses offered in the college/ University.

4. Ability Enhancement Compulsory Courses [AECC]: course based upon the content that leads to the knowledge of language history, significance of the language, as well as history of MARAHI Literature through learning the grammar and translation skills. In the CBCS scheme of this undergraduate programme, the students are mandatorily required to choose two subjects of their liking for additional knowledge and building their competencies outside their main subjects of study.

5. Skill Enhancement Courses [SEC]: These courses designed to provide value-based and/or skill based knowledge aimed at providing theory, lab/hands on training/fieldwork, competencies, skills etc

6. Project work/ Dissertation/ Internship/ Entrepreneurship Project work is a special course involving application of knowledge in solving / analyzing / exploring a real life situation / difficult problem/ data analysis. Project Work has the intention to provide research competencies at undergraduate level. It enables to acquire special/ advanced knowledge through support study/a project work. Candidates shall carry out project work on his/her own with an advisory support by a faculty member to produce a dissertation/ project report. Internship/ Entrepreneurship shall be an integral part of the Curriculum

STUDENTS WHO STUDY NEW LANGUAGES (OE) HE/SHE ENABLE TO

Better at making decisions

If you struggle to make decisions, learning another language might just be the solution to your problems! According to a new study, people who speak more than one language are better decision-makers, because they are less susceptible to conditioning and framing techniques. Simply put, they can stay level-headed when they're asked a question. This means that multilingual aren't as swayed by the language used in advertisements and political broadcasts, and they can make their decisions without being influenced by emotions.

Brain will change

When you study languages, the work you do could even change the structure of your brain! Researchers from Sweden studied two groups of scholars – one which studied languages, and another that didn't. By using MRI scans, it was found that the brains of the scholars who had studied languages were larger, while the brains of the other group were regular-sized. The growth was mostly based in the parts of the brain related to language skills

find studying easier

Learning a new language, or even being surrounded by lots of languages, can have a big impact on your studies. It's been found that babies brought up in multilingual environments develop stronger memories than ones brought up in single-language homes. Multiple language speakers have also been shown to be better at remembering lists or sequences. So if you learn a new language you're more likely to have a better memory, and you'll find studying easier because you'll spend less time relearning old notes!

Become more creative

Researchers have also found that you're likely to be a more creative person if you learn another language. It's common to forget certain words when you're swapping between languages, which forces you to choose others with the same meaning to fill the gap. It's thought that having to reach out for alternative words makes you more skilful at thinking outside of the box, and better at finding lots of solutions to the same problems. Score!

Brain will be healthier

If you learn another language, it's likely that your brain will stay healthier for longer So if you learn another language as an international student, your brain will age less quickly.

Become more focused

As a multilingual, you'll be better at controlling your attention and tuning out distractions – or so recent research suggests. A study by Northwestern University discovered that speaking more than one language was good for the brain, as it trains it to process information more efficiently.

Have better listening skills

When you're sitting in class, you'll automatically have an advantage over your peers if you can speak more than one language – you'll be better at listening! Recent studies have shown that bilinguals are better at distinguishing between different types of sounds in two or more languages, which will come in handy when your professors are debating in your next lecture.

Improve your native language

Weirdly enough, if you learn a second language, you'll also improve your native one. When you first learn to speak as a child, you typically pick up different words and expressions as you listen to people talking around you. But you may not fully appreciate the underlying structure of what you're saying.

Learning a new language will also help you make wiser financial decisions, as studies have shown that those who speak multiple languages are more self-aware spenders, viewing 'hypothetical' and 'real' money more similarly than people who speak just one. Researchers believed this was because the participants had less of an emotional reaction to things they heard in their second language, so they were less likely to act on impulse (and more likely to hold on to their cash!).

STUDENT LEARNING OUTCOMES FOR THE MARATHI MAJOR/MINOR (B.A.)

Marathi major/minor from all semester should be able to:

• Read a variety of texts critically and proficiently to demonstrate in writing or speech the comprehension, analysis, and interpretation of those texts;

• Write a literary or expository text using the conventions of standard Marathi as stylistically appropriate, while showing a nuanced use of language (producing such a text may include invention, workshopping, research, compiling bibliographies, drafting, peer responses, revising, and/or editing);
• Demonstrate knowledge and comprehension of major texts and traditions of language and literature written in Marathi as well as their social, cultural, theoretical, and historical contexts;
analyze and interpret texts written in Marathi, evaluating and assessing the results in written or oral arguments using appropriate support;
• Design and create texts for a variety of purposes and audiences, evaluating and assessing the effectiveness and meaning of such texts.
• Develop knowledge of vocabulary and grammar.
• Learn expression and translation.
• Learn to analyse interpret and write advertisement and report which also develops employable skills.
• Learn to write invitations of different forms .and also learn about journal front page and last page writing and News in newspaper, Television and Radio etc.
• Develop writing skills to write complains and group discussions
• Develop skills to write and read news at radio/ radio jockey & T.V. station.
• Develop creativity and leadership skills through essay writing thus learn to think quickly, write persuasively and present well connected ideas in a compact manner.

EMPLOYMENT AREAS FOR BACHELOR OF ARTS [B.A.] IN MARATHI

Several career opportunities are available for Marathi graduates in the field of teaching, translating or as a freelancer:
• Most of the educational institutions look for the experts in Marathi languages and literature in teaching field.
• Candidates have an option for taking private tuitions is also available.
• There are various types of jobs available as an interpreter, such as a consecutive interpreter, general interpreter and liaison interpreter.
• Graduate as a translator also works in fields such as scientific literacy, technical or business.
• Freelancers can join research firms, translation bureaus, publishing houses, media field i.e. print media, radio, television, blog writing, e-journalism, hotel industry, travel and tourism sector etc.
• And also in the field of Educational Institutes, Fire Department, Economic Development, Export Companies, Foreign Affairs, Field Research Firms, Marketing Research Firms, Municipal Planning, Multinational Companies etc.

THE UG PROGRAMME IS STRUCTURED IN A SEMESTER MODE WITH MULTIPLE EXIT OPTIONS

- **I Year Certificate in B.A. (50 Credits).**
- **II Year Diploma in B.A. (100 Credits).**
- **III Year B.A. Degree (142 Credits).**
- **IV Year Bachelor of Marathi Degree (Honours / Research Degree) (184 Credits).**

QUALIFICATION DESCRIPTORS FOR B.A.(MARATHI) PROGRAM

A qualification descriptor indicates the generic outcomes and attributes expected for the award of a particular type of qualification. It also describes the academic standard for a specific qualification in terms of the levels of knowledge and understanding, skills and competencies and attitudes and values that the holders of the qualification are expected to attain and demonstrate. These descriptors also indicate the common academic standards for the qualification and help the degree-awarding bodies in designing, approving, assessing and reviewing academic programmes.

ELIGIBILITY

Criteria for admission of B.A. course as per notification of the University from time to time.

EVALUATION

SCHEME OF EXAMINATION AND EVALUATION

There shall be a University Examination at the end of each semester for theory examination. Duration of examination per theory paper of 60 marks shall be for Two hours. Each theory paper shall comprise of from all the 5 units of the syllabus. Each of these questions shall have an alternate /internal choice, either in the form of main question or short notes etc.

INTERNAL ASSESSMENT

Internal Assessment shall be for total 40 marks for Theory Test/Home Assignment/Seminars/ Class participation/Attendance etc. Results of the students shall be declared as per the University rules and regulations.

ATTENDANCE

A candidate shall be considered to have satisfied the requirement of attendance for a semester if he/she attends not less than 75% of the number of classes actually held up to the end of the semester in each of the subjects. There shall be no minimum attendance requirement for the Co-curricular and extension activities.

DRAFT CURRICULUM

Name of the Degree Program: Bachelor of Arts (Marathi)

Discipline Core: Marathi

Total Credits for the Program: 184 Credits for IV years programme

Starting year of Implementation: 2021-22

ASSESSMENT

Weightage for assessments (in percentage)

Assessment is an integral part of the teaching learning process. A multidisciplinary program requires a multidimensional assessment to measure the effectiveness of the diverse courses. The assessment process acts as an indicator to both faculty and students to improve continuously.

The following are the guidelines for effective assessment of the program:

a) Student assessment should be as comprehensive as possible and provide meaningful and constructive feedback to faculty and student about the teaching-learning process.

b) Assessment tasks need to evaluate the capacity to analyze and synthesize new information and concepts rather than simply recall information previously presented.

c) The process of assessment should be carried on in a manner that encourages better student participation and rigorous study.

d) Assessment should be a combination of continuous formative evaluation and an endpoint summative evaluation.

e) A range of tools and processes for assessment should be used (e.g. open book tests, portfolios, case study/assignments, seminars/presentations, field work, projects, dissertations, peer and self-assessment) in addition to the standard paper-pencil test. The teachers concerned shall conduct test / seminar / case study, etc. The students should be informed about the modalities well in advance. The evaluated courses / assignments shall be immediately provided to the students.

f) Paper-pencil tests should be designed rigorously using a range of tools and processes (e.g. constructed response, open ended items, multiple-choice with more than one correct answer). Faculty may provide options for a student to improve his / her performance in the continuous assessment mode.

g) Continuous/ Internal assessment marks shall be shown separately. A candidate who has failed or wants to improve the result, shall retain the IA marks, provides he/she fulfills the minimum requirements.

EVALUATION/ INTERNAL ASSESSMENT

Total marks for each course shall be based on continuous assessments and semester end examinations. As per the decision of the Karnataka State Higher Education Council, it is necessary to have uniform pattern of 40 : 60 for IA and Semester End examinations respectively, in all the Universities, their Affiliated and Autonomous Colleges.

Total Marks for each course = 100%

Continuous assessment (C1) = 20% marks

Continuous assessment (C2) = 20% marks

Semester End Examination (C3) = 60% marks.

Evaluation process of IA marks shall be as follows…

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course/s and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of remaining 50 percent of syllabus of the courses of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the University for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator / Principal. The Program Coordinator / Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be stamped by the concerned department using their department seal at the time of conducting tests / assignment / work etc.

f) The marks of the internal assessment shall be published on the notice board of the department / college for information of the students.

UNDER GRADUATE IN MARATHI

MARATHI (AECC)

B. Com.: Ability Enhancement Compulsory Course (AECC)

B.Sc.: Ability Enhancement Compulsory Course (AECC)

B.A: Ability Enhancement Compulsory Course (AECC)

BBA /BCA/BSW Etc. Courses: (AECC)

QUESTION PAPER PATTERN (WITOUT PRACTICAL)

Qn. No.	Particulars		Marks	Total
Theory				
SECTION - A				
I	Objective Type Questions (Compulsory)	5 out of 5	02	10
II	Reference to Context(Prose/Poetry)	3 out of 5	05	15
SECTION - B				
III	Short Answer Questions (Prose/ Poetry)	3 out of 5	5	15
SECTION – C				
IV	Essay type Answer Questions (Prose / Poetry)	2 out of 4	10	20
TOTAL				**60**
Internal Assessment	IA Test (I & II)		20	**40**
	Assignment		10	
	Seminar/Activity/Presentation Etc.		10	
	TOTAL			**100**

BA with One Major and One Minor / Without Practical

Discipline Specific Core / Discipline Elective / Open Elective
MARATHI (DSC /DSE /OE)

QUESTION PAPER PATTERN WITOUT PRACTICAL

Qn. No.	Particulars		Marks	Total
Theory				
I	Objective Type Questions (Compulsory)	5 out of 5	02	10
II	Short Answer Questions	4 out of 6	05	20
III	Essay type Answer Questions	3 out of 5	10	30
TOTAL				**60**
Internal Assessment	IA Test (I & II)		20	**40**
	Assignment		10	
	Seminar/Activity/Presentation Etc.		10	
	TOTAL			**100**

Syllabus of B.A. with One Major and One Minor
MARATHI (DSC)

Title of the Subject/ Discipline : **MARATHI**				
Year	1	Course Code**: DSC-A1 : MARATHI (B.A.)**	Credits	3
Sem	I	Course Title : Discipline Core : **A-1 वाङ्मयप्रकार : कथा (A-1-Wangmayaprakar: Katha)** **Text- उपेक्षितांचे अंतरंग - *श्री. म. माटे*, *कॉन्टिनेंटल प्रकाशन, पुणे***	Total Hours	64

Formative Assessment Marks : 40	Summative Assessment Marks : 60	Duration of ESA: 4 Hrs.

Learning Outcomes	1. To understand the basics of Marathi Prose and short stories in the Marathi literature 2. To develop the literary taste in Marathi literature 3. To perceive the literary merit, beauty and creative use of short stories writings in Marathi 4. Students able to see themselves as individuals with various ability and skills 5. To understand trends and various types of short story in Marathi literature

Unit No.	**Course Content / अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	मराठी कथा वाङ्मय : उगम व विकास	1.Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual mode 5.Listening the Tribals 6.Class Seminar 7.Interview of Tribal person	12
II	कथाकार श्री. म. माटे		13
III	***'उपेक्षितांचे अंतरंग*** 'मधील आशयसूत्र आणि सामाजिकता		13
IV	***'उपेक्षितांचे अंतरंग'*** मधील व्यक्तिरेखा		13
V	***'उपेक्षितांचे अंतरंग'*** ची वाङ्मयीन वैशिष्ट्ये		13

Recommended Learning Resources

Print Resources	1. 'उपेक्षितांचे अंतरंग' - श्री. म. माटे, कॉन्टिनेंटल प्रकाशन, पुणे 2. मराठी कथा : उगम आणि विकास - इंदुमती शेवडे, सोमय्या प्रकाशन, मुंबई 3. मराठी साहित्य : प्रेरणा व स्वरूप - संपा. गो. म. पवार, 4. मराठी कथा : रूप आणि परिसर - म. द. हातकणंगलेकर
Digital Resources	**http://storymirror.com** **http://marathivishwakosh.org** **http://marathi.pratilipi.com** **http//:mr.vikaspedia.in** **http://www.maayboli.com** **http://esahity.com**

***Title of the Subject/ Discipline :* MARATHI**				
Year	1	Course Code: **DSC-A-2 : MARATHI (B.A.)**	Credits	3
Sem.	I	Course Title : **वाङ्मयप्रकार : काव्य** + मुद्रितशोधन **(A-2- Wangmayaprakar : Kavya+Mudritashodhan)** Text : **काव्यसरिता** - *संपा. रमेश तेंडुलकर / म. वि. गोखले* - महाराष्ट्र साहित्य परिषद, पुणे ***निवडक कविता-*** *स्फूर्ती (केशवसुत), ती कोण? (गोविंदाग्रज), संध्यारजनी (बालकवी), डोळे हे जुलमी गडे! (भा. रा. तांबे), अतर्क्य प्रेम (माधव ज्युलियन), दैवते माय-तात (यशवन्त), कवी आणि कारकून (केशवकुमार), सांगाती (अनिल), बांगड्या (बा. भ. बोरकर), स्वप्नाची समाप्ति (कुसुमाग्रज), पोर आणि कुत्रे (पु. शि. रेघे), धोंड्या न्हावी (विंदा करंदीकर), अजूनही (इंदिरा संत), जिप्सी (मंगेश पाडगावकर), नाही दियामधी तेल (बहिणाबाई चौधरी)*	Total Hours	64

Formative Assessment Marks : 40	Summative Assessment Marks : 60	Duration of ESA: 4 Hrs.

Learning Outcomes	1. To understand the basics of Poetry & understand various concepts of poetry skills. 2. To understand the terminology in Poetry & best sample of modern Marathi Poetry 3. To acquire ability to read, write evaluate the poetry independently. 4. To acquire ability to correct spelling & grammar usage etc. 5. To understand the evaluate strategies for improving sentences clarity.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	मराठी कविता : स्वरूप आणि विकास	1.Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual mode 5.PPT Presentation 6.Class Seminar 7.Visit to Newspaper	12
II	'***काव्यसरिता*** ' : कवी आणि काव्याचे स्वरूप		13
III	'***काव्यसरिता*** ' ची वाङ्मयीन वैशिष्ट्ये		13
IV	मुद्रितशोधनाचे स्वरूप, प्रकार, खुणा व आवश्यकता		13
V	मुद्रितशोधन आणि प्रसारमाध्यमे		13

Recommended Learning Resources	
Print Resources	1. कविता : भाषा व परिसर - डॉ. शिवाजी पाटील, रजत प्रकाशन, औरंगाबाद 2. प्रदक्षिणा - कॉन्टिनेंटल प्रकाशन, पुणे 3. आधुनिक मराठी वाङ्मयाचा इतिहास - डॉ. मोहन शेळके, अल्फा पब्लिकेशन्स, नांदेड 4. साठोत्तरी मराठी कविता व कवी - रा. ग. जाधव, साकेत प्रकाशन, औरंगाबाद 5. व्यावहारिक मराठी - ल. रा. नासिराबादकर, फडके प्रकाशन, कोल्हापूर 6. मुद्रितशोधन व सर्जनशील लेखन - प्रा. पुरुषोत्तम महाजन, अथर्व पब्लिकेशन्स, जळगाव
Digital Resources	**http://marathivishwakosh.org** **http://marathi.pratilipi.com** **http//:mr.vikaspedia.in** **http://www.maayboli.com** **http://esahity.com**

Title of the Subject/ Discipline : **MARATHI**				
Year	1	Course Code : **DSC-A-3 : MARATHI (B.A.)**	Credits	3
Sem.	II	Course Title : Discipline : वाङ्मयप्रकार : नाटक **(Literary Form : Drama)** **Text** - **'सत्यशोधक'** - *गो. पु. देशपांडे, लोकवाङ्मय गृह, मुंबई*	Total Hours	64

Formative Assessment Marks : 40	Summative Assessment Marks : 60	Duration of ESA: 4 Hrs.

Learning Outcomes	1. To get acquainted with the terminology in drama criticism 2. To understand few sample master preces of Marathi Drama 3. To understand the basics of Drama as a popular literary form 4. To understand some of the best sample of modern Marathi drama. 5. To acquire ability to appreciate and analyse drama independently

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	वाङ्मप्रकार नाटक : स्वरूप आणि वाटचाल	1.Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual mode 5.Enacting part of play 6.Class Seminar 7.Visit to Drama company 8.Play practice etc.	12
II	नाटककार गो. पु. देशपांडे		13
III	*'सत्यशोधक'* चा आशयविश्व		13
IV	*'सत्यशोधक'* मधील व्यक्तिरेखा		13
V	*'सत्यशोधक'* ची वाङ्मयीन वैशिष्ट्ये		13

Recommended Learning Resources

Print Resources	1. राज**की**य नाटक आणि गो. पु. देशपांडे- डॉ.रमेश साळुंखे, ललित प्रकाशन 6, माने कंपाऊंड टी.जे.रोड शिवडी, मुंबई 2. मराठी नाट्यसृष्टी - जी. एम. कुलकर्णी, मेहता पब्लिशिंग हाऊस, पुणे 3. जागतिक रंगभूमी - माणिक कानडे, रोहन प्रकाशन, पुणे 4. दलित नाट्य वाङ्मय - डॉ. यशवंत राऊत, गोदा प्रकाशन, औरंगाबाद 5. नाट्यसमीक्षा - संपा. डॉ. व्ही. बी. देशपांडे, मेहता पब्लिशिंग हाऊस, पुणे.
Digital Resources	**http://marathivishwakosh.org** **http://marathi.pratilipi.com** **http//:mr.vikaspedia.in** **http://www.maayboli.com** **http://esahity.com**

Title of the Subject/ Discipline : **MARATHI**				
Year	1	Course Code : **DSC- A-4 : MARATHI (B.A.)**	Credits	3
Sem.	II	Course Title : Discipline : **A-4-उपयोजित मराठी (Upayojit Marathi)**	Total Hours	64
Formative Assessment Marks : 40		Summative Assessment Marks : 60	Duration of ESA: 4 Hrs.	

Learning Outcomes	1. To create and cultivate taste in Marathi Language and literature 2. To generate interest in the various objects of languages used in office and media 3. To understand nature and functions of language 4. To master the skills of Marathi language to be used in various media and office. 5. To acquire writing skills for newspaper(media) and offices 6. To develop skills in preparing materials for media including Newspaper, Radio & T.V. etc.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	मराठी भाषा कौशल्ये आणि व्यावसायिक संधी	1.Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual mode 5.PPT Presentation 6.Class Seminar 7.Topic Discussion 8.Visit to Media/Study Tour 9.News writing practice	12
II	कार्यालयीन पत्रव्यवहार		13
III	मराठी भाषा आणि प्रसारमाध्यमे		13
IV	वृत्तपत्र : बातमीसंकलन आणि लेखनकौशल्ये		13
V	जाहिरात मसुदालेखन		13

Recommended Learning Resources

Print Resources	1. उपयोजित मराठी - डॉ. संजय लांडगे, दिलीपराज प्रकाशन, पुणे 2. मराठी भाषिक कौशल्ये विकास - संपा. डॉ. पृथ्वीराज तौर, अथर्व पब्लिकेशन्स, धुळे 3. व्यावहारिक मराठी - ल. रा. नासिराबादकर, फडके प्रकाशन, कोल्हापूर 4. पत्रकारिता मार्गदर्शन - एल. के. कुलकर्णी, पुणे विद्यार्थी गृह प्रकाशन, पुणे 5. मराठी पत्रकारिता - ए. व्ही. देशपांडे, सुखदा सौरभ प्रकाशन, पाटण 6. व्यावहारिक मराठी - संपा. डॉ. स्नेहल तावरे, स्नेहवर्धन प्रकाशन, पुणे
Digital Resources	**http://marathivishwakosh.org** **http://marathi.pratilipi.com** **http//:mr.vikaspedia.in** **http://www.maayboli.com** **http://esahity.com**

Syllabus of B.A. with One Major and One Minor
MARATHI (OE)

Title of the Subject/ Discipline : MARATHI				
Year	1	Course Code : **OE -1 : MARATHI**	Credits	3
Sem.	I	Course Title : Discipline : **OE-1-मराठी साहित्य आणि कथा** (Marathi Sahitya ani Natak) **Text-** **'नागीण' -** *चारुता सागर, साकेत प्रकाशन, औरंगाबाद* (निवडक कथा) (नागीण, कुठं वाच्चता नसावी, दावं, ढोलगं, म्हस, न लिहिलेलं पत्र, पुंगी, वाट, दर्शन)	Total Hours	64

Formative Assessment Marks : 40	Summative Assessment Marks : 60	Duration of ESA: 4 Hrs.

Learning Outcomes	1. To create and cultivate taste in Marathi Literature 2. To get acquainted to various movement in modern Marathi short story literature 3. To get major movement related to short story ,and works 4. To acquire literature sensibility for use of language in writers and various world views 5. To understand and to get the eternal life values

Unit No.	Course Content/ अभ्यासघटक	Suggested Pedagogy अध्यापनशास्त्र	Hours U/P/L
I	मराठी कथा : स्वरूप आणि वाटचाल	1.Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual mode 5.PPT Presentation 6.Class Seminar 7.Visit to Zoo 8.Interview of animal lovers 9.Awareness of enviornment	12
II	कथाकार चारुता सागर		13
III	'***नागीण***' मधील आशयविश्व		13
IV	***'नागीण'*** मधील व्यक्तिरेखा		13
V	***'नागीण'*** ची वाङ्मयीन गुणविशेष		13

Recommended Learning Resources

Print Resources	1. मराठी कथा : उगम आणि विकास - इंदुमती शेवडे, सोमय्या प्रकाशन, मुंबई 2. मराठी कथा : स्वरूप आणि परिसर - म. द. हातकणंगलेकर 3. ग्रामीण : समाज आणि कथा साहित्य - डॉ. मनोहर सुरवाडे, सुगम प्रकाशन, अमरावती 4. मराठी ग्रामीण कथा - संपा. प्रा. अंबादास माडगूळकर / सूर्यकांत खांडेकर, ठोकळ प्रकाशन, पुणे 5. ग्रामीण साहित्य : स्वरूप आणि समस्या - आनंद यादव, मेहता पब्लिशिंग हाऊस, पुणे 6. मराठीतील कथा रूपे - रा. ग. जाधव, स्नेहवर्धन प्रकाशन, पुणे
Digital Resources	**http://storymirror.com** **http://marathivishwakosh.org** **http://marathi.pratilipi.com** **http//:mr.vikaspedia.in** **http://www.maayboli.com** **http://esahity.com**

Title of the Subject/ Discipline : **MARATHI**				
Year	1	Course Code : **OE-2 : MARATHI**	Credits	3
Sem.	II	Course Title : Discipline :**OE-2- मराठी साहित्य आणि कादंबरी** **(Marathi Sahitya ani** Kadambari**)** **Text-** *'**नदीष्ट** - मनोज बोरगावकर, ग्रंथाली प्रकाशन, मुंबई*	Total Hours	64

Formative Assessment Marks : 40	Summative Assessment Marks : 60	Duration of ESA: 4 Hrs.

Learning Outcomes	1. To understand the basics of Short Stories as a literary form 2. To aware of different types and aspects of Short Stories 3. To develop literary sensibility and sense of cultural diversity 4. To acquire ability to apply the acquired linguistic skills in real life situations 5. To acquire knowledge of about Marathi literature and language.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	मराठी कादंबरी : स्वरूप आणि वाटचाल	1.Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual mode 5.PPT Presentation 6.Class Seminar 7.Environment and rivers	12
II	'***नदीष्ट***' मधील आशयसूत्र		13
III	'***नदीष्ट***' मधील व्यक्तिरेखा		13
IV	'***नदीष्ट***' मधून उलगडणारे समकालीन वास्तव		13
V	'***नदीष्ट***' - वाङ्मयीन विशेष		13

Recommended Learning Resources	
Print Resources	1. आधुनिक मराठी वाङ्मयाचा इतिहास - डॉ.मोहन शेळके, अल्फा पब्लिकेशन्स, नांदेड 2. कादंबरी : सार आणि विस्तार - डॉ. महेंद्र कदम, अक्षरदीप प्रकाशन, कोल्हापूर 3. कादंबरी समीक्षा - श्री. मा. कुलकर्णी, उन्मेष प्रकाशन, नागपूर 4. धार आणि काठ - नरहर कुरुंदकर, देशमुख आणि कंपनी, पुणे 5. मराठी कादंबरी: तंत्र आणि विकास - प्रभाकर बापट/ नारायण गोडबोले, व्हिक्टोरिया कॉलेज, लष्कर, ग्वाल्हेर 6. मराठी साहित्य : स्वरूप आणि समीक्षा - संपा. जयद्रथ जाधव / डॉ. भरत देशमुख, अरुणा प्रकाशन, नागपूर
Digital Resources	**http://storymirror.com** **http://marathivishwakosh.org** **http://marathi.pratilipi.com** **http//:mr.vikaspedia.in** **http://www.maayboli.com** **http://esahity.com** **www.bbc.com**

Syllabus of B.Com. Ability Enhancement Compulsory Course (AECC)

Title of the Subject/ Discipline : MARATHI				
Year	1	Course Code : **AECC-1, L-2 : MARATHI (B.Com.)**	Credits	3
Sem.	I	Course Title : Discipline **: वाङ्मयप्रकार : कथा + जाहिरात मसुदालेखन (Wangmayaprakar : Katha+Jahiratmasuda lekhan)** **Text- 'सांजवारा' -** *भीमराव गस्ती*, राज्ञी प्रकाशन, बेळगाव (निवडक कथा - *नातं, शाळा, पराजीत, चोरी देवाची, कोंबडा, बेवारस, राजगोळीच्या जमीनदाराला धडा, मस, सांजवारा*)	Total Hours	64

Formative Assessment Marks : 40	Summative Assessment Marks : 60	Duration of ESA: 4 Hrs.

Learning Outcomes	1. To understand the basics of short story as a one of popular literary form in Marathi literature 2. To understand and to get the dos eternal life of values. 3. To develop the literary taste and ability to appreciate literature 4. To develop advertisement writing skills in preparing materials for media. 5. To understand nature a functions of Advertisement writing and to get the jobs in media.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	मराठी कथा : स्वरूप आणि भीमराव गस्ती	1.Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual mode 5.PPT Presentation 6.Class Seminar 7.Topic Discussion 8.Visit to Media/Study Tour	12
II	*'सांजवारा'* मधील व्यक्तिरेखा		13
III	*'सांजवारा'* ची वाङ्मयीन विशेष		13
IV	जाहिरात : स्वरूप आणि प्रकार		13
V	जाहिरात मसुदालेखन आणि व्यावसायिक संधी		13

Recommended Learning Resources

Print Resources	1. मराठीतील कथारूपे - रा. ग. जाधव, स्नेहवर्धन प्रकाशन, पुणे 2. कथा : संकल्पना आणि समीक्षा - सुधा जोशी, मौज प्रकाशन, मुंबई 3. व्यावहारिक मराठी - डॉ. लीला गावीलकर आणि डॉ. जयश्री पाटणकर, स्नेहवर्धन प्रकाशन, पुणे 4. उपयोजित मराठी - डॉ. संजय लांडगे, दिलीपराज प्रकाशन, पुणे 5. व्यावहारिक मराठी - ल. र. नासिराबादकर, फडके प्रकाशन, कोल्हापूर
Digital Resources	**http://marathi.pratilipi.com** **http//:mr.vikaspedia.in** **http://www.maayboli.com** **http://esahity.com** **www.bbc.com** **http://www.goodreads.com**

***Title of the Subject/ Discipline* : MARATHI**				
Year	1	Course Code : **AECC-2,L-2 : MARATHI (B.Com.)**Course Title : Discipline : **वाङ्मयप्रकार : आत्मचरित्र + पत्रकारिता (Wangmayaprakar : Atmacharitra + Patrakarita)** **Text -** ***'मी वनवासी'*** *- सिंधुताई सपकाळ,* रिया पब्लिकेशन्स, कोल्हापूर	Credits	3
Sem	II		Total Hours	64
Formative Assessment Marks : 40		Summative Assessment Marks : 60	Duration of ESA: 4 Hrs.	

Learning Outcomes	1. To understand the development of personalities 2. To understand the way of structuring personality 3. To understand an account of a life and achievements 4. To learn from this autobiography how to work for downtroden peoples 5. To understand the life experiences and goals of the author 6. To provides opportunity for seeing patterns in one's life

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours L/P/L**
I	मराठीतील आत्मचरित्रे : स्वरूप व वाटचाल	1.Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual mode 5.PPT Presentation 6.Class Seminar 7.Topic Discussion 8.Visit to orphanage & old age home- Study Tour	12
II	***'मी वनवासी'*** मधील जीवन संघर्ष		13
III	***'मी वनवासी'*** ची वाङ्मयीन वैशिष्ट्ये		13
IV	मराठी भाषा आणि पत्रकारिता		13
V	बातमीलेखनाचे स्वरूप आणि व्यावसायिक संधी		13

Recommended Learning Resources	
Print Resources	1. चरित्र - आत्मचरित्र - अ. म. जोशी, स्नेहवर्धन प्रकाशन, पुणे 2. मराठीतील आत्मचरित्रात्मक लेखन - उषा हस्तक, स्नेहवर्धन प्रकाशन, पुणे 3. अविस्मरणीय चरित्रे - आत्मचरित्रे - नारायण भोसले, अथर्व प्रकाशन, जळगाव 4. वृत्तपत्र विद्या - प्रसन्नकुमार आकलूजकर, श्रीविद्या प्रकाशन, पुणे 5. उपयोजित मराठी - डॉ. संजय लांडगे, दिलीपराज प्रकाशन, पुणे
Digital Resources	**http://vishwakosh.marathi.gov.in** **http://marathivishwakosh.org** **http://marathi.pratilipi.com** **http//:mr.vikaspedia.in** **http://www.maayboli.com** **http://esahity.com** **www.bbc.com**

Syllabus of B. Sc. Ability Enhancement Compulsory Course (AECC)

Title of the Subject/ Discipline : **MARATHI**				
Year	1	Course Code : **AECC-1-L : 2 MARATHI (B.Sc.)**	Credits	3
Sem.	I	Course Title : Discipline : **वाङ्मयप्रकार : विज्ञान कथा + व्यावहारिक मराठी** **(Wangmay prakar : Vidnyan Katha + Vyavaharik Marathi)** **Text-** ***'वाळूचं गाणं'*** *- लक्ष्मण लोंढे,* ग्रंथाली प्रकाशन, मुंबई	Total Hours	64

Formative Assessment Marks : 40	Summative Assessment Marks : 60	Duration of ESA: 4 Hrs.

Learning Outcomes	1. To understand basics of short stories and identify own strengths and develop the scientific views 2. To demonstrate that challenges have been undertaken, developing the new skills in the process. 3. Ability to apply critical thinking and analyze data etc. 4. Able to acquire writing skills for newspaper and media. 5. Able to demonstrate written visual, oral presentation skills to communicate scientific knowledge for media.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	मराठी विज्ञान कथा : स्वरूप आणि वाटचाल	1.Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual mode 5.PPT Presentation 6.Class Seminar 7.Topic Discussion 8.Visit to Science center & Media	12
II	***'वाळूचं गाणं'*** मधील व्यक्तिरेखा		13
III	***'वाळूचं गाणं'*** चे वाङ्मयीन विशेष		13
IV	प्रसारमाध्यमांसाठी लेखनकौशल्ये		13
V	जाहिरातकला आणि व्यावसायिक संधी		13

Recommended Learning Resources

Print Resources	1. कथावाङमय : उद् गम आणि विकास - इंदुमती शेवडे, सोमय्या प्रकाशन, मुंबई 2. खडक आणि पाणी - गंगाधर गाडगीळ, उत्कर्ष प्रकाशन, पुणे 3. विज्ञाननिष्ठ निबंध भाग १ व २ - स्वातंत्र्यवीर सावरकर, रिया प्रकाशन, कोल्हापूर 4. उपयोजित भाषा विज्ञान आणि प्रसार माध्यमे - डॉ. प्रकाश कुंभार, अक्षरदालन, कोल्हापूर 5. पत्रकारिता मार्गदर्शन - एस. के. कुलकर्णी, पुणे विद्यार्थी गृह प्रकाशन, पुणे 6. व्यावहारिक मराठी-लीला गोविलकर/डॉ. जयश्री पाटणकर, स्नेहवर्धन पब्लिकेशन हाऊस, पुणे
Digital Resources	**http://vishwakosh.marathi.gov.in** **http://marathivishwakosh.org** **http://marathi.pratilipi.com** **http//:mr.vikaspedia.in** **http://www.maayboli.com** **http://esahity.com** **www.bbc.com**

***Title of the Subject/ Discipline :* MARATHI**				
Year	1	Course Code : **AECC-2-,L-2 : MARATHI (B.Sc.)**	Credits	3
Sem.	II	Course Title : Discipline : **वाङ्मयप्रकार : कादंबरी + पत्रकारिता (Wangmayaprakar:** Kadambari + **Patrakarita)** **Text -** ***'माझी काटेमुंढरीची शाळा'*** - गो. ना. मुनघाटे, *साधना प्रकाशन, पुणे*	Total Hours	64

Formative Assessment Marks : 40	Summative Assessment Marks : 60	Duration of ESA: 4 Hrs.

Learning Outcomes	1. To understand the way of structuring the personality and pattern one's life from the novel 2. To understand the an account of a persons life and achievement 3. To understand the life experiences and goals of the author 4. To introduce the basics of journalism and its role in the society 5. To develop skills in preparing materials for media including newspaper, radio and television.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	मराठी कादंबरी : स्वरूप व वाटचाल	1.Lecture Method 2. Assignment 3. Individual and group Life Experience presentation 4. Virtual mode 5.PPT Presentation 6.Class Seminar 7.Interview the novelist 8.Visit to Print Media Centre	12
II	***'माझी काटेमुंढरीची शाळा'-*** मधील आशयविश्व		13
III	***'माझी काटेमुंढरीची शाळा'*** ची वाङ्मयीन वैशिष्ट्ये		13
IV	मराठी भाषा आणि पत्रकारिता		13
V	बातमी लेखन : स्वरूप आणि संकलनकार्य		13

Recommended Learning Resources	
Print Resources	1. कादंबरी : एक साहित्य प्रकार - हरिश्चंद्र थोरात, शब्द प्रकाशन मुंबई 2. मराठी कादंबरीचा इतिहास - चंद्रकांत बांदिवडेकर, मेहता पब्लिशिंग हाऊस, पुणे 3. कादंबरी : सार आणि विस्तार - महेंद्र कदम, अक्षरदीप प्रकाशन, कोल्हापूर 4. पत्रकारिता मार्गदर्शन - एस. के. कुलकर्णी, पुणे विद्यार्थी गृह प्रकाशन, पुणे 5. पत्रकारिता विद्या - संपा. किरण गोखले, मॅजेस्टिक प्रकाशन, मुंबई 6. उपयोजित मराठी - डॉ. संजय लांडगे, दिलीपराज प्रकाशन, मुंबई
Digital Resources	**http://vishwakosh.marathi.gov.in** **http://marathivishwakosh.org** **http://marathi.pratilipi.com** **http//:mr.vikaspedia.in** **http://www.maayboli.com** **http://esahity.com** **www.bbc.com**

Syllabus of B.A. Ability Enhancement Compulsory Course (AECC)

Title of the Subject/ Discipline : MARATHI

Year	1	Course Code : **AECC-1, L-2 : MARATHI (B.A.)**	Credits	3
Sem.	I	Course Title : Discipline : **वाङ्मयप्रकार : कथा + व्यावहारिक मराठी** **(Wangmayaprakar : Katha + Vyavaharik Marathi)** **Text-** ***'तिची कथा'*** - संपा. मंगला आठलेकर, *राजहंस प्रकाशन, पुणे* *(निवडक कथा - अंतःकरणाचे रत्नदीप (विभावरी शिरूरकर), जानकी देसाईचे प्रश्न (विजया राजाध्यक्ष), एक पाऊल पुढे! (सानिया), आता कुठं जाशील टोळंभट्टा? (गौरी देशपांडे), शल्य (उर्मिला पवार)*	Total Hours	64

Formative Assessment Marks : 40	Summative Assessment Marks : 60	Duration of ESA: 4 Hrs.

Learning Outcomes	1. To understand the basics of short story, one of the popular literary form, 2. To perceive the literary merit, beauty and creative use of stories writing, 3. To develop the interest in reading literary books 4. To understand the importance and utility of Marathi languages & writing skills 5. To get linguistic competence and communication skills in various capacity 6. To develop skills in preparing materials for media including newspaper, radio and television.

Unit No.	Course Content/ अभ्यासघटक	Suggested Pedagogy अध्यापनशास्त्र	Hours U/P/L
I	मराठी कथा : स्वरूप व वाटचाल	1.Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual mode 5.PPT Presentation 6.Class Seminar 7.Writing short stories 8.Visit to Print Media & Publicity Centre	12
II	***'तिची कथा'*** मधील घटनाप्रसंग आणि व्यक्तिरेखा		13
III	***'तिची कथा'*** ची वाङ्मयीन वैशिष्ट्ये		13
IV	मराठी भाषा आणि पत्रव्यवहाराचे स्वरूप		13
V	जाहिरात मसुदालेखन आणि विपणन		13

Recommended Learning Resources

Print Resources	1. मराठी साहित्य : प्रेरणा आणि स्वरूप - डॉ. हातकणंगलेकर/गो. म. पवार, पॉप्युलर प्रकाशन, मुंबई 2. मराठी कथा : मूल्य आणि ऱ्हास - जी. के. ऐनापुरे, ललित पब्लिकेशन, मुंबई 3. कथा : रूप आणि आस्वाद - पंडित टापरे, निहारा प्रकाशन, पुणे 4. उपयोजित मराठी - प्रभाकर जोशी, प्रशांत पब्लिकेशन, जळगाव 5. मराठी भाषिक कौशल्ये विकास - संपा. डॉ. पृथ्वीराज तौर, अथर्व पब्लिकेशन्स, धुळे
Digital Resources	**http://vishwakosh.marathi.gov.in** **http://marathivishwakosh.org** **http://marathi.pratilipi.com** **http//:mr.vikaspedia.in** **http://www.maayboli.com** **http://esahity.com**

Title of the Subject/ Discipline : MARATHI				
Year	1	Course Code : **AECC-2, L-2 : MARATHI (B.A.)**	Credits	3
Sem.	II	Course Title : **Discipline : वाङ्मयप्रकार : आत्मचरित्र + पत्रकारिता** **Wangmayaprakar) : Atmacharitra+ Patrakarita)** **Text - '*स्त्री स्पंदने*'-** संपा. डॉ. स्नेहल तावरे, डॉ. शोभा पाटील, डॉ. संगीता देशमुख, *स्नेहवर्धन प्रकाशन, पुणे* *(निवडक स्त्री आत्मकथने - समिधा (साधना आमटे), चाकाची खुर्ची (नसीमा हुरजूक), आयदान (उर्मिला पवार), माझी मी (यशोधरा गायकवाड), मास्तरांची सावली (कृष्णाबाई सुर्वे)*	Total Hours	64

Formative Assessment Marks : 40	Summative Assessment Marks : 60	Duration of ESA: 4 Hrs.

Learning Outcomes	1. To get basic knowledge of autobiography 2. To understand aspects of autobiography 3. To get to learn about what an individual has been through and more often than not. 4. To inspire someone else with life story 5. Try to understand who I am and who I can be by examining how I respond to different situations and peoples. 6. To get to motivate, to entertain and to persuades

Unit No.	Course Content/ अभ्यासघटक	Suggested Pedagogy अध्यापनशास्त्र	Hours U/P/L
I	मराठीतील आत्मचरित्रे : स्वरूप आणि वाटचाल	1.Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual mode 5.PPT Presentation 6.Class Seminar 7.Study tour 8.Visit to Print Media	12
II	'*स्त्री स्पंदने* मधील जीवनदर्शन		13
III	'*स्त्री स्पंदने*' ची वाङ्मयीन वैशिष्ट्ये		13
IV	मराठी भाषा आणि प्रसारमाध्यम		13
V	बातमीलेखनाचे स्वरूप आणि बातमीदाराचे कार्य		13

Recommended Learning Resources

Print Resources	1. चरित्र आणि आत्मचरित्र - सदा कऱ्हाडे, लोकवाङ्मय गृह, मुंबई 2. मराठी वाङ्मयाचा अभिनव इतिहास - ग. ना. जोगळेकर, स्नेहवर्धन प्रकाशन, पुणे 3. चरित्र - आत्मचरित्र - अ. म. जोशी, स्नेहवर्धन प्रकाशन, पुणे 4. प्रदक्षिणा, खंड पहिला आणि दुसरा - कॉन्टिनेंटल प्रकाशन, पुणे 5. उपयोजित भाषाविज्ञान आणि प्रसारमाध्यमे - डॉ. प्रकाश कुंभार, अक्षरदालन, कोल्हापूर 6. पत्रकारिता मार्गदर्शन - एस. के. कुलकर्णी, पुणे विद्यार्थी गृह प्रकाशन, पुणे 7. उपयोजित मराठी - डॉ. संजय लांडगे, दिलीपराज प्रकाशन, पुणे
Digital Resources	**http://vishwakosh.marathi.gov.in** **http://marathivishwakosh.org** **http://marathi.pratilipi.com** **http//:mr.vikaspedia.in** **http://www.maayboli.com** **http://esahity.com** **www.bbc.com**

Syllabus of B.B.A./B.C.A./B.S.W Etc.
Ability Enhancement Compulsory Course (AECC)

***Title of the Subject/ Discipline :* MARATHI**				
Year	1	**Course Code : AECC-1, L-2 : MARATHI (BBA,BCA,BSW etc.)**	Credits	3
Sem.	I	**Course Title : Discipline : वाङ्मयप्रकार : कथा + पत्रकारिता (Wangmayaprakar : Katha + Patrakarita)** **Text- *'गावाकडच्या गोष्टी'* -**व्यंकटेश माडगूळकर**,** उत्कर्ष प्रकाशन, पुणे *(निवडक कथा - बोजा, सोन्याची माडी, करणी, मारुतराया, कालागत, भुताचा पदर, विलायती कोंबडी, बेत, वहाणा, फक्कड गोष्टी)*	Total Hours	64

Formative Assessment Marks : 40	Summative Assessment Marks : 60	Duration of ESA: 4 Hrs.

Learning Outcomes	1. Introducing to the seminal practitioners of Marathi literature and laying the foundation for contextualising specific texts against definite literary backdrops 2. To analysing the art of story-telling and the various structural elements of a short story 3. To understand the basics of short story as a literary form & nationalism 4. To acquire writing skills for Newspaper & media 5. To understand the importance of advertisement writing skills and marketing system in society.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	मराठी कथा आणि व्यंकटेश माडगूळकर	1.Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual mode 5.PPT Presentation 6.Class Seminar 7.Topic Discussion 8.Visit to Print Media & Publicity Centre	12
II	*'गावाकडच्या गोष्टी'* मधील व्यक्तिरेखा		13
III	*'गावाकडच्या गोष्टी'* ची वाङ्मयीन वैशिष्ट्ये		13
IV	मराठी भाषा आणि पत्रकारिता		13
V	जाहिरात लेखनकला आणि विपणन		13

Recommended Learning Resources	
Print Resources	1. मराठीतील कथारूपे - रा. ग. जाधव, स्नेहवर्धन प्रकाशन, पुणे 2. मराठी कथा : मूल्य आणि ऱ्हास -जी के. ऐनापुरे, ललित प्रकाशन , मुंबई 3. मराठी कथा : परंपरा आणि नवता - अशोक बेंडखळे, राजा प्रकाशन, मुंबई 4. मराठी भाषिक कौशल्ये विकास - संपा. पृथ्वीराज तौर, अथर्व प्रकाशन, धुळे 5. व्यावहारिक मराठी - ल. रा. नासिराबादकर, फडके प्रकाशन, कोल्हापूर
Digital Resources	**http://vishwakosh.marathi.gov.in** **http://marathivishwakosh.org** **http://marathi.pratilipi.com** **http//:mr.vikaspedia.in** **http://www.maayboli.com** **http://esahity.com** **www.bbc.com**

Title of the Subject/ Discipline : MARATHI				
Year	1	**Course Code : AECC-2, L-2 : MARATHI (BBA,BCA,BSW etc.)**	Credits	3
Sem.	II	**Course Title : Discipline : वाङ्मयप्रकार : आत्मचरित्र + व्यावहारिक मराठी** **(Wangmayaprakar : Atmacharitra + Vyavaharik Marathi)** **Text- प्रकाशवाटा' - *प्रकाश आमटे*,** मनोविकास प्रकाशन, पुणे	Total Hours	64

Formative Assessment Marks : 40	Summative Assessment Marks : 60	Duration of ESA: 4 Hrs.

Learning Outcomes	1. To generate interest in modern Marathi literature 2. To understand the basics of autobiography as a literary form 3. Learn about the process of writing, brainstorm- ideas, write draft, revise, edit and share work 4. Be able to write effectively and with details about their personal history growth. 5. To understand the life struggle, nation building, research and work for humanity etc. from the autobiography. 6. To understand the importance of advertisement writing skills and marketing system in society.

Unit No.	Course Content/ अभ्यासघटक	Suggested Pedagogy अध्यापनशास्त्र	Hours U/P/L
I	मराठी आत्मचरित्र : स्वरूप आणि वाटचाल	1.Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual mode 5.PPT Presentation 6.Class Seminar 7.Topic Discussion 8.Visit to Media centers	12
II	*'प्रकाशवाटा'* मधील जीवनानुभवाचे स्वरूप		13
III	*'प्रकाशवाटा'* ची वाङ्मयीन वैशिष्ट्ये		13
IV	प्रसारमाध्यमांसाठी लेखनकौशल्य		13
V	जाहिरात मसुदालेखन आणि विपणन धोरण		13

Recommended Learning Resources

Print Resources	1. चरित्र - आत्मचरित्र - अ. म. जोशी, स्नेहवर्धन प्रकाशन, पुणे 2. अविस्मरणीय चरित्रे- आत्मचरित्रे - नारायण भोसले, अथर्व पब्लिकेशन, जळगाव 3. चरित्र आणि आत्मचरित्र - सदा कऱ्हाडे, लोकवाङ्मय गृह, मुंबई 4. व्यावहारिक मराठी - डॉ. लीला गोविलकर/ जयश्री पाटणकर, स्नेहवर्धन प्रकाशन, पुणे 5. व्यावहारिक मराठी - ल. रा. नसिराबादकर, फडके प्रकाशन, कोल्हापूर
Digital Resources	**http://vishwakosh.marathi.gov.in** **http://marathivishwakosh.org** **http://marathi.pratilipi.com** **http//:mr.vikaspedia.in** **http://www.maayboli.com** **http://esahity.com**

Model Program Structure for Under Graduate (UG) Program

MARATHI (AECC)

B. Com.: Ability Enhancement Compulsory Course (AECC)

Semester	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I & II)	Assignment	Seminar/Activity/ Presentation Etc.
I	वाङ्मयप्रकार : कथा + जाहिरात मसुदा लेखन Wangmay Prakar : Katha+ Jahirat Masuda Lekhan	3	04	10+15+15 +20	20	10	10
II	वाङ्मयप्रकार : चरित्र / आत्मचरित्र + पत्रकारिता Wangmay Prakar : Biography /Autobiography + Patrakarita	3	04	10+15+15 +20	20	10	10
III	वाङ्मयप्रकार : काव्य + मराठी भाषा आणि प्रसारमाध्यमे Wangmay Prakar : Kavya + Marathi Bhasha ani Prasarmadhyame	3	04	10+15+15 +20	20	10	10
IV	वाङ्मयप्रकार : नाटक + अभिनय कौशल्ये Wangmay Prakar : Natak + Abhinay Kaushalye	3	04	10+15+15 +20	20	10	10
		2	03	60+40=100			

B. Sc.: Ability Enhancement Compulsory Course (AECC)

Sem.	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I & II)	Assignment	Seminar/Activity/ Presentation Etc.
I	वाङ्मयप्रकार : विज्ञान कथा + व्यावहारिक मराठी **Wangmay Prakar : Vidnyan Katha+ Vyavaharik Marathi**	3	04	10+15+15+ 20	20	10	10
II	वाङ्मयप्रकार : चरित्र / आत्मचरित्र + पत्रकारिता **Wangmay Prakar : Charitra / Atmacharitra + Patrakarita**	3	04	10+15+15+ 20	20	10	10
III	वाङ्मयप्रकार : काव्य + जाहिरात आणि व्यवस्थापन **Wangmay Prakar : Kavya + Jahirat ani Vyavasthapan**	3	04	10+15+15+ 20	20	10	10
IV	वाङ्मयप्रकार : नाटक + अभिनय कौशल्ये **Wangmay Prakar : Natak + Abhinay Kaushalye**	3	04	10+15+15+ 20	20	10	10
				60+40=100			

B.A. : Ability Enhancement Compulsory Course (AECC)

Sem.	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I & II)	Assignment	Seminar/Activity/ Presentation Etc.
I	वाङ्मयप्रकार : कथा + व्यावहारिक मराठी Wangmay Prakar : Katha+ Vyavaharik Marathi	3	04	10+15+15+ 20	20	10	10
II	वाङ्मयप्रकार : चरित्र / आत्मचरित्र + पत्रकारिता Wangmay Prakar : Charitra / Atmacharitra + Patrakarita	3	04	10+15+15+ 20	20	10	10
III	वाङ्मयप्रकार : काव्य / कादंबरी + संवाद कौशल्ये Wangmay Prakar : Kavya / Kadambari + Sanvad Kaushalye	3	04	10+15+15+ 20	20	10	10
IV	वाङ्मयप्रकार : नाटक + अभिनय कौशल्ये Wangmay Prakar : Natak + Abhinay Kaushalye	3	04	10+15+15+ 20	20	10	10
				60+40=100			

BBA/BCA/BSW/CCJ Etc.:

Ability Enhancement Compulsory Course (AECC)

Sem.	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I & II)	Assignment	Seminar/Activity/ Presentation Etc.
I	वाङ्मयप्रकार : कथा + पत्रकारिता **Wangmay Prakar : Katha+ Patrakarita**	3	04	10+15+15+ 20	20	10	10
II	वाङ्मयप्रकार : चरित्र / आत्मचरित्र + व्यावहारिक मराठी **Wangmay Prakar : Charitra / Atmacharitra + Vyavaharik Marathi**	3	04	10+15+15+ 20	20	10	10
III	वाङ्मयप्रकार : काव्य + प्रसारमाध्यमे **Wangmay Prakar : Kavya + Prasarmadhyame**	3	04	10+15+15+ 20	20	10	10
IV	वाङ्मयप्रकार : नाटक + अभिनय कौशल्ये **Wangmay Prakar : Natak + Abhinay Kaushalye**	3	04	10+15+15+ 20	20	10	10
				60+40=100			

Model Program Structure for UG Program

B.A. with One Major and One Minor / Without Practical

Discipline Specific Core / Discipline Elective / Open Elective

MARATHI (DSC /DSE /OE)

Sem,	Discipline Core (DSC)	Credit	Hours	Discipline Elective (DSE) / Open Elective (OE)	Credit	Hours	Marks 100	
							Theory	IA
I	**Discipline: A-1** **वाङ्मयप्रकार :** कथा / कादंबरी **Literary Form : Short Story / Novel**	3	4	**OE-1** **मराठी साहित्य आणि कथा / कादंबरी / नाटक / चरित्र/ आत्मचरित्र Marathi Literature and Short Stories /Novels / Drama / Biography / Autobiography**	3	04	60	40
	Discipline: A-2 **वाङ्मयप्रकार :** काव्य + मुद्रितशोधन **Literary Form : Kavya**	3	4					
II	**Discipline: A-3** **मराठी** ललित गद्य **Marathi Fine Prose**	3	4	**OE-2** **मराठी साहित्य आणि कथा / कादंबरी / नाटक / चरित्र/ आत्मचरित्र** **Marathi Literature and Short Stories /Novels / Drama / Biography / Autobiography**	3	04	60	40
	Discipline: A-4 **उपयोजित** मराठी / पत्रकारिता **Upayojit Marathi / Patrakarita**	3	4					
Exit Option with Certificate Course (50 credits)								

Sem.	Discipline Core (DSC)	Credit	Hours	Discipline Elective (DSE) / Open Elective (OE)	Credit	Hours	Marks 100	
							Theory	IA
III	**Discipline: A-5** **वाङ्मयप्रकार : चरित्र / आत्मचरित्र** **Literary Form : Biography / Autobiography**	3	4	**OE-3** **मराठी साहित्य आणि कथा / कादंबरी / नाटक / चरित्र/ आत्मचरित्र** **Marathi Language Literature and Short Stories /Novels / Drama / Biography / Autobiography**	3	04	60	40
	Discipline: A-6 **मध्यकालीन मराठी** वाङ्मयाचा इतिहास **(निवडक) Medival History of Marathi Literature (Selected)**	3	4					
IV	**Discipline: A-7** वाङ्मयीन प्रवाहांचा अभ्यास **Study of Literary Trends in Marathi**	3	4	**OE-4** **मराठी साहित्य आणि कथा / कादंबरी / नाटक / चरित्र/ आत्मचरित्र** **Marathi Language Literature and Short Stories /Novels / Drama / Biography / Autobiography**	3	04	60	40
	Discipline: A-8 **आधुनिक मराठी वाङ्मयाचा इतिहास (निवडक)** **History of Modern Marathi Literature(Selected)**	3	4					
Exit Option with Diploma Course (100 credits) Choose any one Discipline as Major, the other as the Minor								

Sem.	Discipline Core (DSC)	Credit	Hours	Discipline Elective (DSE) / Open Elective (OE)	Credit	Hours	Marks 100	
							Theory	IA
V	**Discipline: A-9** **मराठी** साहित्य आणि पर्यावरण विचार **Marathi Sahitya ani Paryavaran Vichar**	4	4	**DSE : A, E-1 (Vocational)** **मराठी भाषा आणि जाहिरात संहिता लेखन** **Marathi Language and Advertise writing** **OR** **मराठी भाषा आणि व्यक्तिमत्व विकास** **Marathi Language and Personality Development**	3	04	60	40
	Discipline: A-10 **मराठी** भाषा आणि **प्रकाशन** व्यवहार / संपादन **Marathi Language and Publication Business / Editing**	4	4					
VI	**Discipline: A-11** **मराठी साहित्य आणि** समीक्षा विचार **Marathi Sahitya ani Sameeksha Vichar**	4	4	**DSE : A, E-2 (Vocational)** **मराठी भाषा आणि संगणकीय क्षेत्र** **Marathi Language and Computer** **OR** **भाषांतरित साहित्य** **Translated Literature**	3	04	60	40
	Discipline: A-12 मुद्रित माध्यमांसाठी लेखन कौशल्ये **Mudrit Madhyamansathi Lekhan Kaushalye**	4	4					
				Internship	02	03		
Exit Option with Bachelor of Arts, B.A. Basic Degree (142credits)								

Sem.	Discipline Core (DSC)	Credit	Hours	Discipline Elective (DSE) / Open Elective (OE)	Credit	Hours	Marks 100	
							Theory	IA
VII	**Discipline: A-13** मराठी भाषा आणि भाषा विज्ञान / भाषाशास्त्र **Marathi Bhasha ani Bhasha Vidnyan / Bhasha Shastra**	4	4	**DSE : A, E-3** **भाषांतर विद्या / अनुवादित विद्या / मुद्रितशोधन Art of Translations / Mudritshodhan /** **OR** **मराठी** साहित्य आणि **संशोधन** पद्धती **Marathi Literature And Research Methodology**	3	04	60	40
	Discipline: A-14 **मराठी भाषा आणि पत्रकारिता** **Marathi Language and Journalism**	4	4					
	Discipline: A-15 **दृक** - श्राव्य माध्यमांसाठी लेखन कौशल्ये **Druk - Shravya Madhyamansathi Lekhan Kaushalye**	4	4					
VIII	**Discipline: A-16** **तौलनिक** साहित्य **Comparative Literature**	3	4	**DSE : A, E-4** साहित्य आणि इतर ललित कला **Literature and Other Fine Arts**	3	04	60	40
	Discipline: A-17 **वाङ्मयीन** संप्रदाय **Wangmayin Sampraday**	3	4	**संशोधन** प्रकल्प **Research Project** *	6	08	60	40
	Discipline: A-18 **विशिष्ट** लेखकाचा अभ्यास **Study of Special Author**	3	4	**OR** **Additional Elective Paper :** **1.** मराठी साहित्य संशोधन **Marathi Literature and Research**	3	04	60	40
				2. विद्यापीठीय पातळीवरील संशोधन **University Level Research**	3	04	60	40
Award of Bachelor of Arts Honours, BA (Hon's) Degree in a discipline etc. (184 credits)								
***In lieu of the research project. Two additional elective papers / internship may be offered**								

Board of Studies in Marathi (U.G.)

1. **Prof. C.N. Waghamare (9480539762)** - **Chairman, B.O.S. (U.G./P.G.)**
   Professor, Dept. of Marathi, R.C.U, Belagavi
2. **Dr. D.T. Patil (9448863953)** - **Member**
   Dept. of Marathi, B.K.College, Belagavi
3. **Smt. Varsha Kulkarni (7019224745)** -**Member**
   Dept. of Marathi, Gogte College, Belagavi
4. **Dr. S.M. Rayamane (9449513471)** -**Member (Co-opt)**
   Dept. of Marathi, G.I.Bagewadi College, Nipani
5. **Shri Ashok Algondi (9035385923)** -**Member (Co-opt)**
   Dept. of Marathi, Shivanand College, Kagawad

* * * * *

RANI CHANNAMMA UNIVERSITY,

BELAGAVI-591156, Karnataka-India

Dept. of Marathi

A

DRAFT

OF

COURSE STRUCTURE AND SYLLABUS

as per the Choice Based Credit System (CBCS) designed in accordance with Learning Outcomes-Based Curriculum Framework (LOCF) For

UNDERGRADUATE DEGREE

Subject: Marathi

III & IV Semester

B.A., B. Com., B. Sc., BBA/BCA/BSW/CCJ

w.e.f.

Academic Year 2022-23 and onwards

BACHELOR'S IN MARATHI (B.A.)

Nature and Extent of the Bachelor's in Marathi (B.A.) Program

Introduction

Study of Marathi language and literature as a subject is committed to strengthening it's commitment to student's success and broadening the dimension of thought process of the students. That Under Graduation course of Marathi is designed to enable the students to…. Demonstrate an ability to think independently about a problem related to society and self, and clearly articulate and support their own views. Students completing B.A. in Marathi will be able to practice thinking and reading skills, so that they can devise original ideas, rather than simply echo the ideas of others. Students will learn to evaluate the credibility of sources, use academic/scholarly resources and incorporate sources effectively and ethically.

CHARACTERISTICS OF LANGUAGE

a. Language is not a born activity as crying and walking. It is not an automatic process. It has to be learnt. Any learner learns the language by imitation and practice.

b. If a baby or man is shifted to another community or cultural group, he will acquire the language spoken by that cultural community. For example; if an Maharashtrian family is settled in Karnataka, the children of the family will acquire the Kannada language with an Karnataka accent.

c. Language is a system like a human body, just as body functions through different organs such as brain, heart, lungs. In the same way, language functions through sounds, words and structures.

d. The language is primarily observed speech. Speech is a fundamental thing is language learning, reading and writing are secondary. Through speech and modulation of speech, we get a clear picture of Marathi inflexion.

e. No language on earth is static. Every language is undergoing changes in its grammar, vocabulary, structure and phonology with the course of time.

f. The main purpose of language is communication. Since it is so, a person's speech must be intelligible to others. For this, he must acquire the right pronunciation and intonation.

g. Language is arbitrary. There is no relationship between the words of a language and its meaning. The relationship between word and meaning is arbitrary.

h. Each language is unique. No two languages are alike. They cannot have the same set of patterns of structures, sounds, grammatical rules or words. The sounds, structures, vocabularies of every language have their own specialty.

PRINCIPLES OF SITUATIONAL APPROACH

1. Language learning is habit-formation.
2. Mistakes should be avoided.
3. Language skills are presented orally first, then in written form to improve the effectiveness of learning.

4. Examples are better than analysis for language learning.
5. Meanings of the words are presented in linguistic and cultural context.
6. Opportunities are created for learners to associate the meaning of new words with parallel situations.
7. New words are introduced as and when it comes in the class.
8. Language materials are used to create appropriate situation.
9. Continuous repetition of language items.
10. The teacher raises questions related to created situation and s/he answers them.
11. Revision is important.

STATUS OF MARATHI

In the Global and Indian Context - Scope of Marathi

Language Marathi is an important Indian language. Marathi has been playing an important role in our educational system as well as in our national life. Marathi is occupies an important place and position in media, courts, trade, commerce, industry, educational system and national life of Maharashtra and as well as India.

THE LEANING OUTCOMES

Based Curriculum Framework (LOCF) presented here visualizes that graduate training needs to attend to the following considerations:

1. Acquisition of graduate attributes and descriptors with demonstrated abilities through Marathi literature
2. Knowledge of Media and Information Literacy in the context of Marathi practice;
3. Application of Programme Media in Marathi practice;
4. Skill development and entrepreneurship abilities to be taught at undergraduate levels;
5. Learning by doing through concurrent and block Literature which provides an opportunity to the students for practice in diverse settings;
6. Selection of courses of their choice from a range of electives which allows in-built flexibility for students to learn they are truly interested in and avoid that which they may not be much inclined to learn; and
7. Development of research and analytical abilities through dissertation as a separate paper at the honours or research degree level in the fourth year of the undergraduate degree.

MAINTAINING LANGUAGE SKILLS AND CULTURAL CONNECTIONS

For those students who already have some knowledge of the MARATHI language or a family connection to the culture, the study of MARATHI offers the opportunity to learn and enhance their language and cultural heritage.

PERSONAL AND COGNITIVE BENEFITS

There is significant evidence to suggest that learning another language contributes to the development of first language skills and enhances cognitive functioning. Learning an additional language increases the ability to conceptualize, to think abstractly, and fosters more cognitive flexibility, greater divergent thinking and metalinguistic competence.

ECONOMIC BENEFITS

In today's world, the knowledge of an additional language and culture in general, and MARATHI in particular, provides individuals with an economic advantage. Learning another language enables them to communicate and interact effectively in the global community and marketplace.

GLOBAL CITIZENSHIP

Preparing students to meet the challenges in a world that is increasingly interdependent is one of the more important objectives of language education. Globalization and our multicultural society have increased the need for knowledge of other languages and cultures for effective communication. Through the study of languages, students learn to recognize, respect and appreciate the cultural diversity of Canadian society and contribute to our global community.

Learning MARATHI, just as learning any other language, develops thinking skills and learning strategies that are transferable to other learning situations. The study of MARATHI also develops awareness of, and sensitivity to, the cultural and linguistic diversity of our communities.

ASSUMPTIONS

The following statements are assumptions that have guided the development of this program.

- Language is communication.
- All students can be successful learners of language and culture, although they will learn in a variety of ways and acquire proficiency at varied rates.
- All languages can be taught and learned.
- Learning MARATHI as an additional language leads to enhanced learning in both the student's primary language and in related areas of cognitive development and knowledge acquisition. This is true for students who come to the class with some background knowledge of MARATHI and further develop skills in their language.

THE CONCEPTUAL MODEL

The aim of this program is the development of communicative competence in MARATHI.

Four Components

For the purposes of this program, communicative competence is represented by four interrelated and interdependent components.

- **Applications** deal with what the students will be able to do with the language, the functions they will be able to perform and the contexts in which they will be able to operate.
- **Language Competence** addresses the students' knowledge of the language and their ability to use that knowledge to interpret and produce meaningful texts appropriate to the situation in which they are used.

•**Global Citizenship aims** to develop intercultural competence with a particular focus on cultures associated with the Arabic language.

•**Strategies help** students learn and communicate more effectively and more efficiently. Each of these components is described more fully at the beginning of the corresponding section of this course series.

MODES OF COMMUNICATION

Because of the focus on using language to communicate in specific contexts, with a particular purpose or task in mind, three modes of communication are used to organize some of the specific outcomes.

- **Interaction** is most often direct, face-to-face oral communication, but it can take the form of written communication between individuals, using such a medium as e-mail where the exchange of information is fairly immediate. It is characterized principally by the opportunity to negotiate meaning actively; that is, helping others understand and working to understand others. Interactive communication generally requires quicker processing but less accuracy than the other two modes.
- **Interpretation** is receptive communication of oral and written messages in contexts where the listener or reader is not in direct contact with the creator of the message. While there is no opportunity to ask for clarification, there is sometimes the possibility of rereading or listening again, consulting references, or making the meaning clearer in other ways.
- **Reading and listening** will sometimes involve viewing and interpreting visual elements, such as illustrations in books or moving images in television and film. Interpretation goes beyond a literal comprehension to include an understanding of some of the unspoken or unwritten meaning intended by the speaker or author.
- **Production** is communication of oral and written messages in contexts where the audience is not in personal contact with the speaker or writer or in situations of one-to-many communication; e.g., a lecture or a performance where there is no opportunity for the listener to interact with the speaker.
- **Oral and written** presentations will sometimes be enhanced by representing the meaning visually, using pictures, diagrams, models, drama techniques or other nonverbal forms of communication.
- **Greater knowledge** of the language and culture is required to ensure that communication is successful, since the participants cannot directly negotiate meaning.

OBJECTIVES

Students should be able to identify, analyze, interpret and describe the critical ideas , values and themes, that appear in literary and cultural texts and understand the way these ideas – values. Further able to :

- To understand meaning, characteristics and functions of language
- To know principles of language learning ;
- To realize nature and scope of Marathi language in India and global level;

- To get some insight into different types of aims and objectives of Teaching Marathi;
- To realize the objectives of teaching different skills of Marathi;
- To recognize objectives of teaching prose and poetry; and
- To understand objectives of teaching Marathi at different levels of education.

OBJECTIVES OF TEACHING MARATHI

a. Understand Marathi when spoken;

b. Speak Marathi correctly and fluently;

c. Read Marathi with comprehension at a reasonable speed for gathering information and enjoy reading;

d. Write Marathi neatly and correctly with proper speed and legibility;

e. Acquire knowledge of the elements of Marathi for achieving a practical command of the language; and

f. Translate Marathi into their mother tongue and vice-versa

AIMS OF U.G. MARATHI PROGRAM / COURSE

The central aim of the U.G. Marathi program is to inculcate among the students the values, knowledge, skills, and techniques necessary for working with individuals, groups, communities and for collective action to bring about positive social change. In order to fulfil this, U.G. Marathi program comprises a wide range of courses including the core, supportive and inter-disciplinary domains of literary field. The programme is strongly committed to a diverse learning environment, in which respect for dignity and worth of all human beings and understanding of diverse conditions would be practiced. It respects individual uniqueness and offers a professional programme to build a foundation for practice with population groups, keeping the larger goal in mind.

- Create and cultivate taste in Marathi literature.
- Understand to analyze, evaluate and appreciate literary texts.
- Develop ability for in-depth study of literature.
- Understand the history of Marathi literature.
- Get the concept of literary history Clarified.
- Get acquainted to various movements in Modern Marathi literature.
- Generate interest in modern Marathi literature
- Get introduced to media.
- Develop skill in preparing materials for media including Newspaper, Radio and TV.
- Understand the nature and function of literature.
- Understand the nature of the process of literary creation and the concept of literary genus.
- Acquire ability to analyze the process of literary appreciation.
- Get acknowledged to some fundamental concepts in literary appreciation.

- Understand the original development of Marathi language in the light of linguistic theories.
- Understand the evolution of Marathi language.
- Get acquainted to the basic features of Marathi language.
- Get introduced to historical and descriptive linguistics.
- Acquire writing skills for newspaper and media
- Master the skills of Marathi language
- Understand the importance of media in society
- Increase understanding of literature and critical theories
- Comprehend the concepts in criticism
- Become familiar with value added concepts in criticism
- Understand the tradition of critics and criticism in Marathi Literature 8. Enrich critical aptitude
- Awared about nature and scope of interdisciplinary research
- Understand the tradition of researchers in Marathi literature
- Comprehend the relation between the creative writer and his age
- Understand the contribution of various creative artists
- Comprehend the nature of folk literature and its types
- Acquire in-depth knowledge of contemporary issues in media and communication.
- Make use of recent developments and current debates in media and communication through the range of modules.
- Explain various specialist sub disciplines, including big data, digital cultures , mobile media, news and information.
- Explain the methods of production and technological practices and relevant social issues.
- Demonstrate proficiency in writing in one or more professional media writing applications

IDENTIFY OWN STRENGTHS AND DEVELOP AREAS FOR GROWTH

- is aware of own strengths and weaknesses
- is open to improvement and growth opportunities
- is able to propose activities according to own interests and talents
- is willing to participate in different activities
- is able to undertake a thoughtful self-evaluation
- is able to see themselves as individuals with various abilities and skills, some more developed than others.

DEMONSTRATE THAT CHALLENGES HAVE BEEN UNDERTAKEN, DEVELOPING NEW SKILLS IN THE PROCESS

- participates in an experience that demands an appropriate personal challenge; this could be with new or familiar experiences
- is willing to become involved in unfamiliar environments and situations

• acquires new skills and abilities

• increases expertise in an established area

• shows newly acquired or developed skills or increased expertise in an established area.

Demonstrate the skills and recognize the benefits of working collaboratively

• shares skills and knowledge

• listens respectfully to proposals from peers

• is willing to take on different roles within a team

• shows respect for different points of view and ideas makes valuable contributions

• is responsible for participating in the group

• readily assists others

•is able to identify, demonstrate and discuss critically the benefits and challenges of collaboration gained through experiences.

Demonstrate engagement with issues of global significance

• recognizes the global implications of local issues

• is able to identify global issues in the local or national community

• shows awareness of issues of global importance and takes concrete and appropriate actions in response to them either locally, nationally or internationally

• develops awareness and responsibility towards a shared humanity.

Recognize and consider the ethics of choices and actions

• recognizes ethical issues

• is able to explain the social influences on one's ethical identity

• takes into account cultural context when making a plan or ethical decision

• identifies what is needed to know in order to make an ethical decision

• articulates ethical principles and approaches to ethical decisions

• shows accountability for choices and actions

• is aware of the consequences of choices and actions regarding self, others involved and the community

• integrates the process of reflection when facing an ethical decision

TOTAL COURSE OUTCOMES (STUDENTS WILL BE ABLE TO)

• Develop Marathi reading & linguistic comprehension of students

• Understand the basic forms of fiction and Poetry.

• Develop interest in literature fiction and story.

• Inculcate moral and human values within themselves

• Understand the types of Marathi Short Story Writing.

- Develop Reading, Writing & Communication skills of students
- Develop attitude of literary forms Marathi Poetry.
- Students learn Values through literary works.
- The students are able to make accurate use of Marathi language in their respective fields.
- The students could communicate effectively in their various business situations.
- The verbal and non-verbal skills of communication are developed.
- Develop attitude of literary forms in Marathi novel and literary form
- Information about the history of modern Marathi Literature.
- Develop the Novel reading skills.
- Get information well known writer in Marathi.
- Get information about the biography and autobiography.
- Know the concept of old Gadya Wangamaya.
- Know the concept Padya Wangamaya.
- Get information about Sant Poet & their literature.
- Get information about Sant literature forms.
- Get information well Known Poet Sant Dnyaneshwar, Sant Namadev, Sant Tukaram, Sant Sant Ekanath, Chokhamela, Sant Janabai, Sant Narhari Sonar etc.
- The students develop interest in the old Marathi literature
- Information about the ancient Marathi Literature.
- Know the concept and process of Literature.
- Information about the history of Marathi Literature.
- Know the concept & process Literature.
- Increase vision regarding literary value.
- Develop literary tendencies.
- Understand the types of Marathi Short Story Writing skills,
- Know the concept and process of literature.
- Know the concept of Drama.
- The students learn the origin of drama as dramatics art and is skills.
- Students are acquainted with the language, style, dialogue structure of the age to which it belongs.
- Students learn value through literary works.
- Introduce to the Minor genres such as one act play.
- Use literature to develop their social and moral sense in life.
- Develop attitude of literary forms.

- Know the Types of Marathi Wagamaya.
- Know the importance of language in human life.
- Know the various methods to the study of language.
- Understand the communication process and method.
- Know the concept of Linguistics.
- Know the importance of language in human life.
- Know the various methods to the study of language.
- Understand the communication process and method.
- Connect literature to real life experience.
- Understand various branches and movements of Marathi literature.
- Develop linguistic skills to meet the requirements in the age of globalization.
- Develop the skill of translation etc.

SOME OF THE CHARACTERISTIC ATTRIBUTES THAT A MARATHI GRADUATE SHOULD DEMONSTRATE AT THE END OF THE PROGRAM ARE AS FOLLOWS:

Identify own strengths and develop areas for growth :

- Is aware of own strengths and weaknesses
- Is open to improvement and growth opportunities
- Is able to propose activities according to own interests and talents
- Is willing to participate in different activities
- Is able to undertake a thoughtful self-evaluation
- Is able to see themselves as individuals with various abilities and skills, some more developed than others.

Demonstrate that challenges have been undertaken, developing new skills in the process

- Participates in an experience that demands an appropriate personal challenge; this could be with new or familiar experiences
- Is willing to become involved in unfamiliar environments and situations
- Acquires new skills and abilities
- Increases expertise in an established area
- Shows newly acquired or developed skills or increased expertise in an established area.

Demonstrate how to initiate experience

- Shows initiative by launching a new idea or process
- Suggests creative ideas, proposals or solutions
- Integrates reflective thoughts in planning or taking initiative
- Is aware of roles and responsibilities when designing an individual experience

• Shows responsible attitude to project planning

Show commitment to and perseverance in experiences

• Demonstrates regular involvement and active engagement

• Is able to foresee potential challenges to the initial plan and consider valid alternatives and contingencie

• Demonstrates adaptability to uncertainties and changes

• Gets involved in long-term experiences.

Demonstrate the skills and recognize the benefits of working collaboratively :

• Shares skills and knowledge

• Listens respectfully to proposals from peers

• Is willing to take on different roles within a team

• Shows respect for different points of view and ideas makes valuable contributions

• Is responsible for participating in the group

• Readily assists others

Demonstrate engagement with issues of global significance

• Recognizes the global implications of local issues

• Is able to identify global issues in the local or national community

• Shows awareness of issues of global importance and takes concrete and appropriate actions in response to them either locally, nationally or internationally

• Gets involved in addressing global issues in a local, national or international context

• Develops awareness and responsibility towards a shared humanity.

Recognize and consider the ethics of choices and actions

• Recognizes ethical issues

• Is able to explain the social influences on one's ethical identity

• Takes into account cultural context when making a plan or ethical decision

• Identifies what is needed to know in order to make an ethical decision

• Articulates ethical principles and approaches to ethical decisions

• Shows accountability for choices and actions

• Is aware of the consequences of choices and actions regarding self, others involved and the community

• Integrates the process of reflection when facing an ethical decision

• Shows awareness of the potential and varied consequences of choices

GENERAL OUTCOMES

General outcomes are broad statements identifying the knowledge, skills and attitudes that students are expected to achieve in the course of their language learning experience. The four general outcomes serve as the foundation for this Marathi program and are based on the conceptual model outlined on the preceding pages.

APPLICATIONS

- Students will use Marathi in a variety of situations and for a variety of purposes.

LANGUAGE COMPETENCE

- Students will use Marathi effectively and competently.

GLOBAL CITIZENSHIP

- Students will acquire the knowledge, skills and attitudes to be effective global citizens. Strategies
- Students will know and use various strategies to maximize the effectiveness of learning and communication.

The order in which the general outcomes are presented in the program does not represent a sequential order, nor does it indicate the relative importance of each component. The general outcomes are to be implemented in an integrated manner.

SPECIFIC OUTCOMES

Each general outcome is further broken down into specific outcomes that students are to achieve by the end of each course. The specific outcomes are interrelated and interdependent. In most classroom activities, a number of learning outcomes will be dealt with in an integrated manner. The specific outcomes are categorized under cluster headings, which show the scope of each of the four general outcomes.

These headings are shown in the table on the following page.

- The specific outcomes are further categorized by strands, which show the developmental flow of learning from the beginning to the end of the program. However, an outcome for a particular course will not be dealt with only in that particular year of the program.
- The spiral progression that is part of the conceptual model means that activities in the years preceding will prepare the ground for acquisition and in the years following will broaden applications.

THE SALIENT FEATURES OF THE CREDIT BASED SEMESTER SCHEME

Each course shall carry certain number of credits. Credits normally represent the weightage of a course and are a function of teaching, learning and evaluation strategies such as the number of contact hours, the course content, teaching methodology, learning expectations, maximum marks etc. In the proposed programs, generally one hour of instructions per week in a semester is assigned one credit. In terms of evaluation, one credit is generally equivalent to 25 marks in a semester. Thus a 3 or 4 credits course will be assessed for 100 marks, 2 credits courses are assessed for 50 marks and one credit course will be assessed for 25 marks. What matters for the calculation of Semester Grade Point Average (SGPA) or the Cumulative Grade Point Average (CGPA) is the percentage of marks secured in a course and the credits assigned to that course. On this basis, generally, a three-year six-semester

undergraduate program will have around 142 credits, and a four-year eight-semester honors degree program will have around 184 credits and a five-year ten-semester master's degree programme will have 228 credits.

The general features of the Credit Based Semester Scheme are

a) The relative importance of subjects of study are quantified in terms of credits.

b) The subjects of study include core, elective, ability/skill enhancement courses

c) The programme permits horizontal mobility in course selections.

d) The students shall take part in co-curricular and extension activities.

e) The declaration of result is based on Semester Grade Point Average (SGPA) or Cumulative Grade Point Average (CGPA) earned

CREDIT REQUIREMENTS:

The candidates shall complete courses equivalent to a minimum of 142 credits to become eligible for the Regular Bachelor Degree, 184 credits to become eligible for the Bachelor Degree with Honours 228 credits to become eligible for the Integrated Master's Degree.

COURSES DESCRIPTION:

1. Discipline Specific Course [DSC]: Are compulsory core courses of the program: Every semester consists of Core Course/s which is to be compulsorily studied by a student as a core requirement to complete the programme in MARATHI Language discipline.

2. Minor Discipline Course: Minor Discipline is a secondary specialization that one may choose to pursue in addition to a Major Discipline. They may be related areas of studies or two distinct areas of studies which are not interrelated at all.

3. Discipline Specific Elective [DSE)/Open Elective (OE)]: Offered under the main discipline/subject of study**:** An elective course focuses on those courses which add generic proficiency to the students. An elective may be 'Discipline Centric' or an 'Open Elective.' Discipline-centric elective courses are value-addition to the students of MARATHI in strengthening their knowledge and skills and in doing so help them to be able to follow their interest. Open elective courses may be chosen from an unrelated discipline so that they gain a multidisciplinary perspective and this also provides the much-required flexibility to the students to select any of the courses offered in the college/ University.

4. Ability Enhancement Compulsory Courses [AECC]: course based upon the content that leads to the knowledge of language history, significance of the language, as well as history of MARAHI Literature through learning the grammar and translation skills. In the CBCS scheme of this undergraduate programme, the students are mandatorily required to choose two subjects of their liking for additional knowledge and building their competencies outside their main subjects of study.

5. Skill Enhancement Courses [SEC]: These courses designed to provide value-based and/or skill based knowledge aimed at providing theory, lab/hands on training/fieldwork, competencies, skills etc

6. Project work/ Dissertation/ Internship/ Entrepreneurship Project work is a special course involving application of knowledge in solving / analyzing / exploring a real life situation / difficult problem/ data analysis. Project Work has the intention to provide research competencies at undergraduate level. It enables to acquire special/ advanced knowledge through support study/a project work. Candidates shall carry out project work on his/her own with an advisory support by a faculty member to produce a dissertation/ project report. Internship/ Entrepreneurship shall be an integral part of the Curriculum

STUDENTS WHO STUDY NEW LANGUAGES (OE) HE/SHE ENABLE TO

Better at making decisions

If you struggle to make decisions, learning another language might just be the solution to your problems! According to a new study, people who speak more than one language are better decision-makers, because they are less susceptible to conditioning and framing techniques. Simply put, they can stay level-headed when they're asked a question. This means that multilingual aren't as swayed by the language used in advertisements and political broadcasts, and they can make their decisions without being influenced by emotions.

Brain will change

When you study languages, the work you do could even change the structure of your brain! Researchers from Sweden studied two groups of scholars – one which studied languages, and another that didn't. By using MRI scans, it was found that the brains of the scholars who had studied languages were larger, while the brains of the other group were regular-sized. The growth was mostly based in the parts of the brain related to language skills

find studying easier

Learning a new language, or even being surrounded by lots of languages, can have a big impact on your studies. It's been found that babies brought up in multilingual environments develop stronger memories than ones brought up in single-language homes. Multiple language speakers have also been shown to be better at remembering lists or sequences. So if you learn a new language you're more likely to have a better memory, and you'll find studying easier because you'll spend less time relearning old notes!

Become more creative

Researchers have also found that you're likely to be a more creative person if you learn another language. It's common to forget certain words when you're swapping between languages, which forces you to choose others with the same meaning to fill the gap. It's thought that having to reach out for alternative words makes you more skilful at thinking outside of the box, and better at finding lots of solutions to the same problems. Score!

Brain will be healthier

If you learn another language, it's likely that your brain will stay healthier for longer So if you learn another language as an international student, your brain will age less quickly.

Become more focused

As a multilingual, you'll be better at controlling your attention and tuning out distractions – or so recent research suggests. A study by Northwestern University discovered that speaking more than one language was good for the brain, as it trains it to process information more efficiently.

Have better listening skills

When you're sitting in class, you'll automatically have an advantage over your peers if you can speak more than one language – you'll be better at listening! Recent studies have shown that bilinguals are better at distinguishing between different types of sounds in two or more languages, which will come in handy when your professors are debating in your next lecture.

Improve your native language

Weirdly enough, if you learn a second language, you'll also improve your native one. When you first learn to speak as a child, you typically pick up different words and expressions as you listen to people talking around you. But you may not fully appreciate the underlying structure of what you're saying.

Learning a new language will also help you make wiser financial decisions, as studies have shown that those who speak multiple languages are more self-aware spenders, viewing 'hypothetical' and 'real' money more similarly than people who speak just one. Researchers believed this was because the participants had less of an emotional reaction to things they heard in their second language, so they were less likely to act on impulse (and more likely to hold on to their cash!).

STUDENT LEARNING OUTCOMES FOR THE MARATHI MAJOR/MINOR (B.A.)

Marathi major/minor from all semester should be able to:

• Read a variety of texts critically and proficiently to demonstrate in writing or speech the comprehension, analysis, and interpretation of those texts;

• Write a literary or expository text using the conventions of standard Marathi as stylistically appropriate, while showing a nuanced use of language (producing such a text may include invention, workshopping, research, compiling bibliographies, drafting, peer responses, revising, and/or editing);

• Demonstrate knowledge and comprehension of major texts and traditions of language and literature written in Marathi as well as their social, cultural, theoretical, and historical contexts;

analyze and interpret texts written in Marathi, evaluating and assessing the results in written or oral arguments using appropriate support;

• Design and create texts for a variety of purposes and audiences, evaluating and assessing the effectiveness and meaning of such texts.

• Develop knowledge of vocabulary and grammar.

• Learn expression and translation.

• Learn to analyse interpret and write advertisement and report which also develops employable skills.

• Learn to write invitations of different forms .and also learn about journal front page and last page writing and News in newspaper, Television and Radio etc.

• Develop writing skills to write complains and group discussions

• Develop skills to write and read news at radio/ radio jockey & T.V. station.

• Develop creativity and leadership skills through essay writing thus learn to think quickly, write persuasively and present well connected ideas in a compact manner.

EMPLOYMENT AREAS FOR BACHELOR OF ARTS [B.A.] IN MARATHI

Several career opportunities are available for Marathi graduates in the field of teaching, translating or as a freelancer:

• Most of the educational institutions look for the experts in Marathi languages and literature in teaching field.

• Candidates have an option for taking private tuitions is also available.

• There are various types of jobs available as an interpreter, such as a consecutive interpreter, general interpreter and liaison interpreter.

• Graduate as a translator also works in fields such as scientific literacy, technical or business.

• Freelancers can join research firms, translation bureaus, publishing houses, media field i.e. print media, radio, television, blog writing, e-journalism, hotel industry, travel and tourism sector etc.

• And also in the field of Educational Institutes, Fire Department, Economic Development, Export Companies, Foreign Affairs, Field Research Firms, Marketing Research Firms, Municipal Planning,
Multinational Companies etc.

THE UG PROGRAMME IS STRUCTURED IN A SEMESTER MODE WITH MULTIPLE EXIT OPTIONS

- **I Year Certificate in B.A. (50 Credits).**
- **II Year Diploma in B.A. (100 Credits).**
- **III Year B.A. Degree (142 Credits).**
- **IV Year Bachelor of Marathi Degree (Honours / Research Degree) (184 Credits).**

QUALIFICATION DESCRIPTORS FOR B.A.(MARATHI) PROGRAM

A qualification descriptor indicates the generic outcomes and attributes expected for the award of a particular type of qualification. It also describes the academic standard for a specific qualification in terms of the levels of knowledge and understanding, skills and competencies and attitudes and values that the holders of the qualification are expected to attain and demonstrate. These descriptors also indicate the common academic standards for the qualification and help the degree-awarding bodies in designing, approving, assessing and reviewing academic programmes.

ELIGIBILITY

Criteria for admission of B.A. course as per notification of the University from time to time.

EVALUATION

SCHEME OF EXAMINATION AND EVALUATION

There shall be a University Examination at the end of each semester for theory examination. Duration of examination per theory paper of 60 marks shall be for Two hours. Each theory paper shall comprise of from all the 5 units of the syllabus. Each of these questions shall have an alternate /internal choice, either in the form of main question or short notes etc.

INTERNAL ASSESSMENT

Internal Assessment shall be for total 40 marks for Theory Test/Home Assignment/Seminars/ Class participation/Attendance etc. Results of the students shall be declared as per the University rules and regulations.

ATTENDANCE

A candidate shall be considered to have satisfied the requirement of attendance for a semester if he/she attends not less than 75% of the number of classes actually held up to the end of the semester in each of the subjects. There shall be no minimum attendance requirement for the Co-curricular and extension activities.

DRAFT CURRICULUM

Name of the Degree Program: Bachelor of Arts (Marathi)

Discipline Core: Marathi

Total Credits for the Program: 184 Credits for IV years programme

Starting year of Implementation: 2021-22

ASSESSMENT

Weightage for assessments (in percentage)

Assessment is an integral part of the teaching learning process. A multidisciplinary program requires a multidimensional assessment to measure the effectiveness of the diverse courses. The assessment process acts as an indicator to both faculty and students to improve continuously.

The following are the guidelines for effective assessment of the program:

a) Student assessment should be as comprehensive as possible and provide meaningful and constructive feedback to faculty and student about the teaching-learning process.

b) Assessment tasks need to evaluate the capacity to analyze and synthesize new information and concepts rather than simply recall information previously presented.

c) The process of assessment should be carried on in a manner that encourages better student participation and rigorous study.

d) Assessment should be a combination of continuous formative evaluation and an endpoint summative evaluation.

e) A range of tools and processes for assessment should be used (e.g. open book tests, portfolios, case study/assignments, seminars/presentations, field work, projects, dissertations, peer and self-assessment) in addition to the standard paper-pencil test. The teachers concerned shall conduct test / seminar / case study, etc. The students should be informed about the modalities well in advance. The evaluated courses / assignments shall be immediately provided to the students.

f) Paper-pencil tests should be designed rigorously using a range of tools and processes (e.g. constructed response, open ended items, multiple-choice with more than one correct answer). Faculty may provide options for a student to improve his / her performance in the continuous assessment mode.

g) Continuous/ Internal assessment marks shall be shown separately. A candidate who has failed or wants to improve the result, shall retain the IA marks, provides he/she fulfills the minimum requirements.

EVALUATION/ INTERNAL ASSESSMENT

Total marks for each course shall be based on continuous assessments and semester end examinations. As per the decision of the Karnataka State Higher Education Council, it is necessary to have uniform pattern of 40 : 60 for IA and Semester End examinations respectively, in all the Universities, their Affiliated and Autonomous Colleges.

Total Marks for each course = 100%

Continuous assessment (C1) = 20% marks

Continuous assessment (C2) = 20% marks

Semester End Examination (C3) = 60% marks.

Evaluation process of IA marks shall be as follows…

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course/s and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of remaining 50 percent of syllabus of the courses of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the University for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator / Principal. The Program Coordinator / Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be stamped by the concerned department using their department seal at the time of conducting tests / assignment / work etc.

f) The marks of the internal assessment shall be published on the notice board of the department / college for information of the students.

UNDER GRADUATE IN MARATHI

MARATHI (AECC)

B. Com.: Ability Enhancement Compulsory Course (AECC)

B.Sc.: Ability Enhancement Compulsory Course (AECC)

B.A: Ability Enhancement Compulsory Course (AECC)

BBA /BCA/BSW Etc. Courses: (AECC)

Model Program Structure for Under Graduate (UG) Program
MARATHI (AECC)
B. Com.: Ability Enhancement Compulsory Course (AECC)

Semester	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I & II)	Assignment	Seminar/Activity/ Presentation Etc.
I	वाङ्मयप्रकार : कथा + जाहिरात मसुदा लेखन Wangmay Prakar : Katha+ Jahirat Masuda Lekhan	3	04	10+15+15+20	20	10	10
II	वाङ्मयप्रकार : चरित्र / आत्मचरित्र + पत्रकारिता Wangmay Prakar : Biography /Autobiography + Patrakarita	3	04	10+15+15+20	20	10	10
III	वाङ्मयप्रकार : काव्य + मराठी भाषा आणि प्रसारमाध्यमे Wangmay Prakar : Kavya + Marathi Bhasha ani Prasarmadhyame	3	04	10+15+15+20	20	10	10
IV	वाङ्मयप्रकार : नाटक + अभिनय कौशल्ये Wangmay Prakar : Natak + Abhinay Kaushalye	3	04	10+15+15+20	20	10	10
		2	03	60+40=100			

B. Sc.: Ability Enhancement Compulsory Course (AECC)

Sem.	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I & II)	Assignment	Seminar/ Activity/ Presentation Etc.
I	वाङ्मयप्रकार : विज्ञान कथा + व्यावहारिक मराठी Wangmay Prakar : Vidnyan Katha+ Vyavaharik Marathi	3	04	10+15+15+20	20	10	10
II	वाङ्मयप्रकार : चरित्र / आत्मचरित्र + पत्रकारिता Wangmay Prakar : Charitra / Atmacharitra + Patrakarita	3	04	10+15+15+20	20	10	10
III	वाङ्मयप्रकार : काव्य + जाहिरात आणि व्यवस्थापन Wangmay Prakar : Kavya + Jahirat ani Vyavasthapan	3	04	10+15+15+20	20	10	10
IV	वाङ्मयप्रकार : नाटक + अभिनय कौशल्ये Wangmay Prakar : Natak + Abhinay Kaushalye	3	04	10+15+15+20	20	10	10

B.A. : Ability Enhancement Compulsory Course (AECC)

Sem.	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I & II)	Assignment	Seminar/Activity/ Presentation Etc.
I	वाङ्मयप्रकार : कथा + व्यावहारिक मराठी Wangmay Prakar : Katha+ Vyavaharik Marathi	3	04	10+15+15+20	20	10	10
II	वाङ्मयप्रकार : चरित्र / आत्मचरित्र + पत्रकारिता Wangmay Prakar : Charitra / Atmacharitra + Patrakarita	3	04	10+15+15+20	20	10	10
III	वाङ्मयप्रकार : काव्य / कादंबरी + संवाद कौशल्ये Wangmay Prakar : Kavya / Kadambari + Sanvad Kaushalye	3	04	10+15+15+20	20	10	10
IV	वाङ्मयप्रकार : नाटक + अभिनय कौशल्ये Wangmay Prakar : Natak + Abhinay Kaushalye	3	04	10+15+15+20	20	10	10
				60+40=100			

BBA/BCA/BSW/CCJ Etc.:
Ability Enhancement Compulsory Course (AECC)

Sem.	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I & II)	Assignment	Seminar/Activity/ Presentation Etc.
I	वाङ्मयप्रकार : कथा + पत्रकारिता Wangmay Prakar : Katha+ Patrakarita	3	04	10+15+15+20	20	10	10
II	वाङ्मयप्रकार : चरित्र / आत्मचरित्र + व्यावहारिक मराठी Wangmay Prakar : Charitra / Atmacharitra + Vyavaharik Marathi	3	04	10+15+15+20	20	10	10
III	वाङ्मयप्रकार : काव्य + प्रसारमाध्यमे Wangmay Prakar : Kavya + Prasarmadhyame	3	04	10+15+15+20	20	10	10
IV	वाङ्मयप्रकार : नाटक + अभिनय कौशल्ये Wangmay Prakar : Natak + Abhinay Kaushalye	3	04	10+15+15+20	20	10	10
				60+40=100			

Model Program Structure for UG Program

B.A. with One Major and One Minor / Without Practical

Discipline Specific Core / Discipline Elective / Open Elective

MARATHI (DSC /DSE /OE)

Sem,	Discipline Core (DSC)	Credit	Hours	Discipline Elective (DSE) / Open Elective (OE)	Credit	Hours	Marks 100	
							Theory	IA
I	Discipline: A-1 वाङ्मयप्रकार : कथा / कादंबरी Literary Form : Short Story / Novel	3	4	OE-1 मराठी साहित्य आणि कथा / कादंबरी / नाटक / चरित्र/ आत्मचरित्र Marathi Literature and Short Stories /Novels / Drama / Biography / Autobiography	3	04	60	40
	Discipline: A-2 वाङ्मयप्रकार : काव्य + मुद्रितशोधन Literary Form : Kavya	3	4					
II	Discipline: A-3 मराठी ललित गद्य Marathi Fine Prose	3	4	OE-2 मराठी साहित्य आणि कथा / कादंबरी / नाटक / चरित्र/ आत्मचरित्र Marathi Literature and Short Stories /Novels / Drama / Biography / Autobiography	3	04	60	40
	Discipline: A-4 उपयोजित मराठी / पत्रकारिता Upayojit Marathi / Patrakarita	3	4					
Exit Option with Certificate Course (50 credits)								
Sem.	Discipline Core (DSC)	Credit	Hours	Discipline Elective (DSE) / Open Elective (OE)	Credit	Hours	Marks 100	
							Theory	IA
III	Discipline: A-5 वाङ्मयप्रकार : चरित्र / आत्मचरित्र Literary Form : Biography / Autobiography	3	4	OE-3 मराठी साहित्य आणि कथा / कादंबरी / नाटक / चरित्र/ आत्मचरित्र Marathi Language Literature and Short Stories /Novels / Drama / Biography / Autobiography	3	04	60	40
	Discipline: A-6 मध्यकालीन मराठी वाङ्मयाचा इतिहास (निवडक) Medival History of Marathi Literature (Selected)	3	4					
IV	Discipline: A-7 वाङ्मयीन प्रवाहांचा अभ्यास Study of Literary Trends in Marathi	3	4	OE-4 मराठी साहित्य आणि कथा / कादंबरी /	3	04	60	40

	Discipline: A-8 आधुनिक मराठी वाङ्मयाचा इतिहास (निवडक) History of Modern Marathi Literature(Selected)	3	4	नाटक / चरित्र/ आत्मचरित्र Marathi Language Literature and Short Stories /Novels / Drama / Biography / Autobiography				

Exit Option with Diploma Course (100 credits) Choose any one Discipline as Major, the other as the Minor

Sem.	Discipline Core (DSC)	Credit	Hours	Discipline Elective (DSE) / Open Elective (OE)	Credit	Hours	Marks 100	
							Theory	IA
V	Discipline: A-9 मराठी साहित्य आणि पर्यावरण विचार Marathi Sahitya ani Paryavaran Vichar	4	4	DSE : A, E-1 (Vocational) मराठी भाषा आणि जाहिरात संहिता लेखन Marathi Language and Advertise writing OR मराठी भाषा आणि व्यक्तिमत्व विकास Marathi Language and Personality Development	3	04	60	40
	Discipline: A-10 मराठी भाषा आणि प्रकाशन व्यवहार / संपादन Marathi Language and Publication Business / Editing	4	4					
VI	Discipline: A-11 मराठी साहित्य आणि समीक्षा विचार Marathi Sahitya ani Sameeksha Vichar	4	4	DSE : A, E-2 (Vocational) मराठी भाषा आणि संगणकीय क्षेत्र Marathi Language and Computer OR भाषांतरित साहित्य Translated Literature	3	04	60	40
	Discipline: A-12 मुद्रित माध्यमांसाठी लेखन कौशल्ये Mudrit Madhyamansathi Lekhan Kaushalye	4	4					
				Internship	02	03		

Exit Option with Bachelor of Arts, B.A. Basic Degree (142credits)

Sem.	Discipline Core (DSC)	Credit	Hours	Discipline Elective (DSE) / Open Elective (OE)	Credit	Hours	Marks 100	
							Theory	IA
VII	Discipline: A-13 मराठी भाषा आणि भाषा विज्ञान / भाषाशास्त्र Marathi Bhasha ani Bhasha Vidnyan / Bhasha Shastra	4	4	DSE : A, E-3 भाषांतर विद्या / अनुवादित विद्या / मुद्रितशोधन Art of Translations / Mudritshodhan / OR मराठी साहित्य आणि संशोधन पद्धती	3	04	60	40
	Discipline: A-14 मराठी भाषा आणि पत्रकारिता Marathi Language and Journalism	4	4					

	Discipline: A-15 **दृक** - श्राव्य माध्यमांसाठी लेखन कौशल्ये Druk - Shravya Madhyamansathi Lekhan Kaushalye	4	4	Marathi Literature And Research Methodology				
VIII	Discipline: A-16 **तौलनिक** साहित्य Comparative Literature	3	4	DSE : A, E-4 साहित्य आणि इतर ललित कला Literature and Other Fine Arts	3	04	60	40
	Discipline: A-17 **वाङ्मयीन** संप्रदाय Wangmayin Sampraday	3	4	**संशोधन** प्रकल्प Research Project *	6	08	60	40
	Discipline: A-18 **विशिष्ट** लेखकाचा अभ्यास Study of Special Author	3	4	Additional Elective Paper : 1. मराठी साहित्य संशोधन Marathi Literature and Research	3	04	60	40
				2. विद्यापीठीय पातळीवरील संशोधन University Level Research	3	04	60	40
Award of Bachelor of Arts Honours, BA (Hon's) Degree in a discipline etc. (184 credits)								
*In lieu of the research project. Two additional elective papers / internship may be offered								

QUESTION PAPER PATTERN (WITOUT PRACTICAL)

Qn. No.	Particulars		Marks	Total
Theory				
SECTION – A				
I	Objective Type Questions (Compulsory)	5 out of 5	02	10
II	Reference to Context(Prose/Poetry)	3 out of 5	05	15
SECTION – B				
III	Short Answer Questions (Prose/ Poetry)	3 out of 5	5	15
SECTION – C				
IV	Essay type Answer Questions (Prose / Poetry)	2 out of 4	10	20
TOTAL				**60**
Internal Assessment	IA Test (I & II)		20	**40**
	Assignment		10	
	Seminar/Activity/Presentation Etc.		10	
	TOTAL			**100**

B.A.-with One Major and One Minor / Without Practical

Discipline Specific Core / Discipline Elective / Open Elective
MARATHI (DSC /DSE /OE)

QUESTION PAPER PATTERN WITOUT PRACTICAL

Qn. No.	Particulars		Marks	Total
Theory				
I	Objective Type Questions (Compulsory)	5 out of 5	02	10
II	Short Answer Questions	4 out of 6	05	20
III	Essay type Answer Questions	3 out of 5	10	30
TOTAL				**60**
Internal Assessment	IA Test (I & II)		20	**40**
	Assignment		10	
	Seminar/Activity/Presentation Etc.		10	
	TOTAL			**100**

Syllabus of B. A. Descipline Specific Core
Marathi (DSC)

Title of the subject/Descipline: **Marathi**				
Year	2	Corse Code: **DSC-A-5 : Marathi (B.A. III Sem)**	Credits	03
Sem.	III	Course Title : Descipline : **चरित्र / आत्मचरित्र** **(Charitra/Aatmcharitra)** **Text- 'आमचा बाप अन् आम्ही'- *डॉ. नरेंद्र जाधव,*** ***ग्रंथाली प्रकाशन, मुंबई*** (पहिले दोन भाग - माय बाप आणि दादांचे आत्मचरित्र)	Hours/Week Total	04 64

Formative Assesment Marks: 40	Summative Assesment Marks: 60	Total Marks :100

Learning Outcomes	1. To understand the way of structuring the personality.. 2. To understand the account of a persons life and achivement. 3. To understand life and experiences of the author. 4. To acquire ability to apply the acquired linguistic skills in real life situations. 5. To acquire knowledge of about Marathi literature and language.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	**आत्मचरित्र : स्वरुप आणि वैशिष्ट्ये**	1. Lecture Method	12
II	**'आमचा बाप अन् आम्ही'ची आशयसूत्रे**	2. Assignment	13
III	**'आमचा बाप अन् आम्ही'मधील व्यक्तिरेखा**	3. Individual and group presentation	13
IV	**'आमचा बाप अन् आम्ही'ची भाषा वैशिष्ट्ये**	4. Virtual Mode	13
V	**नरेंद्र जाधव यांचा संघर्ष**	5. PPT Presentation 6. Class Seminar 7. Topic Discussion	13

Recommended Learning Resources

Print Resources	1. आत्मचरित्र मीमांसा - डॉ. आनंद यादव, मेहता पब्लिशिंग हाऊस, पुणे 2. सहा दलित आत्मकथने - वासुदेव मुलाटे, स्वरुप प्रकाशन, औरंगाबाद 3. दलित साहित्य : उगम आणि विकास - डॉ. मेश्राीम युगेंद्र, मंगेश प्रकाशन, नागपूर 4. दलित आत्मकथने - संपा. गंगाधर पानतावणे, चंद्रकुमार नलगे, साकेत प्रकाशन, औरंगाबाद 5. दलित स्वकथने - डॉ. आरती कुसरे-कुलकर्णी, विजय प्रकाशन, नागपूर
Digital Resources	http://vishwakosh.marathi.gov.in http://marathivishwakosh.org http://marathi.pratilipi.com http://:mr.vikaspedia.in http://www.maayboli.com http://esahitya.com www.bbc.com

Syllabus of B. A. Descipline Specific Core

Marathi (DSC)

Title of the subject/Descipline: **Marathi**				
Year	2	Corse Code: **DSC- A0-6 : Marathi (B.A. III Sem)**	Credits	03
Sem.	III	Course Title : Descipline : **मध्यकालीन मराठी वाङ्मयाचा इतिहास(निवडक)** **(Wangmay Prakar:- Madhyakalin Marathi Wadmayacha Itihas (Nivadak))** **Text- 'संतवचनामृत' - *रा. द. रानडे,* *श्री गुरुदेव रानडे समाधी ट्रस्ट, निंबाळ आर.एस्.*** (निवडक रचना - 1.नामदेवचरित्र, 2.नामदेवांच्या अंतःकरणातील तळमळ, 3.नाम आणि भक्ति, 4.उपदेश, 5.संतमहिमा, 6.अनुभव)	Hours/Week Total	04 64

Formative Assesment Marks: 40	Summative Assesment Marks: 60	Total Marks :100

Learning Outcomes	1. To understand the history of old Marathi literature. 2. To demonstrate that challenges have been undertaken, devoloping the new skills in the process. 3. Ability to apply critical thinking and analyze data etc. 4. To acquire literature sensibility for use of language in writers and various world views. 5. To understand and to get the eternal life values.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	**अभंग - स्वरूप व परंपरा**	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion	12
II	**नामदेवांच्या अभंगातून व्यक्त होणारे चरित्र**		13
III	**नामदेवांच्या अभंगातील विठ्ठलभक्ती आणि नाममहिमा**		13
IV	**नामदेवानी अभंगाद्वारे केलेला उपदेश**		13
V	**नामदेवांच्या अभंगातून व्यक्त होणारा संतमहिमा**		13

Recommended Learning Resources

Print Resources	1. श्रीनामदेव चरित्र - महादेव आप्पाजी मुळे (वाईकर), वरद प्रकाशन, पुणे 2. श्रीनामदेव गाथा - महाराष्ट्र राज्य साहित्य आणि संस्कृती मंडळ, मुंबई 3. संत साहित्य : संदर्भ कोश - डॉ. मु.श्री. कानडे, स्नेहवर्धन प्रकाशन, पुणे 4. संत साहित्य आणि समाजप्रबोधन - वि. शं चौघुले, अनघा प्रकाशन, पुणे 5. महाराष्ट्र सारस्वत पुरवणीसह - विनायक लक्ष्मण भावे, विश्वकर्मा मुद्रणालय, पुणे
Digital Resources	http://vishwakosh.marathi.gov.in http://marathivishwakosh.org http://marathi.pratilipi.com http://:mr.vikaspedia.in http://www.maayboli.com http://esahitya.com www.bbc.com

Syllabus of B. A. Descipline Specific Core
Marathi (DSC)

Title of the subject/Descipline: **Marathi**				
Year	2	Corse Code: **DSC-A7 : Marathi (B.A. IV Sem)**	Credits	03
Sem.	IV	Course Title : Descipline : **वाङ्.मयीन प्रवाहांचा अभ्यास** **(Wangmay Prakar:- Study of Literary Trends In Marathi)** **Text- 'सहा कथाकार'- *संपा. भालचंद्र फडके,*** ***कॉन्टिनेन्टल प्रकाशन, पुणे*** (निवडक सहा कथा - किडलेली माणसे, शाळा, नाटक, राधी, प्लॅस्टिकचं विश्व, मरण स्वस्त होत आहे)	Hours/Week Total	04 64

Formative Assesment Marks: 40	Summative Assesment Marks: 60	Total Marks :100

Learning Outcomes	1. To understand the various trends in Marathi literature. 2. To understand and to get the dos eternal life of values. 3. To develop literary taste and ability to appreciate literature. 4. To acquire literature sensibility for use of language in writers and various world views. 5. To understand and to get the eternal life values.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy** **अध्यापनशास्त्र**	**Hours U/P/L**
I	**मराठी कथा: स्वरुप आणि वाटचाल**	1. Lecture Method	12
II	**'सहा कथाकार'मधील कथांमधून व्यक्त होणारे मानवी स्वभावचित्रण**	2. Assignment	13
III	**'सहा कथाकार'मधील कथांमधून व्यक्त होणारा जीवनविषयक दृष्टीकोन**	3. Individual and group presentation	13
IV	**'सहा कथाकार'मधील विनोद**	4. Virtual Mode	13
V	**'सहा कथाकार'मधील कथांची भाषाशैली**	5. PPT Presentation 6. Class Seminar 7. Topic Discussion	13

Recommended Learning Resources

Print Resources	1. मराठी कथा : मूल्य आणि ऱ्हास - जी. के. ऐनापुरे, ललित पब्लिकेशन, मुंबई 2. मराठी कथा : रूप आणि परिसर - म. द. हातकणंगलेकर 3. मराठी साहित्य : समाज आणि संस्कृती - आनंद यादव, मेहता पब्लिशिंग हाऊस, पुणे 4. मराठी कथेची स्थितीगती - अंजली सोमन, प्रतिमा प्रकाशन, पुणे 5. मराठीतील कथारुपे - रा. ग. जाधव, स्नेहवर्धन प्रकाशन, पुणे
Digital Resources	http://vishwakosh.marathi.gov.in http://marathivishwakosh.org http://marathi.pratilipi.com http://:mr.vikaspedia.in http://www.maayboli.com http://esahitya.com www.bbc.com

Syllabus of B. A. Descipline Specific Core
Marathi (DSC)

Title of the subject/Descipline: **Marathi**				
Year	2	Corse Code: **DSC-A-8 : Marathi (B. A. IV Sem)**	Credits	03
Sem.	IV	Course Title : Descipline : **आधुनिक मराठी वाङ्.मयाचा इतिहास (निवडक)** **(Wangmay Prakar:- History of Modern Marathi Literature (Selected))** **Text- 'गावकुसाबाहेरील कथा'- *संपा. डॉ. शरणकुमार लिबाळे,*** ***दिलीपराज प्रकाशन प्रा.लि.पुणे***	Hours/Week Total	04 64

Formative Assesment Marks: 40	Summative Assesment Marks: 60	Total Marks :100

Learning Outcomes	1. To understand the basics of short story as a one of popular form in Marathi literature. 2. To understand and to get the dos eternal life of values. 3. To develop literary taste and ability to appreciate literature. 4. To acquire literature sensibility for use of language in writers and various world views. 5. To understand and to get the eternal life values.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	**मराठी कथा : स्वरुप आणि वैशिष्ट्ये**	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion	12
II	**'गावकुसाबाहेरील कथा'मधील कथांचे स्वरुप**		13
III	**'गावकुसाबाहेरील कथा'ची वाङ्.मयीन वैशिष्ट्ये**		13
IV	**'गावकुसाबाहेरील कथा'मधील सामाजिक वास्तव**		13
V	**'गावकुसाबाहेरील कथा' आणि ग्रामजीवन**		13

Recommended Learning Resources

Print Resources

1. मराठी कथा : मूल्य आणि ऱ्हास - जी. के. ऐनापुरे, ललित पब्लिकेशन, मुंबई
2. मराठी कथा : रूप आणि परिसर - म. द. हातकणंगलेकर
3. कथा : रूप आणि आस्वाद, पंडित टापरे, निहारा प्रकाशन, मुंबई
4. ग्रामीण मराठी कथा - संपा. प्रा. अंबादास माडगूळकर/सूर्यकांत खांडेकर, ठोकळ प्रकाशन, पुणे
5. ग्रामीण साहित्य : स्वरुप आणि समस्या - आनंद यादव, मेहता पब्लिशिंग हाऊस, पुणे
6. मराठीतील कथारुपे - रा. ग. जाधव, स्नेहवर्धन प्रकाशन, पुणे

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MARATHI Open Elective (OE)

Title of the subject/Discipline: **Marathi**				
Year	2	Corse Code: **OE-3: OE-3 Marathi**	Credits	03
Sem.	III	Course Title : Descipline : **मराठी साहित्य : कथा/कादंबरी/नाटक/चरित्र** **(Marathi Sahitya : Katha/Kadambari/Natak/Charitra)** **Text- 'आषाढ'- *रणजित देसाई, मेहता पब्लिशिंग हाऊस, पुणे*** (निवडक सात कथा: सोयरीक, ओझं, कात, पावनेर, भजन, पाठलाग, रूप्याचे डोळे)	Hours/Week Total	04 64

Formative Assesment Marks: 40	Summative Assesment Marks: 60	Total Marks :100

Learning Outcomes

1. To understand the basics of short story as a one of popular form in Marathi literature.
2. To understand and to get the dos eternal life of values.
3. To develop literary taste and ability to appreciate literature.
4. To acquire literature sensibility for use of language in writers and various world views.
5. To understand and to get the eternal life values.

Unit No.	Course Content/ अभ्यासघटक	Suggested Pedagogy अध्यापनशास्त्र	Hours U/P/L
I	**मराठी कथा: स्वरुप आणि वाटचाल**	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion	12
II	**कथाकार - रणजित देसाई**		13
III	**'आषाढ'मधील निसर्ग आणि मानव यांच्यातील नाते**		13
IV	**'आषाढ'मधील भाषा वैशिष्ट्ये**		13
V	**'आषाढ'मधील व्यक्तिरेखा**		13

Recommended Learning Resources

Print Resources

1. मराठी कथा : मूल्य आणि ऱ्हास - जी. के. ऐनापुरे, ललित पब्लिकेशन, मुंबई
2. मराठी कथा : रूप आणि परिसर - म. द. हातकणंगलेकर
3. कथा : रूप आणि आस्वाद, पंडित टापरे, निहारा प्रकाशन, मुंबई
4. ग्रामीण मराठी कथा - संपा. प्रा. अंबादास माडगूळकर/सूर्यकांत खांडेकर, ठोकळ प्रकाशन, पुणे
5. ग्रामीण साहित्य : स्वरुप आणि समस्या - आनंद यादव, मेहता पब्लिशिंग हाऊस, पुणे
6. मराठीतील कथारुपे - रा. ग. जाधव, स्नेहवर्धन प्रकाशन, पुणे

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http://esahitya.com
www.bbc.com

MARATHI Open Elective (OE)

Title of the subject/Discipline: **Marathi**				
Year	2	Corse Code: **OE-4: OE-4 Marathi**	Credits	03
Sem.	IV	Course Title : Descipline : **मराठी साहित्य : कथा/कादंबरी/नाटक/चरित्र** **(Marathi Sahitya : Katha/Kadambari/Natak/Charitra)** **Text- 'अमृतवेल' - *वि. स. खांडेकर,*** ***मेहता पब्लिशिंग हाऊस, पुणे***	Hours/Week Total	04 64

Formative Assesment Marks: 40	Summative Assesment Marks: 60	Total Marks :100

Learning Outcomes	1. To understand the way of structuring the personality and pattern one's life from novel. 2. To understand the an account of a persons life and achivement. 3. To understand life and experiences of the author. 4. To acquire ability to apply the acquired linguistic skills in real life situations. 5. To acquire knowledge of about Marathi literature and language.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	**मराठी कादंबरी: स्वरुप आणि वाटचाल**	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion	12
II	**'अमृतवेल'मधील आशयसूत्रे**		13
III	**'अमृतवेल'मधील व्यक्तिरेखा**		13
IV	**'अमृतवेल' या कादंबरीची वाङ्.मयीन वैशिष्ट्ये**		13
V	**'अमृतवेल'मधील समकालीन वास्तव**		13

Recommended Learning Resources

Print Resources	1. कादंबरी : एक साहित्यप्रकार - हरिश्चंद्र थोरात, शब्द प्रकाशन, मुंबई 2. मराठी कादंबरीचा इतिहास - चंद्रकांत बांदिवडेकर, मेहता पब्लिशिंग हाऊस, पुणे 3. कादंबरी : सार आणि विस्तार - महेंद्र कदम, अक्षरदीप प्रकाशन, कोल्हापूर 4. धार आणि काठ - नरहर कुरुंदकर, देशमुख आणि कंपनी, पुणे 5. मराठी कादंबरी तंत्र आणि विकास - प्रभाकर बापट/नारायण गोडबोले, व्हिक्टोरिया कॉलेज, लष्कर, ग्वाल्हेर
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Syllabus of B. Com. Enhancement Compulsory Course (AECC)

<table>
<tr><td colspan="5">Title of the subject/Discipline: Marathi</td></tr>
<tr><td>Year</td><td>2</td><td rowspan="2">Corse Code: AECC-3: L-2 Marathi (B. Com.III Sem)
Course Title : Descipline : वाङ्.मयप्रकार: काव्य + मराठी भाषा आणि प्रसारमाध्यमे
(Wangmay Prakar:- Kavya + Marathi Bhasha Aani Prasaramadhyame)
Text- ‘काजवा’ - अविनाश ओगले, बुद्धिग्राम प्रकाशन, बेळगाव
(निवडक एकवीस कविता - पृष्ठ क्र.-
06,08,12,13,16,17,18,22,23,25,28,33,34,38,40,42,43,44,48,49,56)</td><td>Credits</td><td>03</td></tr>
<tr><td>Sem.</td><td>III</td><td>Hours/Week
Total</td><td>04
64</td></tr>
<tr><td colspan="2">Formative Assesment Marks: 40</td><td>Summative Assesment Marks: 60</td><td colspan="2">Total Marks :100</td></tr>
<tr><td>Learning Outcomes</td><td colspan="4">1. To understand the basic of the Poetry.
2. To understand the terminology in Poetry.
3. To understand the some of the best sample of modern Marathi Poetry.
4. To acquire ability to read, write, avaluate the poetry independently.
5. To acquire writing skills for newspaper & media.</td></tr>
<tr><td>Unit No.</td><td>Course Content/ अभ्यासघटक</td><td>Suggested Pedagogy
अध्यापनशास्त्र</td><td>Hours
U/P/L</td></tr>
<tr><td>I</td><td>मराठी कविता : स्वरुप आणि वाटचाल</td><td rowspan="5">1. Lecture Method
2. Assignment
3. Individual and group presentation
4. Virtual Mode
5. PPT Presentation
6. Class Seminar
7. Topic Discussion
8. Visit to media centre</td><td>12</td></tr>
<tr><td>II</td><td>‘काजवा’मधील कवितांचे स्वरुप</td><td>13</td></tr>
<tr><td>III</td><td>‘काजवा’मधील कवितांची वाङ्.मयीन वैशिष्ट्ये</td><td>13</td></tr>
<tr><td>IV</td><td>‘काजवा’मधील संस्कार आणि संस्कृती</td><td>13</td></tr>
<tr><td>V</td><td>प्रसारमाध्यमामासाठी लेखन कौशल्य</td><td>13</td></tr>
<tr><td colspan="5">Recommended Learning Resources</td></tr>
<tr><td>Print Resources</td><td colspan="4">1. कविता : भाषा व परिसर - डॉ. शिवाजी पाटील, रजत प्रकाशन, औरंगाबाद
2. साठोत्तरी कविता व कवी - रा. ग. जाधव, साकेत प्रकाशन, औरंगाबाद
3. आधुनिक मराठी वाङ्.मयाचा इतिहास - डॉ. मोहन शेळके, अल्फा पब्लिकेशन्स, नांदेड
4. व्यावहारिक मराठी - लीला गोविलकर/डॉ. जयश्री पाटणकर, स्नेहवर्धन पब्लिकेशन हाऊस, पुणे
5. प्रसारमाध्यमे आणि मराठी भाषा - संपा. डॉ. भास्कर शेळके, स्नेहवर्धन प्रकाशन, पुणे</td></tr>
<tr><td>Digital Resources</td><td colspan="4">http://vishwakosh.marathi.gov.in
http://marathivishwakosh.org
http://marathi.pratilipi.com
http://:mr.vikaspedia.in
http://www.maayboli.com
http://esahitya.com
www.bbc.com</td></tr>
</table>

Syllabus of B. Com. Ability Enhancement Compulsory Course (AECC)

Title of the subject/Descipline: **Marathi**				
Year	2	Corse Code: **AECC-4: L-2 Marathi (B. Com. IV Sem)**	Credits	03
Sem.	IV	Course Title : Descipline : **वाङ्.मयप्रकार : नाटक + अभिनयकौशल्य** **(Wangmay Prakar:- Natak + Abhinay Koushalya)** **Text- 'चारचौघी' - *प्रशांत दळवी, पॉप्युलर प्रकाशन प्रा.लि. मुंबई.***	Hours/Week Total	04 64

Formative Assesment Marks: 40	Summative Assesment Marks: 60	Total Marks :100

Learning Outcomes	1. To create and cultivate taste in Marathi literature. 2. To get acquainted to various movement in modern Marathi drama. 3. To get major movement related to drama, works and dramatists. 4. To devolop interest towards drama. 5. To learn various types of acting.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	**मराठी नाटक : स्वरुप आणि वैशिष्ट्ये**	1. Lecture Method	12
II	**'चारचौघी'मधील आशयसूत्रे**	2. Assignment	13
III	**'चारचौघी'मधील भाषाशैली**	3. Individual and group presentation	13
IV	**'चारचौघी'मधील व्यक्तिरेखा**	4. Virtual Mode	13
V	**अभिनयाचे महत्त्व**	5. PPT Presentation 6. Class Seminar 7. Topic Discussion	13

Recommended Learning Resources	
Print Resources	1. नाट्यसमीक्षा : संपा. डॉ. वि. भा. देशपांडे, मेहता पब्लिशिंग हाऊस, पुणे 2. मराठी नाट्यसृष्टी - गो. म. कुलकर्णी, मेहता पब्लिशिंग हाऊस, पुणे 3. जागतिक रंगभूमी - माणिक कानडे, रोहन प्रकाशन, मुंबई 4. नाट्यवाङ्.मय- डॉ. यशवंत राऊत, गोदा प्रकाशन, औरंगाबाद 5. आधुनिक मराठी वाङ्.मयाचा इतिहास - डॉ. मोहन शेळके, अल्फा पब्लिकेशन्स, नांदेड
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Syllabus of B. Sc. Ability Enhancement Compulsory Course (AECC)

Title of the subject/Descipline: **Marathi**				
Year	2	Corse Code: **AECC-3: L-2 Marathi (B. Sc. III sem)**	Credits	03
Sem.	III	Course Title : Descipline : **वाङ्.मयप्रकार : काव्य + जाहिरात आणि व्यवस्थापन** **(Wangmay Prakar:- Kavya + Jahirat Ani Vyavasthapan)** **Text- 'बहिणाईची गाणी'- *बहिणाबाई चौधरी,*** ***सुचित्रा प्रकाशन, मुंबई*** (निवडक एकवीस कविता-1,2,3,4,5,6,7,8,9,11,12,17,22,24,26,27,28,30,32,34,41)	Hours/Week Total	04 64

Formative Assesment Marks: 40	Summative Assesment Marks: 60	Total Marks :100

Learning Outcomes	1. To understand the basic of the Poetry. 2. To understand the terminology in Poetry. 3. To understand the some of the best sample of modern Marathi Poetry. 4. To acquire ability to read, write, evaluate the poetry independently. 5. To understand various skills for the preparation of advertisement.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	**मराठी कविता : स्वरुप आणि वाटचाल**	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion 8. Visit to media centre	12
II	**'बहिणाईची गाणी'मधील जीवनविषयक तत्त्वज्ञान**		13
III	**'बहिणाईची गाणी'मधील निसर्ग**		13
IV	**'बहिणाईची गाणी'मधील स्त्री संवेदना**		13
V	**जाहिरात लेखनकौशल्य**		13

Recommended Learning Resources

Print Resources	1. कविता : भाषा व परिसर - डॉ. शिवाजी पाटील, रजत प्रकाशन, औरंगाबाद 2. साठोत्तरी कविता व कवी - रा. ग. जाधव, साकेत प्रकाशन, औरंगाबाद 3. प्रदक्षिणा-कॉन्टिनेंटल प्रकाशन, पुणे 4. आधुनिक मराठी वाङ्.मयाचा इतिहास - डॉ. मोहन शेळके, अल्फा पब्लिकेशन्स, नांदेड 5. उपयोजित मराठी - डॉ. संजय लांडगे, दिलिपराज प्रकाशन, मुंबई
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Syllabus of B. Sc. Ability Enhancement Compulsory Course (AECC)

Title of the subject/Descipline: **Marathi**				
Year	2	Corse Code: **AECC-4: L-2 Marathi (B. Sc. IV Sem)**	Credits	03
Sem.	IV	Course Title : Descipline : **वाङ्.मयप्रकार : नाटक + अभिनयकौशल्ये** **(Wangmay Prakar:- Natak + Abhinayakoushalye)** **Text- 'रायगडाला जेव्हा जाग येते'- *वसंत कानेटकर,*** ***प्यॉपुलर प्रकाशन, मुंबई***	Hours/Week Total	04 64

Formative Assesment Marks: 40	Summative Assesment Marks: 60	Total Marks :100

Learning Outcomes	1. To create and cultivate taste in Marathi literature. 2. To get acquainted to various movement in modern Marathi drama. 3. To get major movement related to drama, works and dramatists. 4. To get acqainted with the terminology in drama criticism. 5. To understand various types of acting.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	**नाटक: स्वरुप आणि वाटचाल**	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion	12
II	**नाटककार वसंत कानेटकर**		13
III	**'रायगडाला जेव्हा जाग येते'चे आशयविश्व**		13
IV	**'रायगडाला जेव्हा जाग येते'मधील व्यक्तिरेखा**		13
V	**अभिनयकौशल्ये**		13

Recommended Learning Resources

Print Resources	1. नाट्यसमीक्षा : संपा. डॉ. वि. भा. देशपांडे, मेहता पब्लिशिंग हाऊस, पुणे 2. मराठी नाट्यसृष्टी - गो. म. कुलकर्णी, मेहता पब्लिशिंग हाऊस, पुणे 3. जागतिक रंगभूमी - माणिक कानडे, रोहन प्रकाशन, मुंबई 4. नाट्यवाङ्.मय-डॉ. यशवंत राऊत, गोदा प्रकाशन, औरंगाबाद 5. आधुनिक मराठी वाङ्.मयाचा इतिहास - डॉ. मोहन शेळके, अल्फा पब्लिकेशन्स, नांदेड
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Syllabus of B. A. Ability Enhancement Compulsory Course (AECC)

Title of the subject/Descipline: **Marathi**				
Year	2	Corse Code: **AECC-3: Marathi (B.A. III Sem)**	Credits	03
Sem.	III	Course Title : Descipline : **वाङ्मयप्रकार : काव्य/कादंबरी/संवादकौशल्ये** **(Wangmay Prakar:- Kavya/Kadambari/Sanvadkoushalye)** **Text- 'एक होता कार्व्हर'- *वीणा गवाणकर,*** ***राजहंस प्रकाशन, पुणे***	Hours/Week Total	04 64

Formative Assesment Marks: 40	Summative Assesment Marks: 60	Total Marks :100

Learning Outcomes	1. To understand the way of structuring the personality and pattern one's life from novel. 2. To understand the an account of a persons life and achivement. 3. To understand life and experiences of the author. 4. To acquire ability to apply the acquired linguistic skills in real life situations. 5. To acquire knowledge of communication skill.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	**मराठी कादंबरी: स्वरुप आणि वाटचाल**	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion	12
II	**'एक होता कार्व्हर'मधील आशयसूत्रे**		13
III	**'एक होता कार्व्हर'मधील व्यक्तिरेखा**		13
IV	**'एक होता कार्व्हर'मधील शेतीविषयक संशोधन**		13
V	**संवादलेखन**		13

Recommended Learning Resources

Print Resources	1. कादंबरी : एक साहित्यप्रकार - हरिश्चंद्र थोरात, शब्द प्रकाशन, मुंबई 2. मराठी कादंबरीचा इतिहास - चंद्रकांत बांदिवडेकर, मेहता पब्लिशिंग हाऊस, पुणे 3. कादंबरी : सार आणि विस्तार - महेंद्र कदम, अक्षरदीप प्रकाशन, कोल्हापूर 4. धार आणि काठ - नरहर कुरुंदकर, देशमुख आणि कंपनी, पुणे 5. संवादकौशल्य - डॉ. आशा भागवत, डायमंड पब्लिकेशन, पुणे
Digital Resources	http://vishwakosh.marathi.gov.in http://marathivishwakosh.org http://marathi.pratilipi.com http://:mr.vikaspedia.in http://www.maayboli.com http://esahitya.com www.bbc.com

Syllabus of B. A. Ability Enhancement Compulsory Course (AECC)

Title of the subject/Descipline: **Marathi**				
Year	2	Corse Code: **AECC-4: L-2 Marathi (B. A. IV Sem)**	Credits	03
Sem.	IV	Course Title : Descipline : **वाड्.मयप्रकार: नाटक + अभिनय कौशल्ये** **(Wangmay Prakar:- Natak + Abhinay Kaushalye)** **Text- 'कोण म्हणतं टक्का दिला'- *जयंत पवार,*** ***नीलकंठ प्रकाशन, पुणे.***	Hours/Week Total	04 64

Formative Assesment Marks: 40	Summative Assesment Marks: 60	Total Marks :100

Learning Outcomes	1. To create and cultivate taste in Marathi literature. 2. To get acquainted to various movement in modern Marathi drama. 3. To get major movement related to drama, works and dramatists. 4. To devolop attraction towards drama. 5. To learn various types of acting.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	**नाटक: स्वरुप आणि वाटचाल**	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion 8. Visit to Theatre	12
II	**'कोण म्हणतं टक्का दिला'मधील सामाजिक वास्तव**		13
III	**'कोण म्हणतं टक्का दिला'मधील आशयसूत्रे**		13
IV	**'कोण म्हणतं टक्का दिला'मधील व्यक्तिरेखा**		13
V	**अभिनयाचा अर्थ आणि प्रकार**		13

Recommended Learning Resources

Print Resources	1. नाट्यसमीक्षा : संपा. डॉ. वि. भा. देशपांडे, मेहता पब्लिशिंग हाऊस, पुणे 2. मराठी नाट्यसृष्टी - गो. म. कुलकर्णी, मेहता पब्लिशिंग हाऊस, पुणे 3. जागतिक रंगभूमी - माणिक कानडे, रोहन प्रकाशन, मुंबई 4. नाट्यवाड्.मय- डॉ. यशवंत राऊत, गोदा प्रकाशन, औरंगाबाद 5. आधुनिक मराठी वाड्.मयाचा इतिहास - डॉ. मोहन शेळके, अल्फा पब्लिकेशन्स, नांदेड
Digital Resources	http://vishwakosh.marathi.gov.in http://marathivishwakosh.org http://marathi.pratilipi.com http://:mr.vikaspedia.in http://www.maayboli.com http://esahitya.com www.bbc.com

Syllabus of BBA/BCA/BSW/CCJ, Ability Enhancement Compulsory Course (AECC)

Title of the subject/Descipline: **Marathi**				
Year	2	Corse Code: **AECC-3: L-2 Marathi (BBA/BCA III Sem)**	Credits	03
Sem.	III	Course Title : Descipline : **वाङ्.मयप्रकार : काव्य + प्रसारमाध्यमे** **(Wangmay Prakar:- Kavya Ani Prasarmadhyame)** **Text- 'सौंदर्योत्सव' - *संपा. प्रा.गो.म.कुलकर्णी, डॉ. सुषमा करोगल, कर्मवीर प्रकाशन, पुणे*** (निवडक एकवीस कविता - भा. रा. तांबे-कविता क्र. 1,2,4,11,12,15,16. बा. भ. बोरकर-कविता क्र. 17,23,24,26,28,29,32. शांता शेळके-कविता क्र. 33,34,35,37,43,46,48)	Hours/Week Total	04 64
Formative Assesment Marks: 40		Summative Assesment Marks: 60	Total Marks :100	

Learning Outcomes	1. To understand the basic of the Poetry. 2. To understand the terminology in Poetry. 3. To understand the some of the best sample of modern Marathi Poetry. 4. To acquire ability to read, write, evaluate the poetry independently. 5. To understand various skills to write for media.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy** **अध्यापनशास्त्र**	**Hours U/P/L**
I	**मराठी कविता : स्वरुप आणि वाटचाल**	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion 8. Visit to media centre	12
II	**'सौंदर्योत्सव'मधील कवी आणि कवितांचे स्वरुप**		13
III	**'सौंदर्योत्सव'मधील कवितांची वाङ्.मयीन वैशिष्ट्ये**		13
IV	**'सौंदर्योत्सव'मधील स्त्रीसंवेदना**		13
V	**प्रसारमाध्यमांचे महत्त्व**		13

Recommended Learning Resources	
Print Resources	1. कविता : भाषा व परिसर - डॉ. शिवाजी पाटील, रजत प्रकाशन, औरंगाबाद 2. साठोत्तरी कविता व कवी - रा. ग. जाधव, साकेत प्रकाशन, औरंगाबाद 3. प्रदक्षिणा-कॉन्टिनेंटल प्रकाशन, पुणे 4. आधुनिक मराठी वाङ्.मयाचा इतिहास - डॉ. मोहन शेळके, अल्फा पब्लिकेशन्स, नांदेड 5. प्रसारमाध्यमे आणि मराठी भाषा - संपा. डॉ. भास्कर शेळके, स्नेहवर्धन प्रकाशन, पुणे
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Syllabus of BBA/BCA/BSW/CCJ, Enhancement Ability Compulsory Course (AECC)

<table>
<tr><td colspan="6">Title of the subject/Descipline: Marathi</td></tr>
<tr><td>Year</td><td>2</td><td rowspan="2">Corse Code: AECC-4: L-2 Marathi (BBA/BCA IV Sem)
Course Title : Descipline : वाड्.मयप्रकार : नाटक + अभिनय कौशल्य
(Wangmay Prakar:- Natak Ani Abhinay koushaly)
Text- ‘तो मी नव्हेच!’- प्र. के. अत्रे, परचुरे प्रकाशन मंदिर, मुंबई</td><td>Credits</td><td>03</td></tr>
<tr><td>Sem.</td><td>IV</td><td>Hours/Week
Total</td><td>04
64</td></tr>
<tr><td colspan="2">Formative Assesment Marks: 40</td><td>Summative Assesment Marks: 60</td><td colspan="2">Total Marks :100</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">1. To create and cultivate taste in Marathi literature.
2. To get acquainted to various movement in modern Marathi drama.
3. To get major movement related to drama, works and dramatists.
4. To get acqainted with the terminology in drama criticism.
5. To understand the skills for acting .</td></tr>
<tr><td>Unit No.</td><td>Course Content/ अभ्यासघटक</td><td colspan="2">Suggested Pedagogy
अध्यापनशास्त्र</td><td>Hours
U/P/L</td></tr>
<tr><td>I</td><td>मराठी नाटक : स्वरूप आणि वाटचाल</td><td colspan="2" rowspan="5">1. Lecture Method
2. Assignment
3. Individual and group presentation
4. Virtual Mode
5. PPT Presentation
6. Class Seminar
7. Topic Discussion</td><td>12</td></tr>
<tr><td>II</td><td>‘तो मी नव्हेच!’मधील व्यक्तिरेखा</td><td>13</td></tr>
<tr><td>III</td><td>‘तो मी नव्हेच!’मधील भाषा वैशिष्ट्ये</td><td>13</td></tr>
<tr><td>IV</td><td>‘तो मी नव्हेच!’मधील सामाजिक वास्तव</td><td>13</td></tr>
<tr><td>V</td><td>अभिनयकलेचा आविष्कार</td><td>13</td></tr>
<tr><td colspan="5">Recommended Learning Resources</td></tr>
<tr><td>Print Resources</td><td colspan="5">1. नाट्यसमीक्षा : संपा. डॉ. वि. भा. देशपांडे, मेहता पब्लिशिंग हाऊस, पुणे
2. मराठी नाट्यसृष्टी - गो. म. कुलकर्णी, मेहता पब्लिशिंग हाऊस, पुणे
3. जागतिक रंगभूमी - माणिक कानडे, रोहन प्रकाशन, मुंबई
4. नाट्यवाड्.मय- डॉ. यशवंत राऊत, गोदा प्रकाशन, औरंगाबाद
5. आधुनिक मराठी वाड्.मयाचा इतिहास - डॉ. मोहन शेळके, अल्फा पब्लिकेशन्स, नांदेड</td></tr>
<tr><td>Digital Resources</td><td colspan="5">http://vishwakosh.marathi.gov.in
http://marathivishwakosh.org
http://marathi.pratilipi.com
http://:mr.vikaspedia.in
http://www.maayboli.com
http://esahitya.com
www.bbc.com</td></tr>
</table>

Board of Studies in Marathi (U.G.)

1. **Prof. Dr. Manisha S. Nesarkar** (9900484161) - Chairman, B.O.S. (U.G./P.G.)
Department of Studies and Research in Marathi, R.C.U, Belagavi

2. **Dr. S.M. Rayamane** (9449513471) -Member
Dept. of Marathi, G.I.Bagewadi College, Nipani

3. **Dr. Gopal Mahamuni** (8073169971) -Member
Dept. of Marathi, Smt. K. A. C. College, Bedkihal

* * * * *

RANI CHANNAMMA UNIVERSITY

BELAGAVI-591156, KARNATAKA

DEPT. OF MARATHI

A

DRAFT

OF

Learning Outcomes-Based Curriculum Framework (LOCF)

For

UNDERGRADUATE DEGREE (B.A.)

Subject: Marathi

Framework

for

Curriculum for B. A. V & VI Semester Discipline Specific Course (DSC)

Curriculum for B. A.V Semester Skill Enhancement Course (SEC)

&

B. A.VI Semester Internship/Project

w. e. f.

Academic Year 2023-24 and Onwards

RANI CHANNAMMA UNIVERSITY, BELAGAVI

UNDERGRADUATE DEGREE (B.A.)

Subject: Marathi

Curriculum for B. A. V & VI Semester Discipline Specific Course (DSC)

Curriculum for B. A.V Semester Skill Enhancement Course (SEC)
&
B. A.VI Semester Internship/Project

w. e. f.

Academic Year 2023-24 and Onwards

Framework

Sem	Type Of Course	Theory/ Practicle	Course Title	Instruction Hour/ Week	Total Hours /sem	Duration of Exam	Formative	Summative
V	DSC-A-9	Theory	Marathi Sahitya Aani Paryavaran Vichar	04 hrs	64	02 hrs	40	60
	DSC-A10	Theory	Marathi Bhasha Aani Prakashan Vyavahar/Sampadan	04 hrs	64	02 hrs	40	60
	DSE-A 11	Theory	Marathi Bhasha Aani Vyaktimatva Vikas	04 hrs	64	02 hrs	40	60
	SEC-4*	Theory + Practicle	Marathi Bhasha Aani Jahirat Sanhita Lekhan	02(T)+ 1(T)	48	01 hr	20	30
			Total					
VI	DSC-A-12	Theory	Marathi Sahitya Aani Samiksha Vichar	04 hrs	64	02 hrs	40	60
	DSC-A-13	Theory	Mudrit Madgyamansathi Lekhan Koushalya	04 hrs	64	02 hrs	40	60
	DSC-A-14	Theory	Bhashantarit Sahitya	04 hrs	64	02 hrs	40	60
	Internship/ Project							
			Total					

*****Student can opt Cyber Security as SEC or the SEC of his/her DSCC selected

PROGRAMME SPECIFIC OUTCOMES (PSO):

On completion of the 03 years Degree in Marathi students will be able to learn-

- **POS 01 :** Marathi language, linguistic, literature, its history, different forms and trends in Literature.
- **POS 02 :** Awareness about the social responsibilities through different texts prescribed.
- **POS 03 :** Self reliance, through Linguistic skills like communication, translation, creative writing, writing for varoius media etc.
- **POS 04:** To build up strong bond of co-existence with all Human Beings.
- **POS 05:** Comparative study of Marathi liturature and literature from other languages.

B. A. V Semester
Discipline Specific Course (DSC-A9)
Subject:Marathi

Title of the Subject/Discipline: **Marathi**				
Year	III	**Course Code: DSC-A9**	Credits	04
Sem.	V	Course Title : Discipline : **मराठी साहित्य आणि पर्यावरण विचार** **(Marathi Sahitya Aani Paryavaran Vichar)** **Text- 'शेकरा' -*रणजित देसाई, मेहता पब्लिशिंग हाऊस, पुणे***	Hours/Week Total	04 64

Formative Assesment Marks:40	Summative Assesment Marks: 60	Total Marks :100

Learning Outcomes

1. निसर्गाचे महत्त्व समजेल.
2. वृक्षांचे मानवी जीवनातील महत्त्व समजेल.
3. वनीकरणाविषयी आवड निर्माण होईल.
4. मानव आणि मानवेतर प्राणी यांच्यातील परस्पर संबंधांचे ज्ञान होईल.
5. जंगल, जल आणि जमीन यांचे महत्त्व समजेल.

Unit No.	Course Content/ अभ्यासघटक	Suggested Pedagogy अध्यापनशास्त्र	Hours U/P/L
I	**पर्यावरण संकल्पना व स्वरूप** 1.पर्यावरण म्हणजे काय? 2.पर्यावरणाचे महत्त्व 3.पर्यावरणाचे प्रदुषण 4.पर्यावरणाचे संवर्धन	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion	16
II	**मराठी साहित्यातील पर्यावरण** 1. प्राचीन मराठी साहित्यातील पर्यावरण विचार 2. अर्वाचीन मराठी साहित्यातील पर्यावरण विचार		16
III	**'शेकरा' पर्यावरणीय कादंबरी** 1.'शेकरा' कादंबरीतील निसर्गचित्रण 2.शेकरा प्राण्याचा जीवनसंघर्ष		16

	3. 'शेकरा'मधील प्राणीविश्व		
IV	**'शेकरा' कादंबरीचे वाङ्.मयीन विशेष** 1.'शेकरा' कादंबरीचे वेगळेपण 2. 'शेकरा' कादंबरीची भाषाशैली		16
Recommended Learning Resources			
Print Resources	1. **'बखर पर्यावरणाची'- अतुल देऊळगावकर, लोकवाङ्.मय, मुंबई** 2. **'वेध पर्यावरणाचा' - निरंजन घाटे, मेहता पब्लिशिंग हाऊस, पुणे** 3. **'पर्यावरणीय साहित्य आणि समीक्षा' - डॉ. विनोद गायकवाड, अक्षरदीप प्रकाशन, मुंबई** 4. **'चिंतन' - शरद काळे, ग्रंथाली प्रकाशन, मुंबई** 5. **'पर्यावरणीय प्रबोधन आणि साहित्य' - प्रा. रा. ग. जाधव, स्नेहवर्धन प्रकाशन, नागपूर**		
Digital Resources	• http://vishwakosh.marathi.gov.in • http://marathivishwakosh.org • http://marathi.pratilipi.com • http://:mr.vikaspedia.in • http://www.maayboli.com • http://esahitya.com • www.bbc.com		

B. A. V Semester
Discipline Specific Course (DSC-A10)
Subject:Marathi

Title of the Subject/Discipline: **Marathi**				
Year	III	**Course Code: DSC-A10**	Credits	04
Sem.	V	Course Title : Discipline : **मराठी भाषा आणि प्रकाशन व्यवहार/संपादन (Marathi Bhasha Aani Prakashan Vyavahar/Sampadan)**	Hours/Week Total	04 64
Formative Assesment Marks:40		Summative Assesment Marks: 60	Total Marks :100	

Learning Outcomes	1. पुस्तक प्रकाशनाचे कौशल्य हस्तगत करतील. 2. पुस्तक प्रकाशनाच्या कौशल्यामुळे रोजगार मिळेल. 3. प्रकाशनाच्या व्यवसायात कायमस्वरुपी स्थिरता मिळेल. 4. प्रकाशनाचे व संपादक म्हणून आपला एक चांगला ठसा निर्माण करतील. 5. साहित्यिक घडामोडीचे ज्ञान होईल.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	**प्रकाशन व्यवसायाचे स्वरूप** 1.प्रकाशन व्यवसाय म्हणजे काय? 2.प्रकाशन हेतू 3.प्रकाशन व्यवसायाचे महत्त्व	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion	16
II	**प्रकाशन व्यवसायाची प्रक्रिया** 1.विषय व लेखक 2.हस्तलिखित : वाचन व परिक्षण 3.मद्रण, मुखपृष्ठ, मलपृष्ठ 4.छपाई, बांधणी व वितरण		16
III	**लेखक, प्रकाशक, संपादकाचीभूमिका** 1. लेखक 2. प्रकाशक		16

	3. संपादक		
IV	**प्रकाशनविश्वातील संधी** 1.पुस्तकाची प्रसिद्धी व विक्री-ऑनलाईन, ऑफलाईन 2.समाजमाध्यमे आणि ई-बुक, ऑडिओ बुक माध्यमातून वाचन 3.मुद्रक, वितरक, संपादक, मुद्रीत शोधक, चित्रकार इत्यादी रोजगाराच्या संधी		16
Recommended Learning Resources			
Print Resources	1. **'प्रकाशन व्यवहार आणि संपादन-डॉ. उज्वला भोर,प्रशांत पब्लिकेशन, जळगाव** 2. **'मराठी प्रकाशनाचे स्वरूप, प्रेरणा व परंपरा'- अ. ह. लिमये, पुणे** 3. **'प्रकाशन, संपादन आणि लेखनकौशल्ये'- डॉ. उज्वला भोर, प्रशांत पब्लिकेशन्स, जळगाव** 4. **'प्रकाशन व्यवसाय परिचय'- शरद गोगटे, अखिल भारतीय मराठी प्रकाशक संघ, पुणे** 5. **'वैखरी, भाषा आणि भाषाव्यवहार' - डॉ. अशोक केळकर, स्नेहवर्धन प्रकाशन, पुणे**		
Digital Resources	• http://vishwakosh.marathi.gov.in • http://marathivishwakosh.org • http://marathi.pratilipi.com • http://:mr.vikaspedia.in • http://www.maayboli.com • http://esahitya.com • www.bbc.com		

B. A. V Semester
Discipline Specific Course (DSC-A11)
Subject:Marathi

Title of the Subject/Discipline: **Marathi**				
Year	III	Course Code: **DSC-A 11**	Credits	03
Sem.	V	Course Title : Discipline : **मराठी भाषा आणि व्यक्तिमत्त्व विकास** **(Marathi Bhasha Aani Vyaktimatva Vikas)**	Hours/Week Total	04 64

Formative Assesment Marks:40	Summative Assesment Marks: 60	Total Marks :100

Learning Outcomes

1. भाषेतील बारकावे आणि लकबी समजून घेतील.
2. व्यक्तिमत्त्वाच्या उभारणीत भाषेचे महत्त्व समजेल.
3. भाषेच्या सकारात्मक वापराचे महत्त्व समजेल.
4. भाषिक समृद्धीमुळे आत्मविश्वासाने जगाला सामोरे जातील.
5. भाषेतून रोजगाराच्या संधी उपलब्ध होतील.

Unit No.	Course Content/ अभ्यासघटक	Suggested Pedagogy अध्यापनशास्त्र	Hours U/P/L
I	**व्यक्तिमत्त्व संकल्पना** 1.व्यक्तिमत्त्व म्हणजे काय? 2.व्यक्तिमत्त्व विकास घटक a) शारीरीक स्वास्थ्य b)बौद्धिक विकास c)मानसिक आरोग्य d)विविध कौशल्ये (सर्वयापी शिक्षण)	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion	16
II	**विविध भाषिक कौशल्ये** 1.श्रवण कौशल्ये 2.संवाद कौशल्ये 3.वाचन कौशल्ये 4.लेखन कौशल्ये		16
III	**व्यक्तिमत्त्व विकासात भाषेचे स्थान** 1.भाषेतील बारकावे, लकबी, व्याकरण, उच्चारशास्त्र अभ्यासने 2.म्हणी, वाक्प्रचार, सुभाषिते, अवतरणे, प्रसिद्ध काव्यपंक्ती		16

	इत्यादींचा अभ्यास		
IV	**भाषा माध्यमातून रोजगाराच्या संधी** 1. समुपदेशक, पत्रकार, निवेदक, वृत्तनिवेदक, सूत्रसंचालक, मुलाखतकार, रेडिओ जॉकी इत्यादी		16
Recommended Learning Resources			
Print Resources	1. **'व्यक्तिमत्त्व विकास आणि भाषा - डॉ. मधुकर मोकाशी, स्नेहवर्धन प्रकाशन, पुणे** 2. **'व्यक्तिमत्त्व विकास' - दिनेश काळे, विजय प्रकाशन, नागपूर** 3. **'व्यावहारिक मराठी' - (संपा.) डॉ. स्नेहल तावरे, स्नेहवर्धन प्रकाशन, पुणे** 4. **'व्यावहारिक मराठी'- ल.रा.नसिराबादकर, फडके प्रकाशन, कोल्हापूर** 5. **'उपयोजित मराठी' - सत्यजित साळवे, दीपक पवार, अथर्व पब्लिकेशन्स, धुळे**		
Digital Resources	• http://vishwakosh.marathi.gov.in • http://marathivishwakosh.org • http://marathi.pratilipi.com • http://:mr.vikaspedia.in • http://www.maayboli.com • http://esahitya.com • www.bbc.com		

B. A. V Semester

Discipline Specific Course (SEC-4)

Subject:Marathi

Title of the Subject/Discipline: **Marathi**				
Year	III	Course Code:**SEC-4**	Credits	03
Sem.	V	Course Title : Discipline : **मराठी भाषा आणि जाहिरात संहिता लेखन (Marathi Bhasha Aani Jahirat Samhita Lekhan)**	Hours/Week Total	03 48

Formative Assesment Marks:20	Summative Assesment Marks: 30	Total Marks :50

Learning Outcomes

1. विविध माध्यमांसाठी जाहिरात लेखन कौशल्य आत्मसात करतील.
2. भाषाविषयीची विविध कौशल्ये विकसित होतील.
3. विविध माध्यमांची बलस्थाने व मर्यादा कळेल.
4. या कौशल्याचा व्यक्तिमत्त्व विकास व इतर कला/व्यवसाय क्षेत्रातही उपयोग करता येईल.
5. रोजगाराच्या संधी उपलब्ध होतील.

Unit No.	Course Content/ अभ्यासघटक	Suggested Pedagogy अध्यापनशास्त्र	Hours U/P/L
I	**जाहिरात: संकल्पना आणि स्वरूप** 1.जाहिरात म्हणजे काय? 2.जाहिरातीचे घटक	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion	16
II	**मुद्रित माध्यमांसाठी जाहिरातलेखन** 1.मुद्रित माध्यमांसाठी जाहिरातलेखनासाठी जाहिरातीचे स्वरुप 2.वेगवेगळ्या प्रकारच्या जाहिरातींचे नमुने करुन घेणे		16
III	**श्राव्य, दृक्श्राव्य माध्यमांसाठी लेखन** 1.श्राव्य, दृक्श्राव्य माध्यमांसाठी लेखनासाठी जाहिरातीचे लेखन 2.वेगवेगळ्या प्रकारच्या जाहिरातींचे नमुने करुन घेणे		16

Recommended Learning Resources	
Print Resources	1. 'भाषा, साहित्य आणि कौशल्यविकास' - प्रा. डॉ. रंजना कदम, एम. के. इन्फोएज्युटेक, पुणे 2. 'दृक-श्राव्य माध्यमांसाठी लेखन कौशल्ये' - डॉ. भरत हंडीबाग, डॉ. सदाशिक सरकटे, एकज्युकेशन पब्लिकेशन्स औरंगाबाद 3. 'व्यावहारिक मराठी' - (संपा.) डॉ. स्नेहल तावरे, स्नेहवर्धन प्रकाशन, पुणे 4. 'व्यावहारिक मराठी'- ल.रा.नसिराबादकर, फडके प्रकाशन, कोल्हापूर 5. 'उपयोजित मराठी' - सत्यजित साळवे, दीपक पवार, अथर्व पब्लिकेशन्स, धुळे
Digital Resources	• http://vishwakosh.marathi.gov.in • http://marathivishwakosh.org • http://marathi.pratilipi.com • http://:mr.vikaspedia.in • http://www.maayboli.com • http://esahitya.com • www.bbc.com

B. A. VI Semester
Discipline Specific Course (DSC-A12)
Subject:Marathi

Title of the Subject/Discipline: **Marathi**				
Year	III	**Course Code: DSC-A12**	Credits	04
Sem.	VI	Course Title : Discipline : **मराठी साहित्य आणि समीक्षा विचार** **(Marathi Sahitya Aani SamikshaVichar)**	Hours/Week Total	04 64
Formative Assesment Marks:40		Summative Assesment Marks: 60	Total Marks :100	
Learning Outcomes	1. समीक्षा म्हणजे काय समजेल. 2. साहित्याकडे पहाण्याची दृष्टी येईल. 3. साहित्याचा परिपूर्ण आस्वाद घेता येईल. 4. अभिरुचीला वळण लागेल. 5. साहित्य निर्मितीला प्रेरणा मिळेल.			

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	**समीक्षेचा संकल्पना व स्वरूप** 1.समीक्षा म्हणजे काय? 2.समीक्षा शास्त्र की कला?	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion	16
II	**समीक्षेची उद्दिष्ये** 1.समीक्षा व्यवहाराचे महत्त्व 2.समीक्षा साहित्य व्यवहाराला वळण लावते		16
III	**समीक्षेची प्रक्रिया** 1.एखाद्या घटकाची समीक्षा कशी करावी 2.समीक्षेच्या पद्धती		16
IV	**आदर्श समीक्षक** 1.समीक्षकाने आत्मसात करावयाच्या गोष्टी		16

	2.समीक्षकाने कोणत्या गोष्टी टाळाव्यात 3.मराठीतील महत्त्वाचे समीक्षक		
Recommended Learning Resources			
Print Resources	1. साहित्य आणि समीक्षा - वा. ल. कुलकर्णी, ग्रॉप्युलर प्रकाशन, मुंबई 2. 'समीक्षामीमांसा' - गंगाधर पाटील, मौज प्रकाशन, मुंबई 3. 'साहित्य : निर्मिती व समीक्षा' - दि. के. बेडेकर, लोकवाड्.मय गृह, मुंबई 4. 'मराठी समीक्षेची वाटचाल' - गो. म. कुलकर्णी, स्नेहवर्धन पब्लिकेशिंग हाऊस, पुणे 5. 'समीक्षेची नवी रुपे' - गंगाधर पाटील, मॅजेस्टिक प्रकाशन, मुंबई		
Digital Resources	• http://vishwakosh.marathi.gov.in • http://marathivishwakosh.org • http://marathi.pratilipi.com • http://:mr.vikaspedia.in • http://www.maayboli.com • http://esahitya.com • www.bbc.com		

B. A. VI Semester
Discipline Specific Course (DSC-A13)
Subject:Marathi

Title of theSubject/Discipline: **Marathi**				
Year	III	**Course Code: DSC-A13**	Credits	04
Sem.	VI	Course Title : Discipline : **मुद्रित माध्यमांसाठी लेखन कौशल्ये** **(Mudrit Madgyamansathi Lekhan Koushalya)**	Hours/Week Total	04 64

Formative Assesment Marks:40	Summative Assesment Marks: 60	Total Marks :100

Learning Outcomes

1. मुद्रित माध्यमांसाठी लेखन कौशल्य हस्तगत करतील.
2. मुद्रित माध्यमांचे स्वरुप समजेल.
3. मुद्रित माध्यमांत रोजगाराच्या संधी मिळतील.
4. आात्मनिर्भर होतील.
5. लेखनाचे अनेक आयाम लक्षात येतील.

Unit No.	Course Content/ अभ्यासघटक	Suggested Pedagogy अध्यापनशास्त्र	Hours U/P/L
I	**मुद्रित माध्यमांचे स्वरूप आणि महत्त्व** 1.मराठीतील प्रारंभीच्या वृत्तपत्राचे स्वरुप आणि महत्त्व 2. वृत्तपत्राचे बदलते स्वरुप आणि महत्त्व	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion	16
II	**मुद्रित माध्यमांतील लेखनाचे विविध प्रकार** 1.बातमी लेखन 2.वृत्तपत्रलेखन 3.स्तंभलेखन 4.मुलाखत 5.समीक्षात्मक लेखन इत्यादी		16
III	**मुद्रित माध्यमांचे प्रकार** दैनिक, साप्ताहिक, पाक्षिक, मासिक, शन्मासिक, अर्धवार्षिक, प्रासंगिक इत्यादी		16

IV	मुद्रित माध्यमांतील संधी वार्ताहर, संपादक, अनुवादक, स्तंभलेखक, मुद्रक, मुद्रित शोधक, जाहिरात लेखक इत्यादी		16

Recommended Learning Resources	
Print Resources	1. **'प्रसार माध्यमे आणि मराठी भाषा' - संपा. डॉ. भास्कर शेळके, स्नेहवर्धन प्रकाशन, पुणे** 2. **'मुद्रित माध्यमांसाठी लेखन कौशल्ये' - अरुण खोरे, यशवंतराव च.म. मु. विद्यापीठ प्रबोधिनी, पुणे** 3. **'व्यावहारिक मराठी' - संपा. डॉ. स्नेहल तावरे, स्नेहवर्धन प्रकाशन, पुणे** 4. **'व्यावहारिक मराठी' - डॉ. कल्याण काळे, डॉ. दत्तात्रेय पुंडे, निराली प्रकाशन, पुणे** 5. **'उपयोजित मराठी' - डॉ. प्रभाकर जोशी, डॉ. किशोर पाटील, प्रशांत पब्लिकेशन्स, जळगाव** *6.* **माध्यमांसाठी लेखन व संवाद कौशल्य, डॉ. अक्षय घोरपडे, प्रशांत पब्लिकेशन, जळगाव**
Digital Resources	• http://vishwakosh.marathi.gov.in • http://marathivishwakosh.org • http://marathi.pratilipi.com • http://:mr.vikaspedia.in • http://www.maayboli.com • http://esahitya.com • www.bbc.com

B. A. VI Semester
Discipline Specific Course (DSC-A14)
Subject:Marathi

Title of the Subject/Discipline: **Marathi**				
Year	III	**Course Code: DSC-A 14** Course Title : Discipline : **भाषांतरित साहित्य** **'मातीची माणसे'** *अर्चना मिरजकर* *सुविद्या प्रकाशन, सोलापूर* **(Bhashantarit Sahitya)**	Credits	03
Sem.	VI		Hours/Week Total	04 64
Formative Assesment Marks:40		Summative Assesment Marks: 60	Total Marks :100	

Learning Outcomes	1. भाषांतराचे महत्त्व समजेल. 2. विविध भाषेतील भाषांतरीत साहित्याची ओळख होईल. 3. जगभरातील संस्कृतींची ओळख होईल. 4. विविध भाषांमध्ये भाषांतर करतील. 5. भाषांतराचे खूप मोठे क्षेत्र विद्यार्थ्यांना रोजगार/व्यवसाय व संशोधनासाठी खुले होईल.

Unit No.	**Course Content/ अभ्यासघटक**	**Suggested Pedagogy अध्यापनशास्त्र**	**Hours U/P/L**
I	**भाषांतर: संकल्पना व स्वरुप** 1.भाषांतर म्हणजे काय? 2.भाषांतराचे स्वरुप 3.भाषांतराचे महत्त्व 4.भाषांतरातील अडचणी	1. Lecture Method 2. Assignment 3. Individual and group presentation 4. Virtual Mode 5. PPT Presentation 6. Class Seminar 7. Topic Discussion	16
II	**भाषांतराचे प्रकार** 1.शब्दानुवाद 2.भावानुवाद 3.अर्थानुवाद 4.स्वैर अनुवाद 5.मूळ भाषेतील कृतीचा त्याच भाषेत सुलभ अनुवाद		16
III	**'मातीची माणसे'-अर्चना मिरजकरभाषांतरीतकथासंग्रह**		16

	1. 'मातीची माणसे'मधील आशयसूत्रे 2. 'मातीची माणसे'मधील ठळक व्यक्तिरेखा 3. 'मातीची माणसे'मधीलविविध संस्कृतींचे दर्शन		
IV	**'मातीची माणसे'चे वाङ्.मयीन मूल्यमापन** 1. 'मातीची माणसे'चे वेगळेपण 2. 'मातीची माणसे'ची भाषाशैली		16
Recommended Learning Resources			
Print Resources	1. **'भाषांतर' - सदा कऱ्हाडे, लोकवाङ्.मय गृह प्रकाशन, मुंबई** 2.**'भाषांतर चिकित्सा' - डॉ. मधुकर मोकाशी, स्नेहवर्धन पब्लिकेशन हाऊस, पुणे** 3. **'भाषांतर आणि भाषा' - डॉ. विलास सारंग, मौज प्रकाशन, पुणे** 4. **'भाषांतर शास्त्र की कला' - प्रा. म. वि. फाटक, कु. रजनी ठकार, वरदा बुक्स, पुणे**		
Digital Resources	• http://vishwakosh.marathi.gov.in • http://marathivishwakosh.org • http://marathi.pratilipi.com • http://:mr.vikaspedia.in • http://www.maayboli.com • http://esahitya.com • www.bbc.com		

B. A. VI Semester
Internship/Project
Subject : Marathi

Internship for Graduate Programme (As per UGC & AICTE)

Course Title	Internship/Project (Discipline Specific)
No. of contact hours	90
No. of credits	02
Method of Evaluation	Presentations/Report Submission/Activity etc.

- इंटर्नशिप 04-06 आठवड्यांच्या कालावधीसह 90 तास (02 क्रेडिट्स) शिस्तबद्ध असेल.
- इंटर्नशिप पूर्णवेळ/अर्धवेळ असू शकते. (सेमिस्टरच्या सुट्ट्यांमध्ये पूर्णवेळ आणि शैक्षणिक सत्रात अर्धवेळ.)
- इंटर्नशिप मार्गदर्शक/पर्यवेक्षक 6व्या सेमिस्टरमध्ये जास्तीत जास्त 20 तासाच्या कामाचे वाटप करु शकतात.
- विद्यार्थ्याने इंटर्नशिप पूर्ण करण्यासाठी इंटर्नशिपचाअंतिम अहवाल (इंटर्नशिपचे 90 तास) मार्गदर्शकांकडे सादर केला पाहिजे.
- तपशीलवार मार्गदर्शक तत्त्वे आणि स्वरुप विद्यापीठांकडून स्वतंत्रपणे UGC आणि AICTEच्या मार्गदर्शक तत्त्वानुसार विहित नमुन्यात तयार केले जातील.

Project (प्रकल्प)

विद्यार्थ्याने मराठी, भाषा, साहित्य, रंगभूमी, संगीत, मराठी चित्रपट, लोकसाहित्य, मराठी संस्कृती, परंपरा, आचरण, आर्थिक, सामाजिक, भौगोलिक, राजकीय, वैज्ञानिक सुधारणा, स्थळमहात्म्य, पुराण, जीवनचरित्र, आत्मचरित्र, आदिवासी समुदायाचा अभ्यास यापैकी एका विषयाला अनुसरुन 40-60 पृष्ठसंख्या होईल इतका प्रबंध प्राध्यापकांच्या मार्गदर्शनाखाली लिहून, युनिकोडमध्ये टाईप करुन, A-4साईजच्या पेपरवर प्रिंटकाढून, डिलक्स बायडिंग करुन त्याच्या03 प्रती सॉफ्ट कॉफीसोबत लिखित परिक्षेच्या पंधरा दिवस आधी महाविद्यालयाकडे/विद्यापीठाकडे सादर करावयाच्या आहेत. महाविद्यालयातील प्राध्यापकांनी विद्यार्थ्यांना यासंदर्भात मार्गदर्शन करावयाचे आहे. विद्यापीठाकडून आलेल्या सूचना/परिपत्रके तसेच नियमानुसार अंक भरावयाचे आहेत. (40 अंकासाठी प्रबंध आणि 10 अंकांची मौखिक परीक्षा घेण्यात यावी.)

Details of Formative Assessment (IA) for DSC:40% weightage for total marks

Type of Assessment	Weightage	Duration	Commencement
Written Test-1	10%	1 hr	8th Week
Written Test-2	10%	1 hr	12th Week
Seminar	10%	10 minutes	--
Case study/Assignment/Field work/Project work/Activity	10%	-------	--
Total	40% of the maximum marks alloted for the paper		

General Pattern of Theory Question Paper for DSC (60 Marks for Semester End Examination With 02 Hours Duration)

Q. No.	Particulars		Marks	Total
Theory				
I	Objective Type Questions	10 out of 12	02	20
II	Short Answer Questions	2 out of 4	05	10
III	Essay Type Answer Questions	2 out of 4	15	30
Total				**60**

Details of Formative Assessment (IA) for SEC:40% weightage for total marks

Type of Assessment	Weightage	Duration	Commencement
Written Test-1	5%	1 hr	8th Week
Written Test-2	5%	1 hr	12th Week
Seminar	5%	10 minutes	--
Case study/Assignment/Field work/Project work/Activity	5%	-------	--
Total	20% of the maximum marks alloted for the paper		

General Pattern of Theory Question Paper for SEC (30 Marks for Semester End Examination With 01 Hour Duration)

Q. No.	Particulars		Marks	Total
Theory				
I	Short Answer Questions	2 out of 4	05	10
II	Essay Type Answer Questions	2 out of 4	10	20
Total				**30**

RANI CHANNAMMA UNIVERSITY, BELAGAVI

VIDYASANGAMA, PB. ROAD, NH-4 BELAGAVI

DEPARTMENT OF MARATHI

Board of Studies in Marathi (U.G.)

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   Department of Studies and Research in Marathi, R.C.U, Belagavi

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3. **Dr. Gopal Mahamuni,Mob:8073169971 -Member**
   Dept. of Marathi, Smt. K. A. C. College, Bedkihal

4. **Shri. Parasu D. Gawade (Co-Opt), Mob:9657697331**
   Dept. of Marathi, S. K. E. Society's R. P. D. College of Arts & Commerce, Belgavi

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RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS
as per the Choice Based Credit System (CBCS)
designed in accordance with
Learning Outcomes - Based Curriculum Framework (LOCF)
of National Education Policy (NEP) 2020
for Undergraduate Program in

ENGLISH

(BA/B.Sc/B.Com/BSW/BBA/BCA and other faculties)

w.e.f.

Academic Year 2021-22 and onwards

Board of Studies: English (UG)

01	**Prof. Vijay Nagannawar** Department of Studies in English, Rani Chanamma University, Belagavi.	Chairman
02	**Smt. Asha Kattimani** Department of English, JSS College, Gokak.	Member
03	**Smt. Vijayalakshmi Tirlapur** Department of English, Maratha Mandal College, Belagavi.	Member
04	**Dr. M. M. Hurali** Department of English, KLE's B. K. College, Chikkodi.	Subject Expert
05	**Dr. S. B. Biradar** Department of English, SVM College, Ilkal.	Subject Expert

Terminology Used

DSC - Discipline Specific Core

DSE - Discipline Specific Elective

OE – Open Elective

AECC – Ability Enhancement Compulsory Course

AEC – Ability Enhancement Course

SEC - Skill Enhancement Course

L – Lecturing

T – Tutorial

P – Practical

IA – Internal Assessment

SEE – Sem End Exam

CIE – Continuous Internal Evaluation

SB – Skilled Based

VB – Value Based

PREAMBLE

National Education Policy 2020 aims at equipping students with knowledge, skills, values, leadership qualities and initiates them for lifelong learning. It is in tune with the global education development agenda reflected in the Goal 4 (SDG4) of the 2030 Agenda for Sustainable Development, adopted by India in 2015, which seeks to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030. And also National Education Policy aims at quality in Higher Education enabling students with personal accomplishment and enlightenment, constructive public engagement, and productive contribution to the society.

As a medium of communication, learning language gains significance. National Education Policy 2020 emphasizes language study and promotion of languages through translation and interpretation. The twin objectives of language as medium of communication and as career of culture and values need to be embedded in the four years multidisciplinary undergraduate programs. The language and the study of language and linguistics are central to the educational eco system. The importance of language as medium of communication – personal, social, official, professional, business and commerce need to be emphasized for lucid and concise expression. The communication skills are vital in the creation and dissemination of all domains of knowledge, and to connect all disciplines. Teaching and learning of Receptive and Productive skills - Listening, Speaking, Reading and Writing (LSRW) are to be effectively taught and studied in the two years language study of the four year under graduate multidisciplinary program. The phonological, syntactical and semantic aspects of the language are to be imparted in the curriculum framework.

In this connection, Curriculum, Pedagogy and Assessment form the foundation of quality learning. Relevant curriculum, engaging pedagogy, continuous formative assessments and adequate student support result in productive learning. The curriculum has to align with the latest knowledge requirements and shall meet specified learning outcomes. High-quality pedagogy is necessary to successfully impart the curricular material to support students; pedagogical practices determine the learning experiences that are provided to students– thus directly influencing learning outcomes.

The assessment methods shall be scientific and will test the application of knowledge. Efforts are being made in providing a holistic approach towards value-based language learning which equips the learner with receptive as well as productive skills.

PROGRAM OUTCOMES

By the end of the program the students will be able to:

1. Communicate effectively and appropriately.
2. Use English effectively for the purpose of study across the curriculum.
3. Develop interest in the appreciation of Literature.
4. Acquaint with communication skills.
5. Inculcate life skills and human values
6. Think creatively and critically
7. Expand emotional intelligence

The curriculum tries to align with the latest knowledge requirements. It also tries to meet specified learning outcomes. High-quality pedagogy is necessary to successfully impart the curricular material to support students. The teachers of English need to develop technological skills to impart quality education. Pedagogy involves Lecture (L) + Tutorial (T) model. Generally, the subjects without practical involve L+T model wherever necessary. The pedagogical practices determine the learning experiences and their outcomes that are provided to students– thus directly influencing learning outcomes. The assessment methods shall be scientific and will test the application of knowledge. At the end of the course, the students will be well-versed both in oral and written communication. They study cutting edge issues related to language and literature in all the respective courses prescribed by the expert committee. The wide range of topics and components help students to gain the learning outcomes effectively. The entire course structure tries to fulfill the needs of NEP 2020 having contemporary relevance and develop critical and creative thinking. Course outcomes promote a holistic approach towards value-based language learning which equips the learner with receptive as well as productive skills

PROGRAM STRUCTURE

Inputs for the Revisions to be made in the UG Curriculum -Prepared and circulated by Dr Ashok A D'Souza, Chairman, 'NEP 2020 Implementation Committee', RCUB on 16.10.2021.

Appendix A

A1. Model Programme Structure for Bachelor of Arts (Basic/Hons.) Programme with Economics as Major and History as Minor (subjects without practical)

Sem.	Discipline Core (DSC) (Credits) (L+T+P)	Discipline Elective (DSE) / Open Elective (OE) (Credits) (L+T+P)	Ability Enhancement Compulsory Courses (AECC), Languages (Credits) (L+T+P)		Skill Enhancement Courses (SEC)			Total Credits
					Skill based (Credits) (L+T+P)	Value based (Credits) (L+T+P)		
I	History C1(3), C2(3) Economics C1(3), C2(3)	OE-1 (3)	L1-1(3), L2-1(3) (4 hrs each)		SEC-1: Digital Fluency (2) (1+0+2)	Yoga (1) (0+0+2)	Health & Wellness (1) (0+0+2)	25
II	History C3(3), C4(3) Economics C3(3), C4(3)	OE-2 (3)	L1-2(3), L2-2(3) (4 hrs each)	Environmental Studies (2)		Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Exit option with Certificate (with the completion of courses equivalent to a minimum of 48 credits)								
III	History C5(3), C6(3) Economics C5(3 C6(3)	OE-3 (3)	L1-3(3), L2-3(3) (4 hrs. each)		SEC-2: Artificial Intelligence or some other SEC (2) (1+0+2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
IV	History C7(3), C8(3) Economics C7(3), C8(3)	OE-4 (3)	L1-4(3), L2-4(3) (4 hrs. each)	Constitution of India (2)		Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Exit option with Diploma in Arts (with the completion of courses equal to a minimum of 96 credits) OR continue studies with Major and Minor								
V	History C9(4) Economics C9(4) Economics C10(4)	Economics E-1 (3) Vocational-1 (3)			SEC-3: Cyber Security or some other SEC (2) (1+0+2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	22
VI	History C10(4) Economics C11(4) Economics C12(4)	Economics E-2 (3) Vocational-2 (3) Internship (2)			SEC-4: Societal Communication (2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	24
Exit option with Bachelor of Arts Degree, B.A. (with the completion of courses equal to a minimum of 140 credits) or continue studies with the Major								
VII	Economics C13(4) Economics C14(4) Economics C15(4)	Economics E-3 (3) Vocational-3 (3) Res. Methodology (3)						21
VIII	Economics C16(3) Economics C17(3) Economics C18(3)	Economics E-4 (3) Vocational-4 (3) Research Project (6)*						21
Award of Bachelor of Arts Degree with Honours, B.A. (Hons.) in Economics (with the completion of courses equal to a minimum of 180 credits)								

*In lieu of the research Project, two additional elective papers/ Internship may be offered.

A2. Model Programme Structure for Bachelor of Arts (Basic/Hons.) Programme with both Economics and History as Majors subjects without practical, in the 3rd year of the Programme

Sem.	Discipline Core (DSC) (Credits) (L+T+P)	Discipline Elective (DSE) / Open Elective (OE) (Credits) (L+T+P)	Ability Enhancement Compulsory Courses (AECC), Languages (Credits) (L+T+P)		Skill Enhancement Courses (SEC)			Total Credits
					Skill based (Credits) (L+T+P)	Value based (Credits) (L+T+P)		
I	History C1(3), C2(3) Economics C1(3), C2(3)	OE-1 (3)	L1-1(3), L2-1(3) (4 hrs each)		SEC-1: Digital Fluency (2) (1+0+2)	Yoga (1) (0+0+2)	Health & Wellness (1) (0+0+2)	25
II	History C3(3), C4(3) Economics C3(3), C4(3)	OE-2 (3)	L1-2(3), L2-2(3) (4 hrs each)	Environmental Studies (2)		Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Exit option with Certificate (with the completion of courses equal to a minimum of 48 credits)								
III	History C5(3), C6(3) Economics C5(3 C6(3)	OE-3 (3)	L1-3(3), L2-3(3) (4 hrs. each)		SEC-2: AI or some other SEC (2) (1+0+2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G/ Cultural (1) (0+0+2)	25
IV	History C7(3), C8(3) Economics C7(3), C8(3)	OE-4 (3)	L1-4(3), L2-4(3) (4 hrs. each)	Constitution of India (2)		Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Exit option with Diploma in Arts (with the completion of courses equal to a minimum of 96 credits) OR continue studies with both the subjects as Majors								
V	History C9(4), C10(4) Economics C9(4), Economics C10(4)	Vocational-1 (3)			SEC-3: Cyber Security or some other SEC(2) (1+0+2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	23
VI	History C11(4), C12(4) Economics C11(4), Economics C12(4)	Vocational-2 (3) Internship (2)			SEC-4: Societal Communication (2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Exit with Bachelor of Arts Degree, B.A. in History and Economics (with the completion of courses equal to a minimum of 140 credits) or continue studies								
VII	History C13(4) History C14(4) History C15(4)	History E-1 (3) Vocational-3 (3) Res. Methodology (3)						21
VIII	History C16(3) History C17(3) History C18(3)	History E-2 (3) Vocational-4 (3) Research Project (6)*						21
Award of Bachelor of Arts Degree with Honours, B.A. (Hons.) in History (with the completion of courses equal to a minimum of 180 credits)								

*In lieu of the research Project, two additional elective papers/Internship may be offered.

A3. Model Programme Structure for Bachelor of Arts (Basic/Hons.) Programme with Economics as Major (subject without practical) and Physics as Minor (subject with practical) in the 3rd year of the Programme

Sem.	Discipline Core (DSC) (Credits) (L+T+P)	Discipline Elective (DSE) / Open Elective (OE) (Credits) (L+T+P)	Ability Enhancement Compulsory Courses (AECC), Languages (Credits) (L+T+P)		Skill Enhancement Courses (SEC)			Total credits
					Skill based (Credits) (L+T+P)	Value based (Credits) (L+T+P)		
I	Economics C1(3), C2(3) Physics C1(4+2)	OE-1 (3)	L1-1(3), L2-1(3) (4 hrs each)		SEC-1: Digital Fluency (2) (1+0+2)	Yoga (1) (0+0+2)	Health & Wellness (1) (0+0+2)	25
II	Economics C3(3), C4(3) Physics C2(4+2)	OE-2 (3)	L1-2(3), L2-2(3) (4 hrs each)	Environmental Studies (2)		Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Exit option with Certificate (with the completion of courses equal to a minimum of 48 credits)								
III	Economics C5(3), C6(3) Physics C 3(4+2)	OE-3 (3)	L1-3(3), L2-3(3) (4 hrs. each)		SEC-2: AI or some other SEC (2) (1+0+2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
IV	Economics C7(3), C8(3) Physics C4(4+2)	OE-4 (3)	L1-4(3), L2-4(3) (4 hrs. each)	Constitution of India (2)		Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Exit option with Diploma in Arts (with the completion of courses equal to a minimum of 96 credits) OR continue studies with major and minor								
V	Economics C9(4), Economics C10(4) Physics C 5(3+2),	Economics, E-1 (3) Vocational-1 (3)			SEC-3: Cyber Security or some other SEC(2) (1+0+2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	23
VI	Economics C11(4), Economics C12(4) Physics C 6(3+2),	Economics, E-2 (3) Vocational-2 (3) Internship (2)			SEC-4: Professional Communication (2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Exit option with Bachelor of Arts, B.A Basic Degree (with the completion of courses equal to a minimum of 140 credits) or continue studies with the Major								
VII	Economics C13(4) Economics C14(4) Economics C15(4)	Economics, E-3 (3) Vocational-3 (3) Res. Methodology (3)						21
VIII	Economics C16(3) Economics C17(3) Economics C18(3)	Economics, E-4 (3) Vocational-4 (3) Research Project (6)*						21
Award of Bachelor of Arts Degree with Honours, B.A. (Hons), in Economics (with the completion of courses equal to a minimum of 180 credits)								

*In lieu of the research Project, two additional elective papers/Internship may be offered.

B3. Model Programme Structure for Bachelor of Science (Basic/Hons.) Programme with Physics as Major (subject with practical) and English as Minor (subject without practical), in the 3rd year of the programme

Sem.	Discipline Core (DSC) (Credits)	Discipline Elective (DSE) / Open Elective (OE) (Credits)	Ability Enhancement Compulsory Courses (AECC) - Languages (Credits) (L+T+P)		Skill Enhancement Courses (SEC)			Total credits
					Skill based (Credits) (L+T+P)	Value based (Credits) (L+T+P)		
I	Physics C1(4+2) Engiish C1(3), C2(3)	OE-1 (3)	L1-1(3), L2-1(3) (4 hrs each)		SEC-1: Digital Fluency (2) (1+0+2)	Yoga (1) (0+0+2)	Health & Wellness (1) (0+0+2)	25
II	Physics C2(4+2) English C 3(3), C4(3)	OE-2 (3)	L1-2(3), L2-2(3) (4 hrs each)	Environmental Studies (2)		Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Exit option with Certificate (with the completion of courses equal to a minimum of 48 credits)								
III	Physics C3(4+2) English C5(3), C6(3)	OE-3 (3)	L1-3(3), L2-3(3) (4 hrs. each)		SEC-2: AI or some other SEC(2)(1+0+2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
IV	Physics C4(4+2) English C 7(3), C8(3)	OE-4 (3)	L1-4(3), L2-4(3) (4 hrs. each)	Constitution of India (2)		Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Exit option with Diploma in Science (with the completion of courses equal to a minimum of 96 credits) or continue studies with Physics as Major								
V	Physics C5(3+2), Physics C6(3+2) English C9(4)	Physics, E-1 (3) Vocational-1 (3)			SEC-3: Cyber Security or some other SEC(2) (1+0+2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	24
VI	Physics C7(3+2), Physics C8(3+2) English C10(4)	Vocational-2 (3) Internship (2)			SEC-4: Professional Communication (2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	23
Exit option with Bachelor of Science Degree, B. Sc. (with the completion of courses equal to a minimum of 140 credits) or continue studies								
VII	Physics C9(3+2), Physics C10(3+2) Physics C11(3)	Physics, E-2 (3) Physics, E-3 (3) Res. Methodology (3)						22
VIII	Physics C12(3), Physics C13(3), Physics C14(3)	Physics, E-4 (3) Physics, E-5 (3) Research Project (6)*						21
Award of Bachelor of Science Degree with Honours, B.Sc. (Hons) in Physics (with the completion of courses equal to a minimum of 180 credits)								

*In lieu of the research Project, two additional elective papers/Internship may be offered.

COURSE STRUCTURE

SEMESTER – I							
Sl. No.	**Course Code**	**Title of the Course**	**Teaching Hrs/Week (L+T+P)**	**Credits**	**Marks**		**Total**
					SEE	**CIE**	
1	ENGDSCA1	Introduction to Literature	3+0+0	3	60	40	100
2	ENGDSCA2	Indian Writing in English Part- I	3+0+0	3	60	40	100
3	ENGOE01	Functional English, Grammar and Study Skills	3+0+0	3	60	40	100
4	BAENG AEC L2-1	Generic English – I	4+0+0	3	60	40	100
5	BSCENG AEC L2-1	Generic English – I	4+0+0	3	60	40	100
6	BCOMENG AEC L2-1	Generic English – I	4+0+0	3	60	40	100

SEMESTER – II							
Sl. No.	**Course Code**	**Title of the Course**	**Teaching Hrs/Week (L+T+P)**	**Credits**	**Marks**		**Total**
					SEE	**CIE**	
1	ENGDSCA3	Introduction to Phonetics and Linguistics	3+0+0	3	60	40	100
2	ENGDSCA4	Indian Writing in English Part – II (Post-Independence)	3+0+0	3	60	40	100
3	ENGOE02	Critical Thinking	3+0+0	3	60	40	100
4	BAENG AEC L2-2	Generic English – II	4+0+0	3	60	40	100
5	BSCENG AEC L2-2	Generic English – II	4+0+0	3	60	40	100
6	BCOMENG AEC L2-2	Generic English – II	4+0+0	3	60	40	100

PEDAGOGY:

Effective learning requires appropriate curriculum, an apt pedagogy, continuous formative assessment and adequate student support. The intention is to contextualize curriculum through meaningful pedagogical practices, which determine learning experiences directly influencing learning outcomes. Active, cooperative, collaborative and experiential learning pedagogies are some of the examples. Use

of technology in creating learning environment that connects learners with content, peers and instructors all through the learning process respecting the pace of learners is need of the hour.

a) Classroom processes must encourage rigorous thinking, reading and writing, debate, discussion, peer learning and self-learning.

b) The emphasis is on critical thinking and challenge to current subject orthodoxy and develop innovative solutions. Curricular content must be presented in ways that invite questioning and not as a body of ready knowledge to be assimilated or reproduced. Faculty should be facilitators of questioning and not authorities on knowledge.

c) Classroom pedagogy should focus on the 'how' of things i.e. the application of theory and ideas. All courses including social sciences and humanities should design projects and practical to enable students get relevant hands-on experiences.

d) Learning must be situated in the Indian context to ensure that there is no sense of alienation from their context, country and culture.

e) Classroom processes must address issues of inclusion and diversity since students are likely to be from diverse cultural, linguistic, socio-economic and intellectual backgrounds.

f) Cooperative and peer-supported activities must be part of empowering students to take charge of their own learning.

g) Faculty will have the freedom to identify and use the pedagogical approach that is best suited to a particular course and student. Pedagogies like PBL (Problem / Project Based Learning), Service Learning be brought into practice as part of curriculum. Experiential learning in the form of internship with a specified number of credits is to be made mandatory.

PROGRAM ARTICULATION MATRIX

This matrix lists only for the core courses. Core courses are essential to earn the degree in that discipline/subject. They include courses such as theory, laboratory, project, internships etc.

SEM	Name of the Course: DSC	Program outcomes that the course addresses (not more than3 per course)	Pre Requisite	Pedagogy	Assessment
	Introduction to Literature ENGDSCA1	1.able to define, discuss and analyze literary terms and concepts of literature and its works 2. Identify structural elements of works of poetry, fiction, and drama, and analyze how those elements help create specific meanings and effects. 3. Compare works of literature in terms of theme, structure, and use of literary devices	NA	Lectures Seminars Group Discussions Brain Storming	40 marks FA 60 Marks SA

I	Indian Writing in English Part 1 ENGDSCA2	1. trace and understand the development of Indian English Literature 2. Compare works of literature in terms of theme, structure, and use of literary devices 3. develop critical thinking on the works and authors	NA	Lectures Seminars Group Discussions Brain Storming	40 marks FA 60 Marks SA
II	Introduction to Phonetics and Linguistics ENGDSCA3	1. Acquire the knowledge of Phonetics and its concepts 2. Gain an understanding of Linguistics and its concepts 3.	NA	Lectures Seminars Group Discussions Brain Storming	40 marks FA 60 Marks SA
	Indian Writing in English Part II Post Independent Period ENGDSCA4	1. trace and understand the development of Indian English Literature 2. Compare works of literature in terms of theme, structure, and use of literary devices 3. develop critical thinking on the works and authors	NA	Lectures Seminars Group Discussions Brain Stroming	40 marks FA 60 Marks SA

CONTINUOUS FORMATIVE EVALUATION/ INTERNAL ASSESSMENT:

Total marks for each course shall be based on continuous assessments and semester-end examinations. As per the decision taken at the Karnataka State Higher Education Council, it is necessary to have uniform pattern of 40 : 60 for IA and Semester End theory examinations respectively and 50 : 50 for IA and Semester End practical examinations respectively, in all the Universities, their Affiliated and Autonomous Colleges.
Total Marks for each course = 100%
Continuous assessment (C1) = 20% marks
Continuous assessment (C2) = 20% marks
Semester End Examination (C3) = 60% marks.

EVALUATION PROCESS OF IA MARKS SHALL BE AS FOLLOWS:

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the

course/s and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of remaining 50 percent of syllabus of the courses of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the University for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator / Principal. The Program Coordinator / Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be stamped by the concerned department using their department seal at the time of conducting tests / assignment / work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under.

Activities	**C1**	**C2**	**Total Marks**
Session Test	10% marks	10% marks	20%
Seminars/Presentations/Activity	10% marks		10%
Case study /Assignment / Field work / Project work etc.		10% Marks	10%
Total	20% marks	20% marks	40%

• For practical course of full credits, Seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance. (the ratio is 50%: 50%)

• Conduct of Seminar, Case study / Assignment, etc. can be either in C1 or in C2 component at the convenience of the concerned teacher.

COURSE ARTICULATION MATRIX

Course Outcomes (COs) / Program Outcomes (POs)	DSC1	DSC2	DSC3	DSC4	DSC5	DSC6	OE 1	OE 2	SEC SB	SEC VB
Disciplinary Knowledge	✓	✓					✓	✓	✓	✓
Communication Skills	✓	✓					✓	✓	✓	✓
Critical Thinking	✓	✓					✓	✓	✓	✓
Problem Solving	✓	✓					✓	✓	✓	✓
Analytical Reasoning	✓	✓					✓	✓	✓	✓
Cooperation and Team Work	✓	✓					✓	✓	✓	✓
Reflective Thinking	✓	✓					✓	✓	✓	✓
Self-motivated Learning	✓	✓					✓	✓		
Diversity Management and Inclusive Approach	✓	✓					✓	✓	✓	
Moral and Ethical Awareness/Reasoning	✓	✓					✓	✓	✓	
Lifelong Learning	✓	✓					✓	✓	✓	✓

COURSE WISE STRUCTURE

Semester I

Bachelor of Arts (Basic/Hons) Programme/ Bachelor of Performing Arts Programme/ Bachelor of Social Works, B.S.W.
(Subjects without practical/One subject without practical and one subject with practical)

Year	2021	**Course Code: BAENGAECL2-1**	**Credits**	3
Sem.	I	**Course Title: Generic English - I**	**Hours**	4
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60		
Course Outcomes	**At the end of the course the student should be able to:** 1. Acquire the LSRW (Listening, Speaking, Reading, and Writing) skills. 2. Learn to appreciate literary texts. 3. Obtain the knowledge of literary devices and genres. 4. Acquire the skills of creativity to express one's experiences. 5. Know how to use digital learning tools. 6. Be aware of their social responsibilities. 7. Develop critical thinking skills. 8. Develop gender sensitivity 9. Increase reading speed, analytical skills and develop presentation skills. 10. Become employable with requisite professional skills, ethics and values			
Unit No.	**Course Content**		**Suggested Pedagogy**	**60 Hours**
Unit I	1. Spoken English and Broken English - G. B. Shaw 2. The Curd Seller – Masti Venkatesh Iyengar 3. The Night Train at Deoli – Ruskin Bond		Lectures Tutorials Group Discussion	15 hrs
Unit II	1. Where the Mind is without Fear - Rabindranath Tagore 2. True Love - William Shakespeare 3. Don't Quit - Edgar Albert Guest		Lectures Tutorials Group Discussion	9 hrs
Unit III	Introducing One self, Introducing others, Requests, Offering help, Congratulating, Enquiries, Seeking permission Giving instructions to do a task,		Lectures Tutorials Group Discussion Role Play	16 hrs

Unit IV	1. Word class (Nouns, Adjectives, Verbs, and Adverbs) 2. Use of Articles 3. Use of Prepositions (Place, Time, Position) 4. Asking Yes/No Questions, 5. Asking Wh. Questions 6. Using Indirect Questions for Polite English 7. Asking Tag Questions: for affirmation 8. Asking Negative Questions: for Confirmation.	Lectures Tutorials Group Discussion	20 hrs
Recommended Learning Resources			
Print Resources	1. Vijay F Nagannawar and S. B. Biradar ed. New Horizon, Textbook prescribed for B. A. and BSW Programme under CBCS, Rani Channamma University, Belagavi, 2021. 2. Vijay F Nagannawar and S. B. Biradar ed English Stars, Textbook prescribed for BCom and BBA Programme under CBCS, Rani Channamma University, Belagavi, 2021. 3. Dr. S. B. Biradar and Prof. Vijay F Nagannawar ed. English Gems, Textbook prescribed for B. Sc. and BCA Programme under CBCS, Rani Channamma University, Belagavi, 2021. 4. Quirk Randolph, Sidney Greenbaum, Geoffrey Leech &Jan Svartvik. A Comprehensive Grammar of the English Language General Grammar. Longman. 5. Herring, Peter. Complete English Grammar Rules. Create space Independent Pub, California, 2016. 6. Jain Charul, Pradyumnasinh Raj & Yunus Karbharj. English Skills for Academic Purposes. Macmillan Education. London, 2017		
Digital Resources	http://orelt.col.org/module/unit/4-grammar-improving-composition-skills https://www.academia.edu/26724441/A_Concise_Grammar_for_English_Language_Teachers. https://www.efluniversity.ac.in/EnglishPro.php https://www.britishcouncil.in/		

Question Paper Pattern

I.	10 objective questions 5 from Unit I and 5 from Unit II	10x01=10
II.	01 essay type question out of 2 from Unit I	01x10=10
III.	01 essay type question out of 2 from Unit II	01x10=10
IV.	02 questions out of 4: from Unit III	02x05=10
V.	04 Language Activity out of 6: from Unit IV	04x05=20
Total		**60**

Semester II

Bachelor of Arts (Basic/Hons) Programme/ Bachelor of Performing Arts Programme/ Bachelor of Social Works, B.S.W.
(Subjects without practical/One subject without practical and one subject with practical)

Year	2021	**Course Code: BAENGAECL2-2**	**Credits**	3
Sem.	II	**Course Title: Generic English – II**	**Hours**	4
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60		
Course Outcomes	At the end of the course the student should be able to: 1. Acquire the LSRW (Listening, Speaking, Reading, and Writing) skills. 2. Learn to appreciate literary texts. 3. Obtain the knowledge of literary devices and genres. 4. Acquire the skills of creativity to express one's experiences. 5. Know how to use digital learning tools. 6. Be aware of their social responsibilities. 7. Develop critical thinking skills. 8. Develop gender sensitivity 9. Increase reading speed, analytical skills and develop presentation skills. 10. Become employable with requisite professional skills, ethics and values			
Unit No.	**Course Content**		**Suggested Pedagogy**	**60 Hours**
Unit I	1. The Challenge of Everest – H. P. S. Ahluwalia 2. Zero Budget Natural Farming - Shibu 3. Milka Singh: The Flying Sikh – Sonia Sanwalka		Lectures Tutorials Group Discussion	15 hrs
Unit II	1. Still I Rise - Maya Angelou 2. The Quality of Mercy – William Shakespeare 3. Good-bye Party for Miss Pushpa T.S. – Nissim Ezekiel		Lectures Tutorials Group Discussion	9 hrs
Unit III	1. Reading passage to give a Title 2. Reading for Vocabulary building – synonyms, homonyms, homophones, suffixes, prefixes, collocations, often confused words. 3. Reading passages on Specific fields for Vocabulary building. 4. Barriers for effective listening 1hr Chapter		Lectures Tutorials Group Discussion Role Play	16 hrs

	5. Types of Listening 6. Techniques to improve listening skills. 7. Listening Activities - listening to pre-recorded audios & movies.		
Unit IV	1. Reported Speech 2. Dialogue writing 3.Verbal Communication and Non-verbal communication 4. Summarizing 5. Speech Writing 6. Essay Writing 7. Translation Kannada into English and English into Kannada 8. Short Paragraphs based on themes with a message on nation, freedom fighters, and achievers. 15 short paragraphs with 5 – 6 sentences as model paragraphs. (a) Paragraph Translations from Kannada to English (b) Paragraph Translations from English to Kannada	Lectures Tutorials Group Discussion	20 hrs
Recommended Learning Resources			
Print Resources	1. Vijay F Nagannawar and S. B. Biradar ed. New Horizon, Textbook prescribed for B. A. and BSW Programme under CBCS, Rani Channamma University, Belagavi, 2021. 2. Vijay F Nagannawar and S. B. Biradar ed English Stars, Textbook prescribed for BCom and BBA Programme under CBCS, Rani Channamma University, Belagavi, 2021. 3. S. B. Biradar and Prof. Vijay F Nagannawar ed. English Gems, Textbook prescribed for B. Sc. and BCA Programme under CBCS, Rani Channamma University, Belagavi, 2021. 4. Quirk Randolph, Sidney Greenbaum, Geoffrey Leech &Jan Svartvik. A Comprehensive Grammar of the English Language General Grammar. Longman. 5. Herring, Peter. Complete English Grammar Rules. Create space Independent Pub, California, 2016. 6. Jain Charul, Pradyumnasinh Raj & Yunus Karbharj. English Skills for Academic Purposes. Macmillan Education. London, 2017 7. Geoffrey Leech and Svartik. Communicative Grammar of English, Pearson 8. Geoffrey Leech. English Grammar for Today, Palgrave 9. Prasad P.The Functional Aspects of Communicative Skills.		
Digital Resources	http://orelt.col.org/module/unit/4-grammar-improving-composition-skills https://www.academia.edu/26724441/A_Concise_Grammar_for_English_Language_Teachers. https://www.efluniversity.ac.in/EnglishPro.php https://www.britishcouncil.in/		

Question Paper Pattern

I.	10 objective questions 5 from Unit I and 5 from Unit II	10x01=10
II.	01 essay type question out of 2 from Unit I	01x10=10
III.	01 essay type question out of 2 from Unit II	01x10=10
IV.	02 questions out of 4: from Unit III	02x05=10
V.	04 Language Activity out of 6: from Unit IV	04x05=20
Total		**60**

Semester I

Bachelor of Science (Basic/Hons) Programme/ Bachelor of Home Science Programme/ Degree in Fashion and Apparel Design/ Interior Design and Decoration/ Bachelor of Science in Clinical Nutrition (Basic/Hons.) with Clinical Nutrition / Bachelor of Computer Applications (Basic/Hons.) with Computer Applications .
(Both Subjects with practical/One subject without practical and one subject with practical)

Year	2021	**Course Code: BSCENGAECL2-1**	**Credits**	3
Sem.	I	**Course Title: Generic English – I**	**Hours**	4
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60		
Course Outcomes	At the end of the course the student should be able to: 1. Acquire the LSRW (Listening, Speaking, Reading, and Writing) skills. 2. Learn to appreciate literary texts. 3. Obtain the knowledge of literary devices and genres. 4. Acquire the skills of creativity to express one's experiences. 5. Know how to use digital learning tools. 6. Be aware of their social responsibilities. 7. Develop critical thinking skills. 8. Develop gender sensitivity 9. Increase reading speed, analytical skills and develop presentation skills. 10. Become employable with requisite professional skills, ethics and values			
Unit No.	**Course Content**		**Suggested Pedagogy**	**60 Hours**
Unit I	1. Water the Elixir of life – C. V. Raman 2. Spoken English and Broken English - G. B. Shaw 3. Tiger in the Tunnel - Ruskin Bond		Lectures Tutorials Group Discussion	15 hrs
Unit II	1. Vachana 820 (Speaking of Shiva) by A. K. Ramanujan 2. To India My Native Land – Henry Derozio 3. The Road not Taken by Robert Frost		Lectures Tutorials Group Discussion	9 hrs
Unit III	Introducing One self, Introducing others, Requests, Offering help, Congratulating, Enquiries, Seeking permission Giving instructions to do a		Lectures Tutorials	16 hrs

	task,	Group Discussion Role Play	
Unit IV	1. Word class (Nouns, Adjectives, Verbs, and Adverbs) 2. Use of Articles 3. Use of Prepositions (Place, Time, Position) 4. Asking Yes/No Questions, 5. Asking Wh Questions 6. Using Indirect Questions for Polite English 7. Asking Tag Questions: for affirmation 8. Asking Negative Questions: for Confirmation.	Lectures Tutorials Group Discussion	20 hrs
Recommended Learning Resources			
Print Resources	1. Vijay F Nagannawar and S. B. Biradar ed. New Horizon, Textbook prescribed for B. A. and BSW Programme under CBCS, Rani Channamma University, Belagavi, 2021. 2. Vijay F Nagannawar and S. B. Biradar ed English Stars, Textbook prescribed for BCom and BBA Programme under CBCS, Rani Channamma University, Belagavi, 2021. 3. Dr. S. B. Biradar and Prof. Vijay F Nagannawar ed. English Gems, Textbook prescribed for B. Sc. and BCA Programme under CBCS, Rani Channamma University, Belagavi, 2021. 4. Quirk Randolph, Sidney Greenbaum, Geoffrey Leech &Jan Svartvik. A Comprehensive Grammar of the English Language General Grammar. Longman. 5. Herring, Peter. Complete English Grammar Rules. Create space Independent Pub, California, 2016. 6. Jain Charul, Pradyumnasinh Raj & Yunus Karbharj. English Skills for Academic Purposes. Macmillan Education. London, 2017		
Digital Resources	http://orelt.col.org/module/unit/4-grammar-improving-composition-skills https://www.academia.edu/26724441/A_Concise_Grammar_for_English_Language_Teachers. https://www.efluniversity.ac.in/EnglishPro.php https://www.britishcouncil.in/.		

Question Paper Pattern

I.	10 objective questions 5 from Unit I and 5 from Unit II	10x01=10
II.	01 essay type question out of 2 from Unit I	01x10=10
III.	01 essay type question out of 2 from Unit II	01x10=10
IV.	02 questions out of 4: from Unit III	02x05=10
V.	04 Language Activity out of 6: from Unit IV	04x05=20
Total		**60**

Semester II

Bachelor of Science (Basic/Hons) Programme/ Bachelor of Home Science Programme/ Degree in Fashion and Apparel Design/ Interior Design and Decoration/ Bachelor of Science in Clinical Nutrition (Basic/Hons.) with Clinical Nutrition / Bachelor of Computer Applications (Basic/Hons.) with Computer Applications .
(Both Subjects with practical/One subject without practical and one subject with practical)

Year	2021	**Course Code: BSCENGAECL2-2**	**Credits**	3
Sem.	II	**Course Title: Generic English – II**	**Hours**	4
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60		
Course Outcomes	At the end of the course the student should be able to: 1. Acquire the LSRW (Listening, Speaking, Reading, and Writing) skills. 2. Learn to appreciate literary texts. 3. Obtain the knowledge of literary devices and genres. 4. Acquire the skills of creativity to express one's experiences. 5. Know how to use digital learning tools. 6. Be aware of their social responsibilities. 7. Develop critical thinking skills. 8. Develop gender sensitivity 9. Increase reading speed, analytical skills and develop presentation skills. 10. Become employable with requisite professional skills, ethics and values			
Unit No.	**Course Content**		**Suggested Pedagogy**	**60 Hours**
Unit I	1 Zero Budget Natural Farming by Shibu 2. Milka Singh: The Flying Sikh – Sonia Sanwalka 3. On Saying Please - A. G. Gardinar		Lectures Tutorials Group Discussion	15 hrs
Unit II	1. A Prayer for My Daughter – W. B. Yeats 2. Still I Rise - Maya Angelou 3. How did you Die? - Edmund Vance Cooke		Lectures Tutorials Group Discussion	9 hrs
Unit III	1. Reading passage to give a Title 2. Reading for Vocabulary building – synonyms, homonyms, homophones, suffixes, prefixes, collocations, often confused words.		Lectures Tutorials Group Discussion	16 hrs

	3. Reading passages on Specific fields for Vocabulary building. 4. Barriers for effective listening 1hr Chapter 5. Types of Listening 6. Techniques to improve listening skills. 7. Listening Activities - listening to pre-recorded audios & movies	Role Play	
Unit IV	1. Reported Speech 2. Dialogue writing 3.Verbal Communication and Non-verbal communication 4. Summarizing 5. Speech Writing 6. Essay Writing 7. Translation Kannada into English and English into Kannada 8. Short Paragraphs based on themes with a message on nation, freedom fighters, and achievers. 15 short paragraphs with 5 – 6 sentences as model paragraphs. (a) Paragraph Translations from Kannada to English (b) Paragraph Translations from English to Kannada	Lectures Tutorials Group Discussion	20 hrs
Recommended Learning Resources			
Print Resources	1. Vijay F Nagannawar and S. B. Biradar ed. New Horizon, Textbook prescribed for B. A. and BSW Programme under CBCS, Rani Channamma University, Belagavi, 2021. 2. Vijay F Nagannawar and S. B. Biradar ed English Stars, Textbook prescribed for BCom and BBA Programme under CBCS, Rani Channamma University, Belagavi, 2021. 3. Dr. S. B. Biradar and Prof. Vijay F Nagannawar ed. English Gems, Textbook prescribed for B. Sc. and BCA Programme under CBCS, Rani Channamma University, Belagavi, 2021. 4. Quirk Randolph, Sidney Greenbaum, Geoffrey Leech &Jan Svartvik. A Comprehensive Grammar of the English Language General Grammar. Longman. 5. Herring, Peter. Complete English Grammar Rules. Create space Independent Pub, California, 2016. 6. Jain Charul, Pradyumnasinh Raj & Yunus Karbharj. English Skills for Academic Purposes. Macmillan Education. London, 2017 7. Geoffrey Leech and Svartik. Communicative Grammar of English, Pearson 8. Geoffrey Leech. English Grammar for Today, Palgrave 9. Prasad P.The Functional Aspects of Communicative Skills. 10. Leena Sen. Communication Skills, Princeton Hall 5. Vandana Singh. The Written Word, OUP		

Digital Resources	http://orelt.col.org/module/unit/4-grammar-improving-composition-skills https://www.academia.edu/26724441/A_Concise_Grammar_for_English_Language_Teachers. https://www.efluniversity.ac.in/EnglishPro.php https://www.britishcouncil.in/

Question Paper Pattern

I.	10 objective questions 5 from Unit I and 5 from Unit II	10x01=10
II.	1 essay type question out of 2 from Unit I	01x10=10
III.	01 essay type question out of 2 from Unit II	01x10=10
IV.	02 questions out of 4: from Unit III	02x05=10
V.	04 Language Activity out of 6: from Unit IV	04x05=20
Total		**60**

Semester I

Bachelor of Business Administration, B.B.A. (Basic/Hons.) / Bachelor of Commerce, B.Com.(Basic/Hons.) with Business Administration /Commerce as Programme Core
Bachelor of Hotel Management with Hotel Management as Programme Core Subject with Practical

Year	**2021**	**Course Code: BCOMENGAECL2-1** **Course Title: Generic English – I**	**Credits**	**3**
Sem.	I		**Hours**	4
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60		

Course Outcomes	At the end of the course the student should be able to: 1. Acquire the LSRW (Listening, Speaking, Reading, and Writing) skills. 2. Learn to appreciate literary texts. 3. Obtain the knowledge of literary devices and genres. 4. Acquire the skills of creativity to express one's experiences. 5. Know how to use digital learning tools. 6. Be aware of their social responsibilities. 7. Develop critical thinking skills. 8. Develop gender sensitivity 9. Increase reading speed, analytical skills and develop presentation skills. 10. Become employable with requisite professional skills, ethics and values		
Unit No.	**Course Content**	**Suggested Pedagogy**	**60 Hours**
Unit I	1. Ritesh Agarwal – Karan 2. My Lost Doller – Stephen Leacock 3. How Economic Growth has Become Anti-Life - Vandana Shiva	Lectures Tutorials Group Discussion	15 hrs
Unit II	1. Vachana 820 (Speaking of Shiva) by A. K. Ramanujan 2. Punishment in Kindergarten - Kamala Das 3. On Killing a Tree - Gieve Patel	Lectures Tutorials Group Discussion	9 hrs
Unit III	Introducing One self, Introducing others, Requests, Offering help, Congratulating, Enquiries, Seeking permission Giving instructions to do a task,	Lectures Tutorials Group Discussion Role Play	16 hrs

Unit IV	1. Word class (Nouns, Adjectives, Verbs, and Adverbs) 2. Use of Articles 3. Use of Prepositions (Place, Time, Position) 4. Asking Yes/No Questions, 5. Asking Wh Questions 6. Using Indirect Questions for Polite English 7. Asking Tag Questions: for affirmation 8. Asking Negative Questions: for Confirmation.	Lectures Tutorials Group Discussion	20 hrs
Recommended Learning Resources			
Print Resources	1. Vijay F Nagannawar and S. B. Biradar ed. New Horizon, Textbook prescribed for B. A. and BSW Programme under CBCS, Rani Channamma University, Belagavi, 2021. 2. Vijay F Nagannawar and S. B. Biradar ed English Stars, Textbook prescribed for BCom and BBA Programme under CBCS, Rani Channamma University, Belagavi, 2021. 3. Dr. S. B. Biradar and Prof. Vijay F Nagannawar ed. English Gems, Textbook prescribed for B. Sc. and BCA Programme under CBCS, Rani Channamma University, Belagavi, 2021. 4. Quirk Randolph, Sidney Greenbaum, Geoffrey Leech &Jan Svartvik. A Comprehensive Grammar of the English Language General Grammar. Longman. 5. Herring, Peter. Complete English Grammar Rules. Create space Independent Pub, California, 2016. 6. Jain Charul, Pradyumnasinh Raj & Yunus Karbharj. English Skills for Academic Purposes. Macmillan Education. London, 2017		
Digital Resources	http://orelt.col.org/module/unit/4-grammar-improving-composition-skills https://www.academia.edu/26724441/A_Concise_Grammar_for_English_Language_Teachers. https://www.efluniversity.ac.in/EnglishPro.php https://www.britishcouncil.in/.		

Question Paper Pattern

I.	10 objective questions 5 from Unit I and 5 from Unit II	10x01=10
II.	01 essay type question out of 2 from Unit I	01x10=10
III.	01 essay type question out of 2 from Unit II	01x10=10
IV.	02 questions out of 4: from Unit III	02x05=10
V.	04 Language Activity out of 6: from Unit IV	04x05=20
Total		**60**

Semester II

Bachelor of Business Administration, B.B.A. (Basic/Hons.) / Bachelor of Commerce, B.Com.(Basic/Hons.) with Business Administration /Commerce as Programme Core
Bachelor of Hotel Management with Hotel Management as Programme Core Subject with Practical

Year	2021	**Course Code: BCOMENGAECL2-2** **Course Title: Generic English – II**	**Credits**	3
Sem.	I		**Hours**	
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60		
Course Outcomes	At the end of the course the student should be able to: 1. Acquire the LSRW (Listening, Speaking, Reading, and Writing) skills. 2. Learn to appreciate literary texts. 3. Obtain the knowledge of literary devices and genres. 4. Acquire the skills of creativity to express one's experiences. 5. Know how to use digital learning tools. 6. Be aware of their social responsibilities. 7. Develop the critical thinking skills. 8. Develop gender sensitivity 9. Increase reading speed, analytical skills and develop presentation skills. 10. Become employable with requisite professional skills, ethics and values			
Unit No.	**Course Content**		**Suggested Pedagogy**	**60 Hours**
Unit I	1 A Room 10X8 – K. S. Duggal 2. Spoken English and Broken English – G. B. Shaw 3. A Heart Breaking Recount of Dr. APJ Abdul Kalam's Last Moments - Srijan Pal Singh		Lectures Tutorials Group Discussion	15 hrs
Unit II	1. The Diameter of the Bomb - Yehuda Amichai 2. I Am Not That Woman - Kishwar Naheed 3. Freedom - Jayanta Mahapatra		Lectures Tutorials Group Discussion	9 hrs
Unit III	1. Reading passage to give a Title 2. Reading for Vocabulary building – synonyms, homonyms,		Lectures Tutorials	16 hrs

	homophones, suffixes, prefixes, collocations, often confused words. 3. Reading passages on Specific fields for Vocabulary building. 4. Barriers for effective listening 1hr Chapter 5. Types of Listening 6. Techniques to improve listening skills. 7. Listening Activities - listening to pre-recorded audios & movies	Group Discussion Role Play	
Unit IV	1. Reported Speech 2. Dialogue writing 3.Verbal Communication and Non-verbal communication 4. Summarizing 5. Speech Writing 6. Essay Writing 7. Translation Kannada into English and English into Kannada 8. Short Paragraphs based on themes with a message on nation, freedom fighters, and achievers. 15 short paragraphs with 5 – 6 sentences as model paragraphs. (a) Paragraph Translations from Kannada to English (b) Paragraph Translations from English to Kannada	Lectures Tutorials Group Discussion	20 hrs
Recommended Learning Resources			
Print Resources	1. Vijay F Nagannawar and S. B. Biradar ed. New Horizon, Textbook prescribed for B. A. and BSW Programme under CBCS, Rani Channamma University, Belagavi, 2021. 2. Vijay F Nagannawar and S. B. Biradar ed English Stars, Textbook prescribed for BCom and BBA Programme under CBCS, Rani Channamma University, Belagavi, 2021. 3. Dr. S. B. Biradar and Prof. Vijay F Nagannawar ed. English Gems, Textbook prescribed for B. Sc. and BCA Programme under CBCS, Rani Channamma University, Belagavi, 2021. 4. Quirk Randolph, Sidney Greenbaum, Geoffrey Leech &Jan Svartvik. A Comprehensive Grammar of the English Language General Grammar. Longman. 5. Herring, Peter. Complete English Grammar Rules. Create space Independent Pub, California, 2016. 6. Jain Charul, Pradyumnasinh Raj & Yunus Karbharj. English Skills for Academic Purposes. Macmillan Education. London, 2017 7. Geoffrey Leech and Svartik. Communicative Grammar of English, Pearson 8. Geoffrey Leech. English Grammar for Today, Palgrave 9. Prasad P.The Functional Aspects of Communicative Skills.		

Digital Resources	http://orelt.col.org/module/unit/4-grammar-improving-composition-skills https://www.academia.edu/26724441/A_Concise_Grammar_for_English_Language_Teachers. https://www.efluniversity.ac.in/EnglishPro.php https://www.britishcouncil.in/

Question Paper Pattern

I.	10 objective questions 5 from Unit I and 5 from Unit II	10x01=10
II.	01 essay type question out of 2 from Unit I	01x10=10
III.	01 essay type question out of 2 from Unit II	01x10=10
IV.	02 questions out of 4: from Unit III	02x05=10
V.	04 Language Activity out of 6: from Unit IV	04x05=20
Total		**60**

OPEN ELECTIVE 1

Year	2021	**Course Code: ENGOE01** **Course Title: Functional English, Grammar and Study Skills**	**Credits**	3
Sem.	I		**Hours**	3
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60		
Course Outcomes	At the end of the course the student should be able to: 1. Acquire the LSRW (Listening, Speaking, Reading, and Writing) skills. 2. Acquire the skills of creativity to express one's experiences. 3. Develop the critical thinking skills. 4. Become employable with requisite professional skills and values			
Unit No.	**Course Content**		**Suggested Pedagogy**	**60 Hours**
Unit I	Functional English Grammar 1. Grammar of Spoken and Written English 2. Basic Sentence Patterns in English – Analysis of Sentence Patterns (SVO, SV, SVOC, SVOA, SVOA/C) 3. Functions of Various Types of Phrases: Noun Phrases, Verb Phrases, Adjective Phrases, Adverbial Phrases, Prepositional Phrases 4. Functions of Clauses: Noun Clause, Adjective Clause and Adverbial Clause and Prepositional Clauses 5. Verbs – Tense and Aspects, Modal Verbs, Functions and Uses		Lectures Tutorials Group Discussion	20 hrs
Unit II	Writing Skills 1. Writing as a Skill – Its Importance, Mechanism of Writing, Words and Sentences, Paragraph as a Unit of Structuring the Whole Text, Analysis of Paragraph 2. Functional Uses of Writing: Personal, Academic and Business 3. Writing Process: Planning a Text, Finding Materials, Drafting, Revising, Editing, Finalising Draft 4. Models of Writing: Expansion of Ideas, Dialogue Writing, Drafting an Email		Lectures Tutorials Group Discussion	20 hrs
Unit III	1. Meaning and Process of Reading		Lectures	20 hrs

	2. Strategies and methods to Improve Reading Skill 3. Sub-skills of Reading: Skimming, Scanning, Extensive Reading, Intensive Reading	Tutorials Group Discussion Role Play	
Recommended Learning Resources			
Print Resources	1 Geoffrey Leech and Svartik. Communicative Grammar of English, Pearson 2.Geoffrey Leech. English Grammar for Today, Palgrave 3. Prasad P.The Functional Aspects of Communicative Skills. 4. Leena Sen. Communication Skills, Princeton Hall 5. Vandana Singh. The Written Word, OUP		
Digital Resources	http://orelt.col.org/module/unit/4-grammar-improving-composition-skills https://www.academia.edu/26724441/A_Concise_Grammar_for_English_Language_Teachers. https://www.efluniversity.ac.in/EnglishPro.php https://www.britishcouncil.in/.		

Question Paper Pattern

1. Very Short Answer Questions on all sections	10x2 = 20 Marks
2. Four Short Notes on all sections	4x5 = 20 Marks
3. Close Test	10x1= 10 Marks
4. Short notes(Questions on dialogue and expansion of an idea)	2x5 = 10 Marks
Total:	**60**

OPEN ELECTIVE 2

Year	2021	**Course Code: ENGOE02** **Course Title: Critical Thinking**	**Credits**	3
Sem.	II		**Hours**	3
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60		
Course Outcomes	At the end of the course the student should be able to: 1. Understand issues about the nature and techniques of critical thought 2. View as a way to establish a reliable basis for our claims, beliefs, and attitudes about the world. 3.Explore multiple perspectives, placing established facts,theories, and practices in tension with alternatives to see how could be otherwise. 3.Translate what is learned into strategies, materials, and interventions for use in own educational and professional settings			
Unit No.	**Course Content**		**Suggested Pedagogy**	**60 Hours**
Unit I	Introduction to Critical Thinking 1. Definition and nature of critical thinking 2. Why critical thinking is important? 3. Benjamin Bloom's thinking skills and thinking triangle 4. Higher order thinking skills		Lectures Tutorials Group Discussion	20 hrs
Unit II	1. Reading with a critical eye 2.The Enquiry cycle 3. Argument and nature of argument 4. Elements of Argument, flawed argument, Process of argument, evaluate an argument and Taking notes critically		Lectures Tutorials Group Discussion	20 hrs
Unit III	1. Writing with a critical voice 2. Structuring devices in writing 3.Link and signpost 4. A process for getting critical thinking into your writing, critical thinking and etiquette and thinking for yourself		Lectures Tutorials Group Discussion Role Play	20 hrs
Recommended Learning Resources				
Print	1. Bloom, B.S. (ed.) (1956) Taxonomy of Educational Objectives. Handbook 1, Cognitive Domain, London, Longman.			

Resources	2. Booth, W., Colomb, G.G., Williams, J.M. (1995) 'Making good arguments: an overview', in The Craft of Research, The University of Chicago Press, London. 3. Furedi, F. (1998) Culture of Fear: Risk-taking and the Morality of Low Expectation, London, Cassell. NSPCC (2006) 4. Smith, B. and Goldblatt, D. (2004) 'Whose health is it anyway?' in Hinchliffe, S. and Woodward, K., The Natural and the Social: Uncertainty, Risk, Change (2nd edn) Rutledge/The Open University, Milton Keynes. 5. Toulmin, S. (1958) The Uses of Argument, Cambridge University Press, Cambridge.
Digital Resources	https://www.researchgate.net/publication/301286584_With_Good_Reason_A_Guide_to_Critical_Thinking http://www.ergen.gr/images/Smart_Thinking_Skills.pdf https://www.criticalthinking.org/data/pages/55/e003d59eabfff337e0d0dbdec054ab0951352cf133f63.pdf

Question Paper Pattern

1. Short Answer Questions on all sections	10x2 = 20 Marks
2. Short Notes on all sections	4x5 = 20 Marks
3. Short notes	4x5 = 20 Marks
Total:	**60**

Semester I BA (Basic/Honours) (Paper I)

Year	2021	**Course Code: ENGDSCA1** **Course Title: Introduction to Literature**	**Credits**	3
Sem.	I		**Hours**	3
Course Pre-requisites, if any		PU 2nd year/10+2/		
Total Contact Hours:		**42 hrs**		
Formative Assessment Marks: 40		Summative Assessment Marks: 60		
Course Outcomes		At the end of the course the student should be able to: 1. designed to help learners understand the objectives of studying BA (Honours) in English, that is, to analyze, appreciate, understand and critically engage with literary texts written in English, approaching them from various perspectives and with a clear understanding of locations. 2. Correctly define commonly used literary terms and concepts and use those terms and concepts to discuss and analyze works of literature. 3. Identify structural elements of works of poetry, fiction, and drama, and analyze how those elements help create specific meanings and effects. 4. Compare works of literature in terms of theme, structure, and use of literary devices 5. Gain an understanding of the concepts of literature 6. Appreciate literary form and structure in shaping a text's meaning		
Unit No.		**Course Content**	**Suggested Pedagogy**	**42 Hours**
Unit I		**Introduction to Literature** What is Literature? Literature and society Literature and Culture Literature and Science	Lectures Seminars Group Discussion	14 hrs
Unit II		**Literary Forms** Poetry: Lyric, Sonnet, Ballad, Epic, Elegy, Mock-Epic Drama: Comedy, Tragedy, Tragic-comedy, One-act-play Prose: Novel, Novella, Short Story, Essay, Biography, autobiography	Lectures Seminars Group Discussion	14 hrs
Unit III		**Literary Terms** Couplet, Heroic Couplet, Allegory, Alliteration, Assonance, Refrain, Aside, Monologue, Soliloquy, Meta-Fiction, Plot, Character, Setting,	Lectures Seminars Group Discussion	14 hrs

	Narrative Technique, Farce, Simile, Metaphor, Personification, Hyperbole, Satire, Prologue, Epilogue, Expressionism, Metre and Metrical Devices, Narratology, Canon, Onomatopoeia, Euphemism, Irony, Oxymoron, Synecdoche, Understatement Paradox, Allusion		
Recommended Learning Resources			
Print Resources	**References** 1. Glossary Literary Terms by M H Abrams 2. Hudson, William Henry; An Introduction to the Study of Literature New Delhi Atlantic 2007 3. Baldick, Chris. The Oxford Dictionary of Literary Terms. OUP, 2001. 2. Bate, Jonathan. English Literature: A Very Short Introduction. OUP. 4. Benett, Andrew. An Introduction to Literature, Criticism and Theory. Routledge. 5. Eagleton, Terry. How to Read Literature. Yale University Press. 6. Eaglestone, Robert. Doing English; A Guide for Literature Students. Routledge, 2000. Gopal, Priyamvada. The Indian English Novel; Nation History, and Narration. 7. Hudson, William Henry. An Introduction to the Study of Literature. New Delhi Atlantic, 2007. 8. Mehrotra, Arvind, Ed; An Illustrated History of Indian Literature in English. Orient Blackswan, 2005 9. Ousby, laih. Ed; The Cambridge Guide to Literature in English, Cambridge University Press. 1983 10. The McGraw-Hill. Introduction to Literature		

Question Paper Pattern

I.	Ten Objective questions on Unit I	05x01=05
II	Essay type question on Unit I (1 out of 2)	01x10=10
III.	Short Notes on Unit I (2 out of 1)	05X01=05
IV.	Short notes on Unit II (4out of 6)	04x05=20
V.	Two marks questions on Unit III (10 out of 12)	02x10=20
Total		**60**

Semester I BA (Basic/Honours) (Paper II)

Year	2021	**Course Code: ENGDSCA2**	**Credits**	3
Sem.	I	**Course Title: Indian Writing in English - I**	**Hours**	3
Course Pre-requisites, if any		PU 2nd year/10+2		
Total Contact Hours:		**42 hrs**		
Formative Assessment Marks: 40		Summative Assessment Marks: 60		
Course Outcomes	At the end of the course the student should be able to: 1. designed to help learners understand the objectives of studying BA (Honours) in English, that is, to analyze, appreciate, understand and critically engage with literary texts written in English, approaching them from various perspectives and with a clear understanding of locations. 2. trace and understand the development of Indian English Literature 3. Compare works of literature in terms of theme, structure, and use of literary devices 4. appreciate literary form and structure in shaping a text's meaning			
Unit No.	**Course Content**		**Suggested Pedagogy**	**42 Hours**
Unit I	1. The Nature and Scope of Indian English Literature 2. Pre-Independence Indian English Poetry, Prose, Drama and Novel 3. Introducing authors/texts from the pre-independence era - Raja Ram Mohan Roy, Toru Dutt, Aurobindo, Swami Vivekananda, Mahatma Gandhi, Dr B R Ambedkar, Rabindranath Tagore, Sarojini Naidu Henry Derozio, Dean Mahomet		Lectures Seminars Group Discussion	14 hrs
Unit II	**Pre independence fiction:** 1. Development of Indian English Fiction 2. Raja Rao's Kanthapura		Lectures Seminars Group Discussion	14 hrs
Unit III	**Indian English Poetry, Short Stories and Essays** **Select Poems**: 1. Toru Dutt - Our Casuarina Tree 2. A. K. Ramanujan – River **Select Stories** 1. Rabindranath Tagore - My Lord the Baby 2. R. K. Narayan, - A Horse and Two Goats		Lectures Seminars Group Discussion	14 hrs

	Select Essays 1. M. K. Gandhi -The Great Sentinel 2. Swami Vivekanand - Chicago Address		
Recommended Learning Resources			
Print Resources	**References** 1. Naik, M. K. A History of Indian English Literature. Delhi: Sahitya Akademi, 1992. 2. Iyenger, K R S. Indian Writing in English. New Delhi. Sterling Publisher, 1984. 3. Deshmane, Chetan, ed. Muses India: Essays on English-Language Writers from Mahomet to Rushdie. Jefferson, NC, and London: McFarland & Co., 2013. 4. Iyenger, K R S. Indian Writing in English. New Delhi. Sterling Publisher, 1984. 5. Makarand Paranjape (Ed) Indian Poetry in English, Madras: Macmillan, 1993 6. Mukherji, Minakshi . The Twice Born Fiction. New Delhi: Heinemann, 1971. 7. Narasimhiah C D ed Makers of Indian English Literature, Delhi Pencraft International 2000 8. Radhakrishnan, N. Indo Anglian Fiction: Major Trends and Themes. Madras: Emerald.1984 9. Rao, Krishna. The Indo-Anglian Novels and the Changing Tradition. Mysore: Rao and Raghavan, 1973.		

Question Paper Pattern

I.	Ten Objective questions on Unit I and II	10x01=10
II.	Essay type question on Unit I (1 out of 2)	01x10=10
III.	Essay type question on Unit II (1 out of 2)	01x10=10
IV.	Short notes on Unit I and II (2out of 4)	02x05=10
V.	Essay type question on Unit III (1 out of 2)	01x10=10
VI.	Short notes on Unit III (2out of 4)	02x05=10
Total		**60**

Semester II BA (Basic/Honours) (Paper I)

Year	2021	**Course Code: ENGDSCA3** **Course Title: Introduction to Phonetics and Linguistics**	**Credits**	3
Sem.	II		**Hours**	3
Course Pre-requisites, if any		PU 2nd year/10+2/		
Total Contact Hours:		**42 hrs**		
Formative Assessment Marks: 30		Summative Assessment Marks: 60		
Course Outcomes		At the end of the course the student should be able to: 1. Acquire the knowledge of Phonetics and its concepts 2. Gain an understanding of Linguistics and its concepts		
Unit No.		**Course Content**	**Suggested Pedagogy**	**42 Hours**
Unit I		**Introduction to Linguistics** 1.Language- its nature, definitions, characteristic features 2 Linguistics – Definitions, Scope 3 Branches of Linguistics	Lectures Seminars Group Discussion	14 hrs
Unit II		**Phonetics and Phonology** 1. Speech Mechanism, Organs of Speech, 2. Production of Speech Sounds, Classification of Speech Sounds vowels and consonants, Transcription of words, Word stress, Phonemics-phone, allophone, phoneme	Lectures Seminars Group Discussion	14 hrs
Unit III		**Morphology**, **Syntax and Semantics and Lexicon** 1. Morphology - Morph-word classes: lexical categories, functional categories, the morphological properties of English verbs and building words. Allomorph – morpheme 2. Syntax - Types of Sentences – basic terminology; categories & functions, functions of clauses 3. Semantics and Lexicon – word meaning: entailment and hyponymy, meaning opposites, semantic features, dictionaries & prototypes	Lectures Seminars Group Discussion	14 hrs
Recommended Learning Resources				
Print		**References**		

Resources	1. Cruse, Alan. Meaning in Language. (Oxford: Oxford University Press, 2000). 2. Fromkin, V. (ed.) 2000. Linguistics: An Introduction to Linguistics. Cambridge: Blackwell. 3. Rocca, I., and W. Johnson. A Course in Phonology. (Oxford: Blackwell, 1994). 4. Aronoff, M., and Kirsten Fudeman. What is Morphology. (Oxford: Blackwell,2010). 5. Booij, G E. The Grammr of Words: An Introduction to Linguistic Morphology. (Oxford: OUP, 2007). 6. Catford, J. C. A Practical Introduction to Phonetics. (Oxford: Oxford University Press, 1988). 7. Culicover, P. W. Principles and Parameters: An Introduction to Syntactic Theory. (Oxford: Oxford University 8. Kenstowicz, M. 1994. Phonology in Generative Grammar. Cambridge: Blackwell. 9. Goldsmith, J. (ed). Phonological Theory: The Essential Readings. (Cambridge: Blackwell, 1999). 10. Rocca, I., and W. Johnson. A Course in Phonology. (Oxford: Blackwell, 1994). 11. Saeed, John I. Semantics (2nd ed). (Oxford: Basil Blackwel, 2003)

Question Paper Pattern

I.	Ten Objective questions on Unit I & Unit II	10x01=10
II.	Essay type question on Unit I (1 out of 2)	01x10=10
III.	Short notes on Unit II (2out of 4)	02x05=10
IV.	Transcription of words	10x01=10
V.	Word stress	10x01=10
VI.	Short notes on Unit III (2out of 4)	02x05=10
Total		**60**

Semester II BA (Basic/Honours) (Paper II)

Year	2021	**Course Code: ENGDSCA4** **Course Title: Indian Writing in English – II**	**Credits**	3
Sem.	II		**Hours**	3
Course Pre-requisites, if any		PU 2nd year/10+2/		
Total Contact Hours:		**42 hrs**		
Formative Assessment Marks: 40		Summative Assessment Marks: 60		
Course Outcomes	At the end of the course the student should be able to: 1. trace and understand the development of Indian English Literature 2. Compare works of literature in terms of theme, structure, and use of literary devices 3. develop critical thinking on the works and authors			
Unit No.	**Course Content**		**Suggested Pedagogy**	**42 Hours**
Unit I	**History of Indian English Literature** 1. Post-Independence (1947-1980) Indian English Poetry, Prose, 2. Post-Independence (1947-1980) Indian English drama and Novel 3. Post-1980s Indian English literature		Lectures Seminars Group Discussion	14 hrs
Unit II	**Introducing writers of the post independence era** Kamala Das, Shashi Deshpande, Chaman Nahal, Manohar Malgoankar, Amitav Ghosh, K. A. Abbas, Vikram Seth, Arundathi Roy, Arun Joshi, G B Desani, T P Kailasam, Girish Karnad, Anita Desai, Manju Kapur, Arvind Adiga, Chitra Banerjee Divakaruni, Namitha Gokhale. Kiran Desai, Anita Nair, Mahesh Dattani, Salman Rushdie, Ruskin Bond, Jeet Thayil, Sunithi Namjoshi, Arun Kolatkar etc		Lectures Seminars Group Discussion	14 hrs
Unit III	**Illustrative Texts** **Poetry** 1. Syed Amanuddin - Don't Call Me Indo-Anglian 2. Kamala Das - An Introduction 3. A. K. Ramanujan - Small Scale Reflections on a Great House 4. Nissim Ezekiel - Good Bye Party to Miss Pushpa T S		Lectures Seminars Group Discussion	14 hrs

	Novel Kushwant Singh's Train To Pakistan **Short Play** Mahesh Dattani's Seven Steps Around the Fire (Stage Play)		
Recommended Learning Resources			
Print Resources	**References** 1. Naik, M. K. A History of Indian English Literature. Delhi: Sahitya Akademi, 1992. 2. Iyenger,K R S. Indian Writing in English. New Delhi. Sterling Publisher, 1984. 3. Kushwant Singh's Train To Pakistan 4. A short Play: Mahesh Dattani's Seven Steps Around the Fire (Stage Play) References: 5. Ansani, Shyam M. New Dimensions of Indian English Novels, Delhi: Doaba House,1987 6. Devy, G. N. After Amnesia: Tradition and Changes in Indian Literary Criticism. Hydrabad: Orient Longman 1992. 7. Devy, G.N. An Another Tongue: Essays on Indian English Literature, Madras: Macmillan India Ltd. 1995. 8. Gandhi, Leela. Post-Colonialism, New : Oxford University Press, 2002. 9. Jain, Jasbir. Beyond Postcolonialism: Dreams and Realities of a Nation, Jaipur: Rawat Publications, 2006. 10. Makarand Paranjape (Ed) Indian Poetry in English, Madras: Macmillan, 1993 11. Mukherji, Meenakshi . The Twice Born Fiction. New Delhi: Heinemann, 1971. 12. Vishwanathan,G. Masks of Conquest: Literary Study and British Role in India.		

Question Paper Pattern

I.	Ten Objective questions on Unit I	10x01=10
II.	Essay type question on Unit I (1 out of 2)	01x10=10
III.	Acquaintances (4 out of 6)	04x05=20
IV.	Essay type question on Unit III (1 out of 2)	01x10=10
V.	Short notes on Unit III (2out of 4)	02x05=10
Total		**60**

Board of Studies: English (UG)

01	**Prof. Vijay Nagannawar** Department of Studies in English, Rani Chanamma University, Belagavi.	Chairman
02	**Smt. Asha Kattimani** Department of English, JSS College, Gokak.	Member
03	**Smt. Vijayalakshmi Tirlapur** Department of English, Maratha Mandal College, Belagavi.	Member
04	**Dr. M. M. Hurali** Department of English, KLE's B. K. College, Chikodi.	Subject Expert
05	**Dr. S. B. Biradar** Department of English, SVM College, Ilkal.	Subject Expert

RANI CHANNAMMA UNIVERSITY, BELAGAVI

BA/ BSW/BACCJ Programmes

(Basic/Hons.)

SYLLABUS

3rd and 4th Semester

Subject: Generic English (AECC)

[w.e.f. 2022-23]

ABILITY ENHANCEMENT COMPULSORY COURSE (AECC)

(As per NEP – 2020)

Board of Studies: English (UG)

01	Dr. Nagaratna V. Parande Chairperson, Department of Studies in English, Rani Chanamma University, Belagavi.	Chairperson
02	Shri. S.B.Khot Department of English, MES Arts and Commerce College, Mudalgi	Member
03	Dr. Ashalata Kulakarni Department of English, SKES's Govindram Seksheria Science College, Tilakawadi Belagavi	Member

Terminology Used
DSC - Discipline Specific Core
DSE - Discipline Specific Elective
OE – Open Elective
AECC – Ability Enhancement Compulsory Course
AEC – Ability Enhancement Course
SEC - Skill Enhancement Course
L – Lecturing
T – Tutorial
P – Practical
IA – Internal Assessment
SEE – Sem End Exam
CIE – Continuous Internal Evaluation
SB – Skilled Based
VB – Value Based

RANI CHANNAMMA UNIVERSITY, BELAGAVI

B.A./ B.S.W/BACCJ Degree Programmes (Basic/Hons.)

Sem	Type of Course	Theory/ Practical	Instruction hour per week	Total hours of Syllabus / Sem	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks	Credits
I	AECC	Theory	04 hrs	60	02 hrs	40	60	100	03
II	AECC	Theory	04 hrs	60	02 hrs	40	60	100	03
III	AECC	Theory	04 hrs	60	02 hrs	40	60	100	03
IV	AECC	Theory	04 hrs	60	02 hrs	40	60	100	03
	Details of the other Semesters will be given later								

B.A/ B.S.W/BACCJ Programmes

(Basic/Hons.)

Semester – 3

Subject: Generic English-3
Ability Enhancement Compulsory Course (AECC)

Course No.	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
Course-03	AECC	Theory	03	04	60 hrs	2hrs	40	60	100

Course Objectives

1. To enhance LSRW (Listening, Speaking, Reading, Writing) skills
2. To develop interpersonal communicative skills
3. To augment presentation skills
4. To critically analyze, interpret and appreciate literary texts
5. To sensitize about social, cultural, religious and ethnic diversities
6. To enable employability in emerging sectors such as – content writers, interpreters, translators, transcribers
7. To facilitate preparation for competitive examinations UPSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS and others.

Course Outcomes

At the end of the course the students will have :

1. Acquired enhanced LSRW (Listening, Speaking, Reading, Writing) skills
2. Equipped themselves with interpersonal communication skills
3. Augmented presentation and analytical skills
4. Ability to critically analyse, interpret and appreciate literary texts
5. An awareness of social, cultural, religious and ethnic diversities
6. Facilitated employability in emerging sectors such as – content writers, interpreters, translators, transcribers
7. Acquired language skills for competitive examinations - UPSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS and others.

Syllabus- AECC 3:	50/56hrs	Total marks: 60
Unit –1 **RECEPTIVE SKILLS: READING SKILLS AND LISTENING SKILLS**	**23hrs**	**40 marks**
Text: Dear Departed – Stanley Houghton	**15 hours**	**30 marks**
Unit – 2: Listening Skills- Persuasive Speeches (Audio version of the speeches to be emphasised)	**8hrs**	**10marks**
Listening to Famous Speeches **1. "**Crisis of Civilization" speech by Rabindranath Tagore at Shanti Niketan in April 1941 was his last speech. Tagore had been unwell for some time, yet his words were very moving. https://www.youtube.com/watch?v=56dWrRCJwgE **2.** Dr. B R Ambedkar's Constituent Assembly Speech on Dec 17,1946 https://www.youtube.com/wat ch?v=2VFm0Uo63r**Y** **3.** "My Vision for India" by Dr. APJ Abdul Kalam is one of his best speeches at Indian Institute of Technology, Hyderabad, where he outlined his visions for India. **Link:** **https://youtu.be/neKaXXXKtHE?t=30** **4.** Martin Luther King's 'I Have a Dream' Speech, 1963 https://www.youtube.com/watch?v=smEqnnklfYs **5.**The speech by **Kiran Bedi,** India's first woman IPS officer on visionary leadership. https://youtu.be/IqYqMhVxTsY		
UNIT II	**23 hrs**	**20 marks**
PRESENTATION SKILLS	**5hrs**	**5marks**
Organization of the Speech Use of Charts and diagrams Audio visual aids Body Language		
WRITING SKILLS	**18hrs**	**15 marks**
Introduction to Writing and Types of Writing		
a. Introduction to Writing **Types of Writing** Descriptive Writing Reflective Writing		

Essay writing **b. Business Correspondence** Letter of Enquiry Letter of Complaint Job Application and Resume Writing **a. Commercial Writing** Advertisement Writing Product Manual Poster/Brochure Writing		

BA/B.S.W/BACCJ

(Basic/Hons.)

Semester – IV

Subject: Generic English
Ability Enhancement Compulsory Course (AECC)

Course No.	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
Course-04	AECC	Theory	03	04	60 hrs	2hrs	40	60	100

COURSE OBJECTIVES

1. To enhance the students' creative, interpretative and critical thinking
2. To equip the students to communicate confidently and effectively
3. To prepare for various interviews and professional contexts
4. To build persuasive and creative social media writing skills
5. To develop analytical and evaluative skills
6. To train students to identify and understand regional and global contexts and ethical frameworks in texts and narratives
7. To enable students for self-expression

COURSE OUTCOMES

By the end of the course the students will have:

1. Acquired creative, interpretative and critical thinking
2. Skills to communicate confidently and effectively
3. Obtained persuasive and creative social media writing skills
4. Developed analytical and evaluative skills
5. Learnt to identify and understand social contexts and ethical frameworks in the texts
6. Ability to articulate their views with clarity and confidence
7. Eligibility to take up jobs such as content writing, journalism and such other jobs with proficiency in English

Syllabus- AECC- 4	**Total Hrs:56**	**60 marks**
Unit –I	**23 hrs**	**40 marks**
Animal Farm- George Orwell	**18hrs**	**30 marks**
Unit – II: Listening, Decoding and Speaking Skills	**5hrs**	**10 marks**
Listening to Poems(any best rendering on you tube or any channel) 1. "Invictus"- William Ernest Henley	**2hrs**	

2." Workers' God"- Kunj Bihari Das		
TED Talks 1. A Well Educated Mind - Shashi Tharoor https://youtu.be/kcW4ABcY3zI 2. Becoming a Better Teacher - https://youtu.be/fdZkmbY0HB0 3. The Forgotten Gender- Deepika Bhardwaj https://youtu.be/1_2gl7lz25E	**3hrs**	
UNIT-2 PRODUCTIVE SKILLS **SPEAKING SKILLS AND WRITING SKILLS**	**23hrs**	
Pecha kucha Presentation* Group Discussion Interview Skills (**PechaKucha* is a presentation format that requires a speaker to deliver twenty seconds of commentary per slide for twenty automatically advancing slides. *PechaKucha*, which means "the sound of conversation" or "chit-chat" in Japanese, is a popular social event and a novel way for companies and educators to help employees and students sharpen public speaking skills and promote connectivity. The total presentation time for a *PechaKucha* presentation is six minutes and forty seconds.)	**4hrs**	**5marks**
WRITING SKILLS		
1. **Technical Writing (any 4)** Travel Writing Artistic Writing Precis Writing, Copy writing Article Writing	**8hrs**	**5marks**
2. **Email Writing (any 3)** **Casual and Professional** – Appreciation, Congratulations, Promotion Letter, Leave letter	**5hrs**	**5 marks**
3. **Social Media** Blog Writing, Podcast, Writing on face book, Twitter, Quora, Instagram	**6hrs**	**5 marks**

Suggested Reading/ References

1. Garg Manoj Kumar. English Communication -Theory and Practice -Ability Enhancement Compulsory Course. Cengage, 2019.
2. Rogers, C., Farson, R. E. Active Listening. Gordon Training Inc., www.gordontraining.com/free-workplace-articles/active-listening/, Extract from 1957 article
3. Leech, Geoffrey and Jan Svartvik. A Communicative Grammar of English. Routledge, 2016.
4. Yadugiri, M A. Making Sense of English - A Textbook of Sounds, Words and Grammar, Viva Books, 2020.
5. Yadugiri, M A. The Pronunciation of English - Principles and Practice. Viva Books, 2018.
6. Peck, John and Martin Coyle. Write It Right – Secrets of Effective Writing (Palgrave Study Skills), Palgrave Macmillan, 2005, 2012.
7. Stannard Allen William . Living English Structure. Longman, London, 1974
8. Wood, Frederick. A Remedial English Grammar for Foreign Students. Macmillan Education, India, 1990.
9. Stanford Gene. Better Writing: From Paragraph to Essay. Harcourt College Pub, California, 1980.
10. Chaturvedi PD and Mukesh Chaturvedi. Business Communication, Concepts, Cases and Applications. Pearson, 2011.
11. Dev, Anjana Neira, Anuradha Marwah & Swati Pal. Creative writing - A Beginners Manual. Pearson.2008
12. Murphy, Raymond. Grammar in Use. CUP, 2019. 5 th Edition.
13. Seely, John. Oxford Guide to Effective Writing and Speaking OUP,1998

ASSESSMENT

Mode of Evaluation and Distribution of Marks

- • The course shall carry a total of 100 marks.
- • There shall be semester-end written examination for all the courses conducted by the Examination Division of the University for 60 marks.
- • Each semester there shall be Internal Marks for 40.
- **A. FORMATIVE ASSESSMENT – 40 marks**
- **B. SUMMATIVE ASSESSMENT – 60 Marks**

TOTAL - 100 Marks

- **A. FORMATIVE ASSESSMENT – 40 marks**

Details of Formative assessment (IA) for AECC: 40% weightage for total marks

Type of Assessment	Weightage	Duration
Written test	10	1 hr
Seminar/Webinar	10	1 hr
Experiential Learning (Any two activities) Creative Writing/Case study /	20	

Assignment / Field work / Interviews/ Project work/ Internship/Report on any Mega event		
Total	40	

SUMMATIVE ASSESSMENT – 60 Marks
QUESTION PAPER PATTERN
for
BA/BSW/CCJ
III & IV SEMESTER
GENERIC ENGLISH /L2

Time: 2 ½ Hours Max.Marks:60

Instruction: Answer all the questions

UNIT – 1
RECEPTIVE SKILLS: READING SKILLS AND LISTENING SKILLS

I I. Answer in one or two sentences (5 questions out of 7) 5x2=10

II II. Answer in about a page. (2 questions out of 3) 2x5=10

III III. Answer in about 2 – 3 pages (1 question out of 2) 1x10=10

IV IV. Answer in about a page. (2 questions out of 3) 2x5=10

UNIT – 2
PRODUCTIVE SKILLS: SPEAKING AND WRITING SKILLS

I V. Answer in about a page (1 question out of 2) 1x5=5

II VI. Answer in about a page (1 question out of 3) 1x5=5

III VII. Answer in about a page (1 question out of 3) 1x5=5

IV VIII. Answer in about a page (1 question out of 3) 1x5=5

RANI CHANNAMMA UNIVERSITY, BELAGAVI

BCom/BBA Programmes

(Basic/Hons.)

SYLLABUS

3rd and4th Semester

Subject: Generic English (AECC)

[w.e.f. 2022-23]

ABILITY ENHANCEMENT COMPULSORY COURSE (AECC)

(As per NEP – 2020)

RANI CHANNAMMA UNIVERSITY, BELAGAVI

BCom/BBA Programmes (Basic/Hons.)

Sem	Type of Course	Theory/ Practical	Instruction hour per week	Total hours of Syllabus / Sem	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks	Credits
I	AECC	Theory	04 hrs	60	02 hrs	40	60	100	03
II	AECC	Theory	04 hrs	60	02 hrs	40	60	100	03
III	AECC	Theory	04 hrs	60	02 hrs	40	60	100	03
IV	AECC	Theory	04 hrs	60	02 hrs	40	60	100	03
	Details of the other Semesters will be given later								

BCom/BBA Programmes

(Basic/Hons.)

Semester – III

Subject: Generic English-3
Ability Enhancement Compulsory Course (AECC)

Course No.	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
Course-03	AECC	Theory	03	04	60 hrs	2hrs	40	60	100

Course Objectives

1. To enhance LSRW (Listening, Speaking, Reading, Writing) skills
2. To develop interpersonal communicative skills
3. To augment presentation skills
4. To critically analyse, interpret and appreciate literary texts
5. To sensitize about social, cultural, religious and ethnic diversities
6. To enable employability in emerging sectors such as – content writers, interpreters, translators, transcribers
7. To facilitate preparation for competitive examinations UPSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS and others.

Course Outcomes

At the end of the course the students will have :

1. Acquired enhanced LSRW (Listening, Speaking, Reading, Writing) skills
2. Equipped themselves with interpersonal communication skills
3. Augmented presentation and analytical skills
4. Ability to critically analyse, interpret and appreciate literary texts
5. An awareness of social, cultural, religious and ethnic diversities
6. Facilitated employability in emerging sectors such as – content writers, interpreters, translators, transcribers
7. Acquired language skills for competitive examinations - UPSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS and others.

Syllabus- AECC 3:	**50/56hrs**	**Total Hrs: 60**
Unit –1 **RECEPTIVE SKILLS: READING SKILLS AND LISTENING SKILLS**	**23hrs**	**40 marks**
	15 hours	**30 marks**

Text: Chandalika – Rabindranath Tagore		
Unit – 2: Listening Skills- Persuasive Speeches (Audio version of the speeches to be emphasised)	**8hrs**	**10marks**
Listening to Famous Speeches **1.** "Quit India" speech delivered by Mahatma Gandhi on August 8, 1942, when he addressed the A.I.C.C. at Mumbai. https://youtu.be/QXajHuEKYCg **2.** Swami Vivekananda's speech at the World Parliament of Religions in Chicago, in which he introduced Hinduism to North America, became historical. https://www.youtube.com/watch?v=nbkRGhNbYZE **3.** Dr. B R Ambedkar's Constituent Assembly Speech on Dec 17,1946 https://www.youtube.com/wat ch?v=2VFm0Uo63r**Y** **4.** Martin Luther King's 'I Have a Dream' Speech, 1963 https://www.youtube.com/watch?v=smEqnnklfYs **5.** The speech by Kiran Bedi, India's first woman IPS officer on visionary leadership. https://youtu.be/IqYqMhVxTsY		
UNIT II	**23 hrs**	**20 marks**
Presentation Skills	**5hrs**	**5marks**
Organization of the Speech Use of Charts and diagrams Audio visual aids Body Language		
WRITING SKILLS	**18hrs**	**15 marks**
Introduction to Writing and Types of Writing		
b. Introduction to Writing **Types of Writing** Descriptive Writing Reflective Writing Essay writing **c. Business Correspondence** Letter of Enquiry Letter of Complaint Job Application and Resume Writing **d. Commercial Writing** Advertisement Writing Product Manual Poster/Brochure Writing		

BCom/BBA Programmes

(Basic/Hons.)

Semester – IV

Subject: Generic English
Ability Enhancement Compulsory Course (AECC)

Course No.	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
Course-04	AECC	Theory	03	04	60 hrs	2hrs	40	60	100

COURSE OBJECTIVES

8. To enhance the students' creative, interpretative and critical thinking
9. To equip the students to communicate confidently and effectively
10. To prepare for various interviews and professional contexts
11. To build persuasive and creative social media writing skills
12. To develop analytical and evaluative skills
13. To train students to identify and understand regional and global contexts and ethical frameworks in texts and narratives
14. To enable students for self-expression

COURSE OUTCOMES

By the end of the course the students will have:

8. Acquired creative, interpretative and critical thinking
9. Skills to communicate confidently and effectively
10. Obtained persuasive and creative social media writing skills
11. Developed analytical and evaluative skills
12. Learnt to identify and understand social contexts and ethical frameworks in the texts
13. Ability to articulate their views with clarity and confidence
14. Eligibility to take up jobs such as content writing, journalism and such other jobs with proficiency in English

Syllabus- AECC- 4	**Total Hrs:56**	**60 marks**
Unit –I	**23 hrs**	**40 marks**
Wings of Fire – Abdul Kalam	**18hrs**	**30 marks**
Unit – II: Listening, Decoding and Speaking Skills	**5hrs**	**10hrs**
Listening to Poems (any best rendering on you tube or any channel) 1. "Invictus"- William Ernest Henley	**2hrs**	

2. "My Last Duchess"- Robert Browning		
TED Talks **1.** "The green house in a box" ,empowering farmers in India https://www.ted.com/talks/sathya_raghu_mokkapati_the_greenhouse_in_a_box_empowering_farmers_in_india **2.** I am a female Indian and I stand for equality https://www.ted.com/talks/sai_shivani_devata_i_am_a_female_indian_and_i_stand_for_equality?utm_source=whatsapp&utm_medium=social&utm_campaign=tedspread **3.** A Well Educated Mind - Shashi Tharoor https://youtu.be/kcW4ABcY3zI ,,,	**3hrs**	
UNIT-2 PRODUCTIVE SKILLS **SPEAKING SKILLS AND WRITING SKILLS**	**23hrs**	
Pecha kucha Presentation* Group Discussion Interview Skills (**PechaKucha* is a presentation format that requires a speaker to deliver twenty se commentary per slide for twenty automatically advancing slides. *PechaKucha*, wh "the sound of conversation" or "chit-chat" in Japanese, is a popular social event ar way for companies and educators to help employees and students sharpen public s skills and promote connectivity. The total presentation time for a *PechaKucha* pre six minutes and forty seconds.)	**4hrs**	**5marks**
WRITING SKILLS		
4. Technical Writing (any 4) Travel Writing Business Writing Precis Writing, Copy writing Article Writing	**8hrs**	**5marks**
5. Email Writing (any 3) **Casual and Professional** – Appreciation, Congratulations, Promotion Letter, Leave letter	**5hrs**	**5 marks**
6. Social Media Blog Writing, Podcast, Writing on face book, Twitter, Quora, Instagram	**6hrs**	**5 marks**

Suggested Reading/ References

14. Garg Manoj Kumar. English Communication -Theory and Practice -Ability Enhancement Compulsory Course. Cengage, 2019.
15. Rogers, C., Farson, R. E. Active Listening. Gordon Training Inc., www.gordontraining.com/free-workplace-articles/active-listening/, Extract from 1957 article
16. Leech, Geoffrey and Jan Svartvik. A Communicative Grammar of English. Routledge, 2016.
17. Yadugiri, M A. Making Sense of English - A Textbook of Sounds, Words and Grammar, Viva Books, 2020.
18. Yadugiri, M A. The Pronunciation of English - Principles and Practice. Viva Books, 2018.
19. Peck, John and Martin Coyle. Write It Right – Secrets of Effective Writing (Palgrave Study Skills), Palgrave Macmillan, 2005, 2012.
20. Stannard Allen William . Living English Structure. Longman, London, 1974
21. Wood, Frederick. A Remedial English Grammar for Foreign Students. Macmillan Education, India, 1990.
22. Stanford Gene. Better Writing: From Paragraph to Essay. Harcourt College Pub, California, 1980.
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24. Dev, Anjana Neira, Anuradha Marwah & Swati Pal. Creative writing - A Beginners Manual. Pearson.2008
25. Murphy, Raymond. Grammar in Use. CUP, 2019. 5 th Edition.
26. Seely, John. Oxford Guide to Effective Writing and Speaking OUP,1998

ASSESSMENT

Mode of Evaluation and Distribution of Marks

- • The course shall carry a total of 100 marks.
- • There shall be semester-end written examination for all the courses conducted by the Examination Division of the University for 60 marks.
- • Each semester there shall be Internal Marks for 40.
- **A. FORMATIVE ASSESSMENT – 40 marks**
- **B. SUMMATIVE ASSESSMENT – 60 Marks**

TOTAL - 100 Marks

- **A. FORMATIVE ASSESSMENT – 40 marks**

Details of Formative assessment (IA) for AECC: 40% weight age for total marks

Type of Assessment	Weightage	Duration
Written test	10	1 hr
Seminar/Webinar	10	1 hr
Experiential Learning (Any two	20	

activities) Creative Writing/Case study / Assignment / Field work / Interviews/ Project work/ Internship/Report on any Mega event		
Total	40	

SUMMATIVE ASSESSMENT – 60 Marks

QUESTION PAPER PATTERN

for

B Com /BBA

III & IV SEMESTER

GENERIC ENGLISH /L2

Time: 2 ½ Hours Max.Marks:60

Instruction: Answer all the questions

UNIT – 1

RECEPTIVE SKILLS: READING SKILLS AND LISTENING SKILLS

V I. Answer in one or two sentences (5 questions out of 7) 5x2=10

VI II. Answer in about a page. (2 questions out of 3) 2x5=10

VII III. Answer in about 2 – 3 pages (1 question out of 2) 1x10=10

VIII IV. Answer in about a page. (2 questions out of 3) 2x5=10

UNIT – 2

PRODUCTIVE SKILLS: SPEAKING AND WRITING SKILLS

V V. Answer in about a page (1 question out of 2) 1x5=5

VI VI. Answer in about a page (1 question out of 3) 1x5=5

VII VII. Answer in about a page (1 question out of 3) 1x5=5

VIII VIII. Answer in about a page (1 question out of 3) 1x5=5

RANI CHANNAMMA UNIVERSITY, BELAGAVI

B.Sc./ B.C.A./B.Sc. C.C.J. Programmes

(Basic/Hons.)

SYLLABUS

3rd and4th Semester

Subject: Generic English

ABILITY ENHANCEMENT COMPULSORY COURSE (AECC)

(w.e.f. 2022-23)

(As per NEP – 2020)

RANI CHANNAMMA UNIVERSITY, BELAGAVI

B.Sc./ B.C.A./B.Sc. C.C.J. Programmes

Programmes(Basic/Hons.)

Sem	Type of Course	Theory/ Practical	Instruction hour per week	Total hours of Syllabus / Sem	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks	Credits
I	AECC	Theory	04 hrs	60	02 hrs	40	60	100	03
II	AECC	Theory	04 hrs	60	02 hrs	40	60	100	03
III	AECC	Theory	04 hrs	60	02 hrs	40	60	100	03
IV	AECC	Theory	04 hrs	60	02 hrs	40	60	100	03
	Details of the other Semesters will be given later								

B.Sc./ B.C.A./B.Sc. C.C.J. Programmes

(Basic/Hons.)

Semester – 3

Subject: Generic English-3
Ability Enhancement Compulsory Course (AECC)

Course No.	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
Course-03	AECC	Theory	03	04	60 hrs	2hrs	40	60	100

Course Objectives

1. To enhance LSRW (Listening, Speaking, Reading, Writing) skills
2. To develop interpersonal communicative skills
3. To augment presentation skills
4. To critically analyse, interpret and appreciate literary texts
5. To sensitize about social, cultural, religious and ethnic diversities
6. To enable employability in emerging sectors such as – content writers, interpreters, translators, transcribers
7. To facilitate preparation for competitive examinations UPSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS and others.

Course Outcomes

At the end of the course the students will have :

1. Acquired enhanced LSRW (Listening, Speaking, Reading, Writing) skills
2. Equipped themselves with interpersonal communication skills
3. Augmented presentation and analytical skills
4. Ability to critically analyse, interpret and appreciate literary texts
5. An awareness of social, cultural, religious and ethnic diversities
6. Facilitated employability in emerging sectors such as – content writers, interpreters, translators, transcribers
7. Acquired language skills for competitive examinations - UPSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTS and others.

Syllabus- AECC 3:	**50/56hrs**	**Total marks: 60**
Unit –1 **RECEPTIVE SKILLS: READING SKILLS AND LISTENING SKILLS**	**23hrs**	**40 marks**
	15 hours	**30 marks**

Text: – *Fire and Rain* – Girish Karnad		
Unit – 2: Listening Skills- Persuasive Speeches (Audio version of the speeches to be emphasized)	**8hrs**	**10marks**
Listening to Famous Speeches **1 "Crisis of Civilization"** speech by **Rabindranath Tagore** at Shanti Niketan in April 1941 was his last speech. Tagore had been unwell for some time, yet his words were very moving. https://www.youtube.com/watch?v=56dWrRCJwgE **2.** Dr. B R Ambedkar's Constituent Assembly Speech on Dec 17,1946 https://www.youtube.com/wat ch?v=2VFm0Uo63r**Y** **3**.The speech by **Narayana Murthy** at Lal Bahadur Shastri Institute of Management Link: https://youtu.be/mMqJztCWbqA **4**. Martin Luther King's 'I Have a Dream' Speech, 1963 https://www.youtube.com/watch?v=smEqnnklfYs **5**.The speech by **Kiran Bedi,** India's first woman IPS officer on visionary leadership. https://youtu.be/IqYqMhVxTsY		
UNIT II	**23 hrs**	**20 marks**
Presentation Skills	**5hrs**	**5marks**
1. Organization of the Speech Use of Charts and diagrams Audio visual aids Body Language		
WRITING SKILLS	**18hrs**	**15 marks**
Introduction to Writing and Types of Writing	**6hrs**	**5marks**

2.Types of Writing Descriptive Writing Reflective Writing Essay writing		
3.Business Correspondence Letter of Enquiry Letter of Complaint Job Application and Resume Writing	**6hrs**	**5marks**
4.Commercial Writing Advertisement Writing Product Manual Poster/Brochure Writing	**6hrs**	**5marks**

B.Sc./ B.C.A./B.Sc. C.C.J. Programmes

Semester – IV

Subject: Generic English
Ability Enhancement Compulsory Course (AECC)

Course No.	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
Course-04	AECC	Theory	03	04	50/56hrs	2hrs	40	60	100

COURSE OBJECTIVES

15. To enhance the students' creative, interpretative and critical thinking
16. To equip the students to communicate confidently and effectively
17. To prepare for various interviews and professional contexts
18. To build persuasive and creative social media writing skills
19. To develop analytical and evaluative skills
20. To train students to identify and understand regional and global contexts and ethical frameworks in texts and narratives
21. To enable students for self-expression

COURSE OUTCOMES

By the end of the course the students will have:

15. Acquired creative, interpretative and critical thinking
16. Skills to communicate confidently and effectively
17. Obtained persuasive and creative social media writing skills
18. Developed analytical and evaluative skills
19. Learnt to identify and understand social contexts and ethical frameworks in the texts
20. Ability to articulate their views with clarity and confidence
21. Eligibility to take up jobs such as content writing, journalism and such other jobs with proficiency in English

Syllabus- AECC- 4	**Total Hrs: 56**	**60 marks**
Unit –I	**23 hrs**	**40 marks**
Text: ***Carvalho-*** K P Purnachandra Tejasvi	**18hrs**	**30 marks**
Unit – II: Listening, Decoding and Speaking Skills	**5hrs**	**10hrs**
Listening to Poems(any best rendering on you tube or any channel) 1. "Invictus"- William Ernest Henley	**2hrs**	

2. "On Killing a Tree" – Gieve Patel		
TED Talks **1.** A Well Educated Mind - Shashi Taroor https://youtu.be/kcW4ABcY3zI **2.** India's Environmental Crisis, Unspoken and Unheard https://www.ted.com/talks/vimlendu_jha_india_s_environmental_crisis_unspoken_and_unheard?utm_source=whatsapp&utm_medium=social&utm_campaign=tedspread **3**.Gender equality and empower all women – Shalini Rajanish https://www.ted.com/talks/dr_shalini_rajneesh_ias_gender_equality_and_empower_all_women_and_girls_un_sdg_goal_5?utm_source=whatsapp&utm_medium=social&utm_campaign=tedspread	**3hrs**	
UNIT-2 PRODUCTIVE SKILLS **SPEAKING SKILLS AND WRITING SKILLS**	**23hrs**	
1.Pecha kucha Presentation* Group Discussion Interview Skills (**PechaKucha* is a presentation format that requires a speaker to deliver twenty seconds of commentary per slide for twenty automatically advancing slides. *PechaKucha*, which means "the sound of conversation" or "chit-chat" in Japanese, is a popular social event and a novel way for companies and educators to help employees and students sharpen public speaking skills and promote connectivity. The total presentation time for a *PechaKucha* presentation is six minutes and forty seconds.)	**4hrs**	**5marks**
WRITING SKILLS		
2.Technical Writing (any 4) Travel Writing Scientific Writing Précis Writing, Copy writing Article Writing	**8hrs**	**5marks**
3.Email Writing (any 3) **Casual and Professional** – Appreciation, Congratulations, Promotion Letter, Leave letter	**5hrs**	**5 marks**
4.Social Media Blog Writing, Podcast, Writing on face book, Twitter, Quora, Instagram	**6hrs**	**5 marks**

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28. Rogers, C., Farson, R. E. Active Listening. Gordon Training Inc., www.gordontraining.com/free-workplace-articles/active-listening/, Extract from 1957 article
29. Leech, Geoffrey and Jan Svartvik. A Communicative Grammar of English. Routledge, 2016.
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31. Yadugiri, M A. The Pronunciation of English - Principles and Practice. Viva Books, 2018.
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37. Dev, Anjana Neira, Anuradha Marwah & Swati Pal. Creative writing - A Beginners Manual. Pearson.2008
38. Murphy, Raymond. Grammar in Use. CUP, 2019. 5 th Edition.
39. Seely, John. Oxford Guide to Effective Writing and Speaking OUP,1998.

ASSESSMENT

Mode of Evaluation and Distribution of Marks

- • The course shall carry a total of 100 marks.
- • There shall be semester-end written examination for all the courses conducted by the Examination Division of the University for 60 marks.
- • Each semester there shall be Internal Marks for 40.
- **A. FORMATIVE ASSESSMENT – 40 marks**
- **B. SUMMATIVE ASSESSMENT – 60 Marks**

TOTAL - 100 Marks

- **A. FORMATIVE ASSESSMENT – 40 marks**

Details of Formative assessment (IA) for AECC: 40% weight age for total marks

Type of Assessment	Weightage	Duration
Written test	10	1 hr
Seminar/Webinar	10	1 hr
Experiential Learning (Any two activities)	20	

Creative Writing/Case study / Assignment / Field work / Interviews/ Project work/ Internship/Report on any Mega event		
Total	40	

SUMMATIVE ASSESSMENT – 60 Marks
QUESTION PAPER PATTERN
for
BSc/BCA/BSc CCJ
III & IV SEMESTER
GENERIC ENGLISH /L2

Time: 2 ½ Hours Max.Marks:60

Instruction: Answer all the questions

UNIT – 1
RECEPTIVE SKILLS: READING SKILLS AND LISTENING SKILLS

IX I. Answer in one or two sentences (5 questions out of 7) 5x2=10

X II. Answer in about a page. (2 questions out of 3) 2x5=10

XI III. Answer in about 2 – 3 pages (1 question out of 2) 1x10=10

XII IV. Answer in about a page. (2 questions out of 3) 2x5=10

UNIT – 2
PRODUCTIVE SKILLS: SPEAKING AND WRITING SKILLS

IX V. Answer in about a page (1 question out of 2) 1x5=5

X VI. Answer in about a page (1 question out of 3) 1x5=5

XI VII. Answer in about a page (1 question out of 3) 1x5=5

XII VIII. Answer in about a page (1 question out of 3) 1x5=5

RANI CHANNAMMA UNIVERSITY, BELAGAVI

BA

(Basic/Hons.)

English Literature(DSCC)

SYLLABUS

3rd and4th Semester

(w.e.f. 2022-23)

(As per NEP – 2020)

DISCIPLINE SPECIFIC CORE COURSE (DSCC)

Rani Channamma University, Belagavi
Under Graduate Program in English for B.A. (Hons.)
(w.e.f. from 2022-23)

Sem	Type of Course	Theory/ Practical	Instruction hour per week	Total hours of Syllabus / Sem	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks	Credits
III	DSCC 5	Theory	03 hrs	45	021/2 hrs	40	60	100	03
	DSCC 6	Theory	03 hrs	45	021/2 hrs	40	60	100	03
	OEC-3	Theory	03 hrs	45	021/2 hrs	40	60	100	03
IV	DSCC 7	Theory	03 hrs	45	021/2 hrs	40	60	100	03
	DSCC 8	Theory	03 hrs	45	021/2 hrs	40	60	100	03
	OEC-4	Theory	03 hrs	45	021/2 hrs	40	60	100	03
	Details of the other Semesters will be given later								

*** Student can opt digital fluency as SEC or the SEC of his/ her any one DSCC selected**

Title of the Programme BA (Hon) English Literature

PROGRAM SPECIFIC OUTCOMES :

At the end of the BA (Hons) English Literature programme, students will be:

1. Exposed to and demonstrate a broad knowledge of major and minor writers, texts and contexts and defining issues of canonical and non-canonical literature
2. Enriched by familiarity with other literatures and more importantly with Indian writers, their ethos and tradition of writing and discourse
3. Refined in their skills of remembering, understanding, applying, analyzing, evaluating and creatingliterature
4. Able to write with clarity, creativity and persuasiveness
5. Developing and demonstrating their awareness of the significance of literature and

literary forms and the debates of culture they generate as values

6. Equipped with advanced literary, linguistic skills
7. Competent in the use of English from/for a variety of domains
8. Able to inculcate a spirit of inquiry and critical thinking
9. Able to articulate thoughts and generate/understand multiple interpretations
10. Able to locate and contextualize texts across theoretical orientations and cultural spaces
11. Enabled Reading and writing skills catering to academic and other professional disciplines viz.print and electronic media, advertising, content writing etc.
12. Empowered with a multi-disciplinary approach in higher education and research
13. Skilled in multiple domains and careers
14. Adept in using English in the current technological climate.
15. Enabled to have hands-on work experience.

The III semester BA (English) program has two DSCC courses (Course 5 & 6) for 06credits: Each course has 03 credits. Both the courses are compulsory.

COURSE – 5

TITLE - British Literature from Beginning to 1800

PAPER 1

(FROM CHAUCER TO THE AGE OF TRANSITION)

Course	Type of Course	Theory / Practical	Credits	Instruction hours per week	Total No. of Lectures/Hours /Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
05	DSCC	Theory	03	03	45hrs	2 1/2 hrs	40	60	100

COURSE OUTCOME:

After completion of course, students will be able to:

1) Learn the important trends and movements in the British literature of the prescribed period
2) Identify and understand the canonical literature of England
3) Distinguish the poets, playwrights and novelists of different periods
4) Appreciate some representative texts of the prescribed period

COURSE 5 **TITLE -** British Literature from Beginning to 1800 **Paper -I** **(FROM CHAUCER TO THE AGE OF TRANSITION)**	**Total Hrs: 45**
UNIT I **HISTORY OF ENGLISH LITERATURE (UP TO 1800)** The Social Context of Medieval English Literature, Renaissance, Elizabethan Poetry, Elizabethan Drama, Metaphysical Poetry, Restoration Drama, 18th Century Prose, Development of Novel in 18th Century, Neo-classical and Transitional Poetry	**15hrs**
UNIT II **MAJOR AUTHORS AND WORKS**	**15hrs**
Geoffrey Chaucer, Francis Bacon, William Shakespeare, Ben Jonson, John Milton, John Dryden, Alexander Pope, Dr. Samuel Johnson, Oliver Goldsmith, John Bunyan, Aphra Behn, Margaret Cavendish, Elizabeth Cary, Anne Finch, Amelia Lanyer, FannyBurney, Elizabeth Carter etc. (Brief introduction to authors and their major works should be given)	

UNIT III **REPRESENTATIVE TEXTS**	**15hrs**

Sonnet s

- Sonnet 18 "Shall I Compare Thee to a Summer's Day" - William Shakespeare
- "On His Blindness" - John Milton

Lyrics

- "Sun Rising" - John Donne
- "A Poison Tree" - William Blake

Essays

- "Of Studies" - Francis Bacon
- "Will wimble" – Joseph Addison

Play

- **Julius Caesar- William Shakespeare:**

Teaching material

Note: Teachers could explore the web/online resources to access the various concepts and illustrative examples.

Books recommended and Suggested Reading

1. Andrew Sanders, *English Literature*, OUP, 2005
2. Edward Albert, *History of English Literature,* OUP, 2014
3. M. H. Abrams, *A Glossary of Literary Terms,* Cengage Publishers, New Delhi

COURSE – 6
INDIAN LITERATURE IN TRANSLATION

PAPER-2

Course	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
06	DSCC	Theory	03	03	45hrs	2 1/2hrs	40	60	100

COURSE OUTCOME :

After completion of course, students will be able to:

1) Understand the meaning and methods of translation
2) Comprehend the scope of translation in the modern age
3) Have the knowledge of Indian writers and literature in general
4) Appreciate the translated text

COURSE 6 **TITLE - INDIAN LITERATURE IN TRANSLATION**	**Total Hrs: 45**
UNIT I **INTRODUCTION TO TRANSLATION STUDIES**	**15hrs**
Introduction to Translation Studies in India References: • *Translation as Discovery* - Sujit Mukherjee • *Indian Literature in English Translation* - G. N. Devy	
UNIT II **REPRESENTATIVE TEXTS**	**15hrs**

Vachanas of Basavanna – No. 59 *Cripple me Father*, No. 161. Before the Gray Reaches Cheek Vachanas of Devar Dasimayya-No.123. *Bodied One Will Hunger*. Vachanas of Akkamahadevi-No. 199 '*For Hunger* Vachanas of Allama Prabhu- No.556. *If It Rains Fire* (from *Speaking of Shiva* Tr. A.K. Ramanujan) Kanakadasa: *Do Not Quarrel over Caste* (Tr. Dr. S. G. Vaidya) *Songs of Sheriff : O Brothers, See This Temple's Glory* (Tr. Dr. S. G. Vaidya)	
UNIT-III **REPRESENTATIVE TEXTS**	**15hrs**
• **Play** *Abijnan Shakuntala*-Kalidas	
Short Stories: • The Silent Rattle- Basu Bevingidad • The Poisoned Bread- Baburao Bagul, Tr.Ramesh Dnyate • The Broker- Ram Swaroop Kisan, Tr. Shyam Mathur • The Weed – Amrita Pritam, Tr. Raj Gill	

Teaching material

Note: Teachers could explore the web/online resources to access the various concepts and illustrativeexamples

Books Recommended and Suggested Reading

1. Sujit Mukharjee. *Translation as Discovery*
2. Sharma T. R. S. (Ed). *Ancient Indian Literature: An Anthology*, (Vols 2: Classical Sanskrit, Prakrit,Apabhramsa), New Delhi: Sahitya Akademi, 2000
3. Kumar, Sukrita Paul (Ed). *Cultural Diversity, Linguistic Plurality and Literary Traditions in India*.New Delhi: Macmillan, 2005
4. Dev, Anjana et al (Ed) *Indian Literature*. New Delhi: Pearson, 2000

BA IV Sem (Hon)

THE COURSE BA (ENGLISH) IN IV SEMESTER HAS TWO COURSES (COURSE 7 & 8) FOR 06 CREDITS:EACH COURSE HAS 03 CREDITS. BOTH THE COURSES ARE COMPULSORY.

COURSE -7

TITLE - BRITISH LITERATURE (19TH AND 20TH CENTURY) (PART 2)

Course	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative AssessmentMarks	Summative Assessment Marks	Total Marks
07	DSCC	Theory	03	03	45 hrs	2 1/2hrs	40	60	100

COURSE OUTCOME

After completion of course, students will be able to:

1) Learn the important trends and movements in the British literature of prescribed period
2) Identify and understand canonical literature of England
3) Distinguish the poets, playwrights and novelists of different periods
4) Appreciate some representative texts of the prescribed period

COURSE 7 **TITLE - BRITISH LITERATURE (19TH AND 20TH CENTURY) (PART 2)**	**Total Hrs: 45**
UNIT- I	**15 hrs**
Romantic Poetry, Victorian Poetry, Pre-Raphaelite Poetry, Oxford Movement, Victorian Novel, 19th century Prose, Modern Poetry, War Poetry, Oxford Poets, Modern Novel, Modern Drama, Modern Prose.	
UNIT-II **REPRESENTATIVE WRITERS, WORKS, TRENDS (ANY 20)**	**15hrs**

William Wordsworth, Jane Austen, Charles Lamb, William Hazlitt, Walter Scott, Alfred Tennyson, Matthew Arnold, John Ruskin, Thomas Carlyle, Bronte Sisters, Thomas Hardy, George Eliot, Charles Dickens, T. S. Eliot, W.B. Yeats, G. B. Shaw, Virginia Woolf, D. H. Lawrence, H G Wells, Somerset Maugham, John Galsworthy (Brief introduction to authors and their major works should be given)	
UNIT-III **REPRESENTATIVE TEXTS** **Poems:** John Keats : Ode on a Gracian Urn Matthew Arnold : Dover Beach W.H. Auden- The Unknown Citizen W B Yeats : Sailing to Byzantium **Four Essays:** Hazlitt : Going on a Journey George Orwell- How the Poor Die E V Lucas : Bores Stephen Leacock: On Further Progress in Specialization **Novel:** *Heart of Darkness* – Joseph Conrad	**15hrs**

THE COURSE BA (ENGLISH) IN IV SEMESTER HAS TWO COURSES (COURSE 7 & 8) FOR 06 CREDITS:EACH COURSE HAS 03 CREDITS. BOTH THE COURSES ARE COMPULSORY

COURSE - 8
GENDER STUDIES

Course	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
08	DSCC	Theory	03	03	45hrs	2 1/2hrs	40	60	100

COURSE OUTCOME :

After completion of course, students will be able to:

1. Understand the concept of gender studies
2. Learn the basics of patriarchy, sex and gender and gynocentrism
3. Understand the significance of Gender as a discourse
4. Appreciate literature by women writers

COURSE 8: GENDER STUDIES (PART 1)	**Total Hrs: 45**
UNIT-I **INTRODUCTION TO GENDER STUDIES**	**15hrs**
Concepts and trends: Sex and Gender, Femininity, Body, Feminist Politics, Patriarchy, Masculinity, Discrimination, Gyno centrism, Dichotomy, Third Gender, Masculinity, Queer Studies etc.	
Any Two Essays • *What is patriarchy? /Understanding Gender* - Kamala Bhasin • 'Towards Feminist Politics' - Elaine Showalter	
UNIT-II **REPRESENTATIVE WRITERS**	**15hrs**
Any Four Short Stories of Representative Writers • 'Three Thousand Stitches' – Sudha Murthy • 'Stone Women' – Shashi Deshpande • 'Gajar Halwa' – Geetha Hariharan • 'The Bonsai Life'- Abburi Chayadevi, Tr.Alladi Uma and M.Shridhar	

UNIT-III REPRESENTATIVE TEXTS	15hrs
Text: *Nine Indian Women Poets,* Ed. Eunice De Souza 1. " Tribute to Papa" –Mamta Kalia 2. " The Peacock"- Sujata Bhatt 3. "Request"- Tara Patel 4. " Purdah 1"- Imtiaz Dharker *Film as Text:* **Gulabi Talkies - Vaidehi**	

Teaching material

Note: Teachers could explore the web/online resources to access the various concepts and illustrativeexamples

Books Recommended and Suggested Reading

Butler, Judith. Gender *Trouble: Feminism and the Subversion of Identity.* Routledge, 1990.Connel, R. W. *Masculinities.* University of California Press, 1995.

Teaching material

Note: Teachers could explore the web/online resources to access the various concepts and illustrativeexamples

Books recommended and Suggested Reading

1.Andrew Sanders, *English Literature*, OUP, 2005

2. Edward Albert, *History of English Literature,* OUP, 2014

3. M. H. Abrams, *A Glossary of Literary Terms,* Cengage Publishers, New Delhi.

ASSESSMENT

- **FORMATIVE ASSESSMENT – 40 marks**
- **SUMMATIVE ASSESSMENT – 60 Marks**

TOTAL - 100 Marks

FORMATIVE ASSESSMENT – 40 marks

Assignment	10
Presentation – (Seminar/ Webinar)	10
Writing an Anthology (Group or Individual Activity) of Self Written Poems/Prose/Short Stories	10
Total	**40**

GENERAL PATTERN OF THEORY QUESTION COURSE FOR DSCC

(60 marks for semester end Examination with 2 1/2 hrs duration)

Part-A

1. Question number 1-06 carries 2 marks each. Answer any 05 questions : 10 marks

Part-B

2. Question number 07- 11 carries 05 marks each. Answer any 04 questions : 20 marks

Part-C

3.Question number 12-15 carries 10 marks each. Answer any 03 questions 30 marks
(Minimum 1 question from each unit and 10 marks question may have subquestions for 7+3 or 6+4 or 5+5 if necessary)

Note: Proportionate weight age shall be given to each unit based on number of hours prescribed.

ENGLISH OPEN ELECTIVE -3SPEAKING AND LISTENING SKILLS

[Teaching Hours: Lecture 3Hours -Credit 3]

(60 marks paper of Three Hours+ 40 Marks for Internal Assessment)

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1. Section I: Introduction to Phonetics

Speech Organs: Speech Mechanism – Classification of English Sounds, Description of English Vowels and Consonants, , IPA Symbols and Transcription (words); Stress and Intonation - Their Patterns of Stress and Intonation in English Sentences and words (Transcription of short dialogues);

2. Section II: Speaking Skills

Formal and Informal Speeches

Language Functions: Greetings, Making Requests, Persuading, Complaining, Apologizing, Asking for and Giving Permission, Instruction and Directions.

3. Section III: Listening Skills

1. What is Good Listening?
2. Types of Listening
3. Barriers to Listening

4. Section IV: Presentation Skills

1. Definition, Meaning and Goals of Presentation
2. Some Useful Expressions while Making Presentations – Opening Remarks, Stating Purposes, Giving an Outline, Giving Preliminary Information and Starting with a Context, Emphasizing Important Points, Drawing Attention to Visuals, Making Recommendation, Keeping Audience Involved, Summarising and Concluding, Inviting Questions.
3. Presentation in Practice - Making Welcome Speech, Introducing Guests to Audience, Making Farewell Speech, Proposing Vote of Thanks

Question Paper Pattern

1. Very Short Answer Questions on all sections 15x2 =30 Marks
2. Four Short Notes on all sections 2x 5 = 10 Marks
3. One Question on Presentation of Speeches 1x10 = 10 Marks
4. One Essay Type Question 1x10= 10 Marks

5. Suggested Reading:

1. Kenneth and Anderson and Tony Lynch. *Study Speaking*, OUP
2. Sethy J. Et. Al., *Practice Course in English Pronunciation*, Princeton Hall
3. Prasad P. *Communication Skills*
4. Balasubrahmanya. *A Course in Phonetics for Indian Students*, MacMillan
5. Jayashree Mohanraj, *Speak Well*, Black Swan

ENGLISH OPEN ELECTIVE -4

TRANSLATION THEORY AND PRACTICE

[Teaching Hours: Lecture 3 Hours -Credit 3]

(60 arks paper of Three Hours+ 40 Marks for Internal Assessment)

Course and Skill Outcome

1. This paper aims at teaching the students English language through literature.
2. It teaches them communication skills.

Syllabus

1. Translation- Meaning, methods, problems and challenges of Translation, Source Language and Target Language. Translating poetry and prose, Technical translation,
2. Problems of Translation
3. Translation in Practice (Practice five passages from Kannada to English and Fivepassages from English to Kannada)

Question Paper Pattern

1. Essay type questions on Translation Meaning, Definitions and methods and problems andchallenges 1x10=10
2. Problems of Translation 1x10=10
3. Short type questions on translation theory 2x5=10
4. Translation of short passages 2x5=10
5. Translation passage from English to Kannada
   (One out of Two) 1X10=10
6. Translation passage from Kannada to English
   (one out of two) 1X10=10

RANI CHANNAMMA UNIVERSITY, BELAGAVI

Curriculum for Under Graduate Programme in English-V and VI Semesters

(SYLLABUS)

BA

ENGLISH

5th and 6th Semester

[w.e.f. 2023-24]

Members of Board of Studies (UG)

01	Dr. Nagaratna V. Parande Professor and Chairperson Department of Studies in English Rani Chanamma University, Belagavi.	Chairperson
02	Shri. S. B. Khot Associate Professor Department of English MES Arts & Commerce College, Mudalagi.	Member
03	Shri. M. A. Biradar Associate Professor Department of English MGVC Degree College Muddebihal.	Member
04	Dr. P.B. Teggihalli Associate Professor Department of English CSB Arts, SMRP Science & GLR Commerce College, Ramdurg.	Member (Co- opt)

Terminology Used in the Curriculum

DSC	- Discipline Specific Core
DSE	- Discipline Specific Elective
OE	- Open Elective
AECC	- Ability Enhancement Compulsory Course
AEC	- Ability Enhancement Course
SEC	- Skill Enhancement Course
L	- Lecturing
T	- Tutorial
P	- Practical
IA	- Internal Assessment
SEE	- Semester End Exam
CIE	- Continuous Internal Evaluation
SB	- Skill Based
VB	- Value Based

Rani Channamma University, Belagavi

B.A. in English

Effective from 2023-24

Sem	Type of Course	Theory/ Practical	Course Title	Instruction /hour/ week	Total Hours/ Sem	Duration of Exam	Marks			Credits
							Form-ative	Summ-ative	Total	
V	DSC-A9	Theory	Literary Criticism	04 hours	60	2 hours	40	60	100	04
	DSC-A10	Theory	Life Narrative	04 hours	60	2 hours	40	60	100	04
	DSC-A11	Theory	American Literature	04 hours	60	2 hours	40	60	100	04
	SEC- 4	Theory & Practical	Employability Skills	02L+1P hours	30L+15P	1 hour	20	30	50	03
									Total	**15**
VI	DSC-A12	Theory	Post-Colonial Studies	04 hours	60	2 hours	40	60	100	04
	DSC-A13	Theory	Introduction to the History of English Language	04 hours	60	2 hours	40	60	100	04
	DSC-A14	Theory	Women's Writing	04 hours	60	2 hours	40	60	100	04
	Project/ Internship	Project/ Internship	Project/ Internship	4-6 contact hours	90 contact hours					02
									Total	**14**

A1–Curriculum and Content Chart for V and VI Semester B.A. English

Semester	Semester	Title/Name of the course	Assessment
V	DSC-A9	Literary Criticism	60S+40 F
	DSC-A10	Life Narratives	60S+40 F
	DSC-A11	American Literature	60S+40 F
	SEC 4	Employability Skills	30S+20 F
VI	DSC-A12	Post-Colonial Studies	60S+40 F
	DSC-A13	Introduction to the History of English Language	60S+40 F
	DSC-A14	Women's Writing	60S+40 F
	Project/Internship	Project Internship	30S+20F 0S+50F

B.A. English Programme

Name of the Degree Program: B.A. English
Discipline Core: English

Program Outcomes

By the end of the programme the students will be able to

- Develop a comprehensive foundation in literary studies and linguistic competencies.
- To study variety of translations to extend the knowledge and accumulate the literary experience
- Connect art and life through the study of Humanities with its Multi-dimensional development
- Develop their ability to read closely the texts and contexts and, think critically to connect literature with life and culture.
- Develop curiosity and interest towards higher studies and research in literature and humanities
- Develop ethical values and moral responsibility and social commitment by reading varieties of texts
- Provide scope for employability and entrepreneur skills as part of career opportunities.
- Provide practical and experiential learning through classroom activities, field study and projects
- Encourage for the contemporary and comparative study of literature.
- Study colonial, post-colonial literature, life narratives, bio-pictures of the universal life and culture
- Respect subaltern class

Learning Outcomes for the Bachelor of Arts English Programme

By the end of the program, the students will be

- Exposed to demonstrate a broad knowledge of litterateurs and their texts
- Enriched in Comparative study of literature and developed the familiarity with the world literature such as Indian, American, African writers, and their ethos
- Enriched their soft skills, employability skills, entrepreneur skills and prepared for job market
- Developed critical analysis of the texts and their relevance at the present context
- Able to develop language ability, creativity by means of multiple experience they gain from the study of humanities
- Developed an awareness about the major forms of literature and new trends and developments from the colonial and postcolonial study of literature such as life narratives, memoirs, biographies and bio-pictures etc
- Equipped with literary and linguistic skills such as aesthetics, rhetorical skills and presentation skills
- Able to articulate and inculcate knowledge through colonial and post-colonial developments through comparative literature
- Able to locate and contextualize texts across theoretical orientations and cultural spaces.
- Developed research culture in literature and humanities and ability to connect life with art.

B.A. English
Semester V
Discipline Specific Course (DSC)
Course– A9
Title of the Course–Literary Criticism

Course	**A9**
Type of Course	DSC
Theory/Practical	Theory
Credits	4
Instruction hours per week	4
Total No. of Lectures/Hours Semester	60
Duration of Exam	2 hours
Formative Assessment Marks	40
Summative Assessment Marks	60
Total Marks	100

Content of the Course A9: Literary Criticism		**60 Hours**
Unit-1	**Introduction to Criticism**	15
What is criticism? Meaning, Definitions, Functions, Methods of Criticism Show your acquaintance with following critics- Philip Sydney, John Dryden, Alexander Pope, Samuel Johnson, P B Shelley, D.H Lawrence, F. R Leavis, I. A Richards.		
Unit-2	**Classical Criticism**	15
● Plato's concept of mimesis, ● Aristotle's Concept of Tragedy ● Longinus' Concept of Sublime		
Unit–3	**Romantic Criticism**	15
• Coleridge's Theory of Imagination • Preface to the Lyrical Ballads – William Wordsworth • Concept of Style in Literature		
Unit–4	**Modern Criticism**	15
• Touchstone Method- Mathew Arnold • Tradition and Individual Talent – T. S Eliot • Four Kinds of Meaning – I. A Richards * Tension in Poetry -Allen Tate		

Suggested Reading:

1. N. Krishnaswamy and others, *Contemporary Literary Theory* –, Delhi, Macmillan, 2003.
2. Biradar S.B. *Literary Criticism and Theory*.
3. Adams, Hazard. *Critical Theory Since Plato*. New York, Harcourt Brace Jovanovich, 1971.
4. Abrams, M.H. *A Glossary of Literary Terms*. (8th Edition) New Delhi Akash Press, 2007
5. Baldick, Chris. *The Oxford Dictionary of Literary Terms*. Oxford: Oxford University Press, 2001.
6. Barry, Peter *Beginning Theory: An Introduction to Literary and Cultural Theory.* New Delhi: Viva Books, 2008.
7. Fowler, Roger. Ed. *A Dictionary of Modern Critical Terms.* Rev.ed. London: Routledge & Kegan Paul, 1987.
8. Habib, M.A.R. *A History of Literary Criticism: From Plato to the Present*. London: Blackwell, 2005.
9. Hall, Donald E. *Literary and Cultural Theory: From Basic Principles to Advanced Application*. Boston: Houghton, 2001.
10. Hudson, William Henry. *An Introduction to the Study of Literature*. New Delhi: Atlantic, 2007.

Pedagogy: Lectures, Seminar, Roleplay, Group Discussion

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Internal Assessment Tests (2)	20
Assignment	05
Class Activity	05
Seminar	10
Total	**40**

BA English
Semester V
Discipline Specific Course (DSC)
Course: A10
Title of the Course: Life Narratives

Course	A10
Type of Course	DSC
Theory/Practical	Theory
Credits	4
Instruction hours per week	4
Total No. of Lectures/Hours Semester	60
Duration of Exam	2 hours
Formative Assessment Marks	40
Summative Assessment Marks	60
Total Marks	100

Content of Course A 10 –Life Narratives		**60 Hours**
Unit –1	**Introduction to Life Narratives**	15
What are Life Narratives? –Genres of Life Writings– "Introduction" from *The New Critical Idiom: Autobiography*- Linda Anderson		
Unit–2	**Autobiography**	15
Unbreakable-M C Mary Kom		
Unit–3	**Memoirs & Diaries**	15
● *Memoirs of my Working Life (*Chapter6)–Sir M. Vishveshwarayya ● My Boyhood Days – Rabindranath Tagore		
Unit–4	**Biography & Biopics**	15
● The Desert Flower – Waris Dirie ● Bhaag Milkha Bhaag - directed by Rakesh Mehra		

Suggested Reading:

1. Anderson, Linda. *Autobiography.* Rout ledge, London, 2011.
2. Anderson, Linda. *Women and Autobiography in the Twentieth Century: Remembered Futures*. Prentice hall, Harvester Wheat sheaf, London, 1997.
3. Andrews, William L, and Douglas Taylor. *Richard Wright's Black Boy (American Hunger): A*

Casebook. Oxford University Press, New York, 2003.

4. Baggerman et al (eds.). *Controlling Time and Shaping the Self Developments in Autobiographical Writing since the Sixteenth Century*. Brill, Leiden, 2011.
5. Lejeune, Philippe. *On Autobiography* of Minnesota P, Minneapolis, 1988.
6. Lionett, Françoise. *Autobiographical Voices: Race, Gender, Self-Portraiture*. Cornell UP, Ithaca, 1991.
7. Smith, Sidonie A. & Julia Watson, eds. *Reading Autobiography: A Guide for Interpreting Life Narratives.* U of Minnesota P, Minneapolis, 2001.
8. Weintraub, Karl J. *The Value of the Individual: Self and Circumstance in Autobiography*. Chicago UP, Chicago, 1982.

Pedagogy: Lectures, Seminar, Roleplay, Group discussion, Watching Movie.

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Internal Assessment Tests (2)	20
Assignment	05
Class Activity	05
Seminar	10
Total	**40**

B.A. English
Semester V
Discipline Specific Course (DSC)
Course: A-11
Discipline Specific Course (DSC)
Title of the Course: American Literature

DSC A-11: American Literature	
Course	A–11
Type of Course	DSC
Theory/Practical	Theory
Credits	4
Instruction hours per week	4
Total No. of Lectures/Hours Semester	60
Duration of Exam	2 Hours
Formative Assessment Marks	40
Summative Assessment Marks	60
Total	100

Content of Course A-11: American Literature	**60 Hours**
Unit –1 A Brief History of American Literature	15
Trends, Movements and Dominant themes in American literature – Melting Pot, Salad Bowl, Frontier Puritanism, American dream, American Transcendentalism, Individualism,	
Unit - 2 Introduction to major American writers	15
Hawthorne, Melville, Henry David Thoreau, Mark Twain, Hemmingway, Emily Dickinson, Walt Whitman, Robert Frost, Sylvia Plath, Toni Morrison, Alice Walker. Dominant themes in American literature - Puritanism, American dream, American Transcendentalism, individualism, frontier, manifest destiny	
Unit–3 Poems	15
1. "O Captain! My Captain!" –Walt Whitman 2. "My Life had Stood"– Emily Dickinson 3. "A Loaded Gun" -Emily Dickinson 4. "Because I could not stop for Death"-Emily Dickinson 5. "The Road Not Taken"- Robert Frost 6. "Mending Wall"-Robert Frost 7. "Theme for English B" -Langston Hughes 8. "Mad Girl's Love Song"–Sylvia Plath	
Unit–4 Fiction	15
Old Man and the Sea - Ernest Hemingway	

Suggested Reading:

1. Hassan, Ihab. *Contemporary American Literature, 1945-1972: An Introduction*. Ungar, New York, 1973.
2. Henderson, Stephen, ed. *Understanding the New Black Poetry*. William Morrow, New York, 1973.
3. Hoffman, Danielle. *Harvard Guide to Contemporary Writing*. Harvard University Press, Cambridge, 1979.
4. Kiernan, Robert F. *American Writing Since1945: A Critical Survey*. Frederick, Ungar, New York, 1983.
5. Lawrence, Shaffer. *History of American Literature and Drama*. New Sarup, Delhi, 2000.
6. Lewis, Allan. *American Plays and Playwrights of the Contemporary Theatre.* Rev. Ed. Crown, New York, 1970.
7. Moore, Harry T., ed. *Contemporary American Novelists*. Southern Illinois University Press, Carbondale, 1964.
8. Pattee, Fred Lewis. *The Development of the American Short Story: An Historical Survey.* Bible and Tannen, New York, 1975.

Pedagogy: Lectures, Seminar, Role play, Group discussion.

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Internal Assessment Tests (2)	20
Assignment	05
Class Activity	05
Seminar	10
Total	**40**

B.A. English
Semester V
Skills Enhancement Course (SEC)
Course: SEC 4
Title of the Course: Employability Skills

SEC-4: Employability Skills	
Course	**SEC-4**
Type of Course	**SEC**
Theory/Practical	Theory and Practical
Credits	3
Instruction hours per week	3
Total No. of Lectures/Hours Semester	30 L + 15P
Duration of Exam	1 Hour
Formative Assessment Marks	20
Summative Assessment Marks	30
Total	50

Content of Course SEC-4: Employability Skills	**30 L+ 15 P Hours**
Unit –1 Employability	10+5
● What is employability? ● The significance of the Employability skills ● Measures to improve the students' employability skills ● Entrepreneurial skills.	
Unit II Communication Skills	10 +5
● Communication and Types of Communication ● Barriers to Effective Communication ● Communication cycle and Importance of Feedback ● Interpersonal Skills	
Unit–III Soft skills	10+5
● What are soft skills? ● Body Language ● Emotional Intelligence ● Life Skills	

Suggested Reading:

1. *Building Soft Skills for Employability*-Tran Le Huu Nghia
2. *Employability Skills* –I Dr. S. K. Singh
3. *Enhance Your Employability* –Dr. Frederick Sidney Correa and Frederick Savio Correa
4. *Effective Communication Skills* –Robert King
5. *Soft Skills and Employability Skills* - Cambridge Sabina Pillai and Agna Fernandez
6. *Employability Skills* -NSQF
7. *Employability Skills* –Oxbridge

8. *Employability Skills* - Shilpi Dixit and Nisha Yadav

9. *Employability Skills* - NCERT

10. *Enhancing Employability –Soft Skills* –Shalini Verma

11. *Brilliant Employability Skills* –Frances Trought

12. *A Textbook of Employability Skills*- JKP Publications.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Viva	10
Assignment	05
Seminar/ Class Activity	05
Total	**20**

B.A. English
Semester VI
Discipline Specific Course (DSC)
Course–A12
Title of the Course: Postcolonial Studies

Course	A12
Type of Course	DSC
Theory/Practical	Theory
Credits	4
Instruction hours per week	4
Total No. of Lectures/Hours Semester	60
Duration of Exam	2 Hours
Formative Assessment Marks	40
Summative Assessment Marks	60
Total Marks	100

Content of Course A12: Postcolonial Studies	**60 Hours**
Unit-1 Introduction to Post colonial Studies	15
Key concepts: Colonialism, Anti-colonialism, Decolonization, Discourse, Neo-colonialism, Hegemony, Hybridity, Imperialism, Orientalism, Post-colonialism. Text: Minutes of Education – Macaulay	
Unit-2 Essays on Postcolonial Studies	15
1. "The Beginnings of English Literary Study" in British India - Gauri Vishwanathan 2. "On National Cultures" in The Wretched of the Earth - Frantz Fanon (Source: Literature in The Modern World: Critical Essays and Documents Edited by Dennis Walder) 3. Introduction to The Empire Writes Back – Bill Ashcroft, Gareth Griffiths and Helen Tiffin	
Unit–3 Postcolonial Texts and Talks	15
"The Danger of a Single Story"–Chimamanda Adichie (TED Talk, Transcript) Source:https://www.hohschools.org/cms/lib/NY01913703/Centricity/Domain/817/English%2012%20Summer%20Reading%20-%202018.pdf	
"The Gentlemen of Jungle"- Jomo Kenyatta "Caste Out" (poem)-Meena Kandaswamy	
Unit–4 Fiction	15
Things Fall Apart- Chinua Achebe	

Suggested Reading

1. Abrams M H, and Harpham.*A Glossary of Literary Terms.* Engage Learning, New Delhi, 2014.
2. Barry, Peter. *Beginning theory: An introduction to literary and cultural theory. MUP*, Manchester, 2017.
3. Vincent B., etal. *The Norton Anthology of Theory and Criticism*, WW Norton and Company, London, 2018.

Pedagogy: Lectures, Seminar, Role play, Group discussion

Formative Assessment	
Assessment Occasion /type	**Weightage in Marks**
Internal Assessment Tests (2)	20
Assignment	05
Class Activity	05
Seminar/ Project	10
Total	**40**

B.A. English
Semester VI
Discipline Specific Course (DSC)
Course–A13
Title of the Course: Introduction to the History of the English Language

Course	A13
Type of Course	DSC
Theory/Practical	Theory
Credits	4
Instruction hours pe week	4
Total No. of Lectures/Hours Semester	60
Duration of Exam	2 Hours
Formative Assessment Marks	40
Summative Assessment Marks	60
Total Marks	100

Content of CourseA13: Introduction to the History of the English Language	**60 Hours**
Unit-1 Origin and Development of the English Language	15
Language Families Indo-European Family of Languages English as part of Germanic Family Landmarks in the development of the English Language	
Unit-2 Influences on the English Language	15
Latin Influence: Words such as Medium, Equivalent, Index, Genius, Scribe, Church, Memento, Ego, Complex, Legitimate, Vacuum, Minimum, Status, Fungus, Species **Greek Influence: Words such as** Graph, Phone, Character, Chorus, Academy, Bible, Harmony, Ecstasy, Nymph, Tragedy, Tyrant, Theatre, Irony, Alphabet, Drama, Elegy, Pathos, Epic, Theory, Museum, Hyphen, Dogma, Psychology, Neurology. **French Influence: Words such as** Court, Chancellor, Warden, Guardian, Guarantee, Warrant, Prior, Baptist, Cardinal, Castel, Chapel, Grace, Service, Ballet, Champagne, Naive, Soup, Penchant, Profile, Restaurant, Menu, Chef, Baton. **Other Influences** **Scandinavia**: Fellow, Wrong, Urge, Outlaw, Snare, Hit, Take, Root, They, Their, Them, Skill, Wing, Ugly, Sky, Weak, Loan, Both, Bleak, Same, Husband, ill.	

India: Nirvana, Swastika, Karma, Ahimsa, Sahib, Nawab, Mongoose, Bungalow, Vishnu, Bangle, Shampoo, Khushi, Khaki. **Arab**: Algebra, Cipher, Zenith, Saffron, Admiral, Cotton, Amber, Assassin, Magazine, Fakir, Imam, Madrasah, Harem, Gazelle.	
Unit–3 Makers of the English Language	15
Bible Translators, William Shakespeare, John Milton, Dr Johnson	
Unit–4 Language Development	15
Development of Spelling and Pronunciation; Development of English Dictionaries; Standard English; English as World Language; Varieties of English; Influence of Radio and Television on the usage of English language; Influence of cinema on the English language; Influence of social media on the English language, Mobile SMS Language.	

Suggested Reading

1. Wrenn C. L. *The English Language.* Vikas Publishing, India, 2022.
2. Baugh A.C.*A History of English Language.* Routledge, India, 2012.
3. Emerson and Oliver Farrar. *An Outline History of the English Language.* Mac Millan, New York, 1906.
4. Crystal David. *English as a Global Language.* Cambridge University Press, New York, 1997.

Pedagogy: Lectures, Seminar, Role play, Group discussion

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Internal Assessment Tests (2)	20
Assignment	05
Class Activity	05
Seminar/ Project	10
Total	**40**

B.A. English
Semester VI
Discipline Specific Course (DSC)
Course-A 14
Title of the Course: Women's Writing

Course A 14: Women's Writing	
Course	A14
Type of Course	DSC
Theory/Practical	Theory
Credits	4
Instruction hours per week	4
Total No. of Lectures/Hours Semester	60
Duration of Exam	2 hours
Formative Assessment Marks	40
Summative Assessment Marks	60
Total Marks	100

Content of Course A14- Women's Writing	**60 Hours**
Unit –1 Introduction to Women's Writing	15
● *Women Writing in India: 600B.C.to the early twentieth century (*Introduction) – Susie Tharu and K Lalitha - Eds ● *A Room of One's Own (*Chapter–1)-Virginia Woolf	
Unit–2 Poems	15
● "She" - Lakshmi Kannan ● "Palanquin Bearers" - Sarojini Naidu ● "Women Like Me"- Maram Al-Massri ● "Still, I Rise" – Maya Angelou ● "Flying Inside Your Own Body" - Margaret Atwood	
Unit–3 Short Stories	15
● "Two Words"–Isabel Allende ● "A Cup of Tea" –Catherine Mansfield ● "Jungle Major"–Temsula Ao	
Unit–4 Novel	15
Nampally Road – Meena Alexander	

Suggested Reading:

1. Lalita K and Susie J. Tharu, editors. *Women Writing in India: 600B.C. to the early twentieth century*. Feminist Press, New York, 1991.
2. Woolf Virginia. *A Room of One's Own*. Hogarth Press, London, 1929.
3. Simone de Beauvoir. *The Second Sex*. Penguin Random House, New York, 1972.
4. Gilbert Sandra M and Susan Guber, editors. *The Madwoman in the Attic: The Woman Writer and the Nineteenth-Century Literary Imagination*. Yale University Press, New Heaven Conn. and London, 2000.
5. Elaine Showalter, A *Literature of Their Own*. Princeton University Press, U.S.A., 1999.
6. Plain Gill and Susan Sellers, editors. *A History of Feminist Literary Criticism*. Cambridge University Press. 2007.
7. Essay to be read: Helen Carr, "A History of Women's Writing" and Mary Eagleton, "Literary Representations of Women"

https://mthoyibi.files.wordpress.com/2011/09/05-history-of-feminist-literarycriticism_gill-plain-andsus.pdf

Pedagogy: Lectures, Seminar, Roleplay, Group discussion

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Internal Assessment Tests (2)	20
Assignment	05
Class Activity	05
Seminar	10
Total	**40**

Internship

(For Graduate Programme as per UGC & AICTE)

Course title	Internship Discipline specific
No of contact hours	90
No credits	2
Method of evaluation	Presentations/Report submission/Activity etc.,

- Internship shall be Discipline Specific of 90 hours (2 credits) with a duration 4-6 weeks.
- Internship may be full-time/part-time (full-time during semester holidays and part-time in the academic session)
- Internship mentor/supervisor shall avail work allotment during 6^{th} semester for a maximum of 20 hours.
- The student should submit the final internship report (90 hours of Internship) to the mentor for completion of the internship.
- The detailed guidelines and formats should be followed as prescribed in UGC and AICTE guidelines.
- **Internship Process:**

  Students have to visit local schools or corporate offices or Media offices to understand the use of English language.
- **Expected Activities:**

  Teaching in schools (Primary school or High School) for 15 to 20 days

  Or

  Apprentice work experience in Front Desk Office for 15 to 20 days

  Or

  Work in Media Houses (newspaper, TV etc.) for 15 to 20 days

Formative Assessment (Internship)	
Assessment Occasion/ type	**Marks**
Field Visit + Report Submission	20
Evaluation of the Report	10
Presentation	10
Viva-voce	10
Total	**50**

Project

The project work aims to deepen the students' understanding of language and literature. Through this project, they will have the opportunity to analyze, interpret, and engage with various literary texts. This project will require research, critical thinking, and creativity, and it will serve as a platform for students to showcase their insights and skills. It aims to develop valuable skills in literary analysis, research, and presentation.

Students will be encouraged to undertake a project work in disciplines relatedto literature of contemporary interest and English Language.

Suggested Areas:

1. Postcolonial Literature
2. Cultural Studies
3. Translation Studies
4. Folklore
5. Performing Arts
6. Gender Studies
7. Dalit and Subaltern Discourses
8. Media Studies
9. Indian Literature in English Translation
10. English Language

- The distribution of marks: The Project Work will be for 50 marks of which 30 will be for dissertation and 20 for viva-voce.
- Students need to work under the guidance of teachers and submit the dissertation consisting of 30-50 pages two weeks prior to the summative exam.

UG Programme: 2023-24

GENERAL PATTERN OF THEORY QUESTION PAPER FOR DSC

(60 marks for semester end Examination with 2 hours duration)

Part-A

1. Objective type questions (covering all the four units) 10X1=10 marks

Part-B

2. Short notes 2out of 4 (on all units) 2X5=10 marks

Part-C

3. Essay type questions (on all units) 4X10=40 marks

Total: 60 Marks

QUESTION PAPER PATTERN FOR SEC (THEORY)

(30 marks for semester end Examination with 1 hour duration)

Part-A

1. Short Answer Questions (Any 5) 5X2= 10 marks

Part-B

2. Short Notes (Any 2) 2X5=10 marks

Part-C

3. Essay type Questions (Any 1) 1X10= 10 marks

(Minimum 1 question from each unit)

Total: 30 Marks

RANI CHANNAMMA UNIVERSITY, BELAGAVI

DRAFT

COURSE STRUCTURE AND SYLLABUS

As per the Choice Based Credit System (CBCS) designed in accordance with Learning Outcomes-Based Curriculum Framework (LOCF)

For

UNDERGRADUATE DEGREE IN HINDI LANGUAGE

Leading to

BACHELOR'S IN

B.A./B.Com./B.Sc./B.C.A.,B.B.A.B.S.W.

w. e. f.

Academic Year 2021-22 and onwards

नई शिक्षा नीति के तहत हिंदी पाठ्यक्रम की संरचना

1	**Prof. Vinod Gayakawad** **Dean, Language Dept.** **Rani Channamma University, Belagavi**	**Chairman**
2	**Smt. Jayashree Anchi** **Head, Dept. of Hindi** **Maratha Mandal College, Belagavi**	**Member**
3	**Prof. M. M. Reddy** **PG Hindi Dept.** **Vivekanand College, Bengaluru**	**Member**
4	**Dr. Rajendra J. Powar** **Head, Dept. of Hindi** **R P D College, Belagavi**	**Co-opt Member**

प्रस्तावना

इस पाठ्यक्रम की संरचना ऐसी की गई है कि इसके अध्ययन के पश्चात हिंदी साहित्य का विद्यार्थी यह जान सके कि साहित्य का विश्लेषण कैसे किया जाए, उसकी सराहना कैसी की जाए और दिए गए पाठ को पढ़ने की समझ किस प्रकार विकसित की जाए ताकि विद्यार्थी भाषा और साहित्य के उद्देश्य से भली भाँति परिचित हो सके। यह उल्लेखनीय है कि चयन आधारित क्रेडिट प्रणाली में हिंदी भाषा और साहित्य के पाठ्यक्रम की विशिष्ट भूमिका है। प्रस्तावित पाठ्यक्रम में भाषा के रूप में हिंदी के अध्ययन के लिए 4 स्ट्रीम्स बनायी गयी हैं, जिससे विद्यार्थी अपने अनुशासन के अनुसार हिंदी भाषा का अध्ययन कर सके। साथ ही ओपन इलेक्टीव कोर्स का भी निर्माण हिंदी में रोज़गार को ध्यान में रखकर किया गया है।

वर्तमान समय सूचना क्रांति का है। यह पाठ्यक्रम रोज़गारपरक शिक्षा देने का कार्य भी करेगा जिससे इसके अध्ययन के बाद विद्यार्थी अपने जीवन का निर्वाह भी उचित ढंग से कर सके। इसमें उल्लेखित पाठों के अध्ययन के उपरांत विद्यार्थी न केवल अपने विवेक को विकसित कर सकते हैं बल्कि विश्लेषण करने में भी समर्थ हो सकते हैं। ।

पाठ योजना के लिए शिक्षण आधारित दृष्टिकोण

हिंदी साहित्य और भाषा का अध्ययन वैज्ञानिकता की दृष्टि से महत्वपूर्ण है। इसका सीधा संबंध संवेदना और जीवन से है। विषय के रूप में इसको स्नातक अध्ययन के पाठ्यक्रम में आरंभ से ही न केवल सम्मिलित किया गया है बल्कि उसके विस्तार और नियोजन में विशेष रूप से मानव मूल्यों और सामाजिक यथार्थ को सम्मिलित करने का भी प्रयास किया

गया है। साहित्य का संबंध समाज से होता। साहित्यकार समाज की यथार्थ स्थिति का न केवल अवलोकन करता है बल्कि उसे भाषा के माध्यम से साहित्य में रुपायित भी करता है। हिंदी साहित्य समृद्ध है और लोकप्रिय भी है जो गद्य और पद्य में लिखा गया है। हिंदी साहित्य और भाषा के सांस्कृतिक, सामाजिक, आध्यात्मिक जैसे अनेक पक्ष हैं और वर्तमान में यह साहित्य मानवतावादी, यथार्थवादी संवेदना और अस्मितामूलक दृष्टि से संपृक्त है।

हिंदी के स्नातक पाठ्यक्रम का उद्देश्य निम्नांकित लक्ष्यों को प्राप्त करना है

- मूलभूत कौशल श्रवण, लेखन और अभिव्यक्ति का विकास करना।

- भाषा कौशल का विकास करना।

- उच्चारण और लिपि का सही ज्ञान कराना।

- विद्यार्थियों को संवेदनशील नागरिक बनाना।

- एक कुशल वक्ता का निर्माण करना।

- समाज और समुदाय के प्रति संवेदनशील दृष्टि का विकास करना।

- राष्ट्रीय चेतना का विकास करना।

- मानवीय मूल्यों के प्रति स्वस्थ दृष्टिकोण विकसित करना।

- विभिन्न साहित्यिक विधाओं की जानकारी देना।

- समाज के विभिन्न समुदायों के प्रति सहिष्णुता की भावना का विकास करना।

- साहित्यिक विमर्शों से परिचित करना।

- साहित्यिक पाठ और उनके संदर्भों में आलोचनात्मक प्रवृति और कल्पनाशीलता का कौशल निर्माण करना।

- उच्च अध्ययन और अनुसंधान में बहुविषयक दृष्टिकोण स्थापित करना।

- विद्यार्थियों में समावेशी दृष्टिकोण, जिम्मेदार नागरिकता, नैतिक सोच और सामजिक प्रतिबद्धता की भावना का निर्माण करना।

- रोज़गार के लिए उचित व्यावसायिक कौशल में छात्रों को प्रशिक्षित करना।

 - तकनीकी रूप से उन्नत विश्व में विद्यार्थियों को इसकी चुनौतियों और अवसरों के लिए तैयार करना।

- व्यावहारिक और अनुभवात्मक शिक्षण के लिए सक्षम करना।

यह पाठ्यक्रम विभिन्न स्तरों पर विद्यार्थियों की योग्यता का उन्नयन करने में सहायक हो सकेगा, साथ ही साथ यह सामाजिक जटिलताओं को साहित्य के माध्यम से समझाने में भी निर्धारक के रूप में काम करेगा। साहित्य के साथ साथ भाषा की समझ भी विद्यार्थियों में विकसित होगी जिसकी सहायता से विद्यार्थी चिंतन, विश्लेषण और मूल्यांकन से संबंधित आधार बिंदुओं को जान सकेंगे। उनकी रोज़गार पाने की योग्यता तो विकसित होगी ही साथ ही विभिन्न संदर्भों को जान सकेंगे।

परिणाम (Out Come)

इस पाठ्यक्रम के पठन पाठन की दिशा नें निम्मलिखित परिणाम सामने आएंगे।

- हिंदी भाषा की आरंभिक स्तर से लेकर वर्तमान के बदलते रूपों की जानकारी प्राप्त की जा सकती है।

- भाषा के सैद्धान्तिक रूप के साथ साथ व्यावहारिक रूप भी जाना जा सकता है।

- उच्च शैक्षिक स्तर पर हिंदी भाषा किस प्रकार महत्वपूर्ण भूमिका निभा सकती, इससे संबंधित परिणाम प्राप्त हो सकते है।

- भाषागत मूल्यों को व्यावहारिक रूप को भी जान सकते है।

- प्रयोजनमूलक हिंदी, पत्रकारिता, अनुवाद आदि के अद्यापन, अध्ययन के द्वारा व्यावसायिकता की क्षमता में बढावा प्राप्त होगा।

- भारतीय साहित्य के अध्ययन से छात्रों के ज्ञान विस्तार तथा अभिव्यक्ति क्षमता में विकास होगा।

- साहित्य के माध्यम से सौंदर्यबोध, नैतिकता, सामाजिक समरसता, पर्यावरण संबंधी विषयों की समझ विकसित होगी।

- भाषायी और साहित्यिक क्षमता में सघन होंगे।

- गंभीर, समीक्षात्मक और स्वतंत्र चिंतन के लिए सक्षम होंगे।

- अपने विचारों को व्यक्त करने तथा बहुआयामी व्याख्याओं को समझने के लिए तैयार होंगे।

- रचनात्मकता में अभिरूचि का निर्माण होगा।

- साहित्येतिहास के अध्ययन से साहित्यकार के युगबोध का परिचय होगा।

- काव्यशास्त्रिय सिद्धान्तों के अध्ययन से विश्लेषण की क्षमता का निर्माण होगा।

- वर्तमान तकनीकी वातावरण में हिंदी के प्रयोग में दक्ष होंगे।

- अनुवाद, रिपोर्ट लेखन, कविता, कहानी आदि की प्रस्तुति का अनुभव प्राप्त करेंगे।

शिक्षण पद्धति (Pedagogy)

सीखने की प्रक्रिया में हिंदी भाषा की दक्षता को मजबूत बनाना होगा। विद्यार्थी हिंदी भाषा में नएपन और वैश्विक माध्यम की निर्माण प्रक्रिया में सहायक बन सकें। अपनी भाषा में व्यवहार और निपुणता प्राप्त कर सकें। साहित्य की समझ विकसित कर सकें तथा आलोचनात्मक एवं साहित्यक विवेक निर्मित किया जा सकें। इसलिए निम्नलिखित शिक्षण पद्धति का उपयोग किया जा सकता है।

- व्याख्यान

- संवाद एवं बहस

- सामूहिक चर्चा

- कक्षाओं में पठन-पाठन की पद्धति

- परिवेश का सृजन

- अभिनय पद्धति का प्रयोग

- क्षेत्रीय अथवा परियोजना कार्य

- अध्ययन से संबंधित पर्यटन

- प्रदर्शन कलाओं को वास्तविक रूप देना

- लिखित परीक्षा

- आतंरिक मूल्यांकन

- शोध सर्वेक्षण

- वाद-विवाद

- दृश्य-श्रव्य माध्यम का प्रयोग

- आलोचनात्मक मूल्यांकन पर बल

- आई सी टी का उपयोग

- यू ट्यूब चॅनेल का प्रयोग

- तंत्रज्ञान द्वारा पैराग्राफ लेखन

- रचनात्मक अभिव्यक्ति

- मूल्यांकन पद्धति

सेमेस्टर के अनुसार परीक्षा परिणाम तैयार किये जाए। सेमेस्टर के अंतर्गत आतंरिक मूल्यांकन, सतत मूल्यांकन और सत्र के अंत में ली जानेवाली परीक्षा सम्मिलित हो। प्रत्येक सेमेस्टर में निर्धारित कोर्स के लिए प्रश्नपत्र 100 अंकों का हो। जिसमें 30 अंक आतंरिक मूल्यांकन और सत्रांत परीक्षा में 70 अंक निर्धारित है। आंतरिक मूल्यांकन में कक्षा में आयोजित की जानेवाली परीक्षा, मौखिक प्रस्तुतियाँ, संगोष्ठी,साक्षात्कार, लघु उत्तरीय प्रश्न और तकनीकी ज्ञान के परीक्षण के आधार पर मूल्यांकन किया जाना चाहिए। इस प्रकार विद्यार्थी का समग्र मूल्यांकन हो सकेगा। उक्त प्रश्नपत्र में तीन तरह के प्रश्न होने चाहिए: बहुविकल्पीय, लघु उत्तरीय दीर्घ उत्तरीय, व्याख्या या संदर्भ।

UNDER GRADUATE IN HINDI

HINDI (AECC)

B. Com.: Ability Enhancement Compulsory Course (AECC)
B.Sc.: Ability Enhancement Compulsory Course (AECC)
B.A: Ability Enhancement Compulsory Course (AECC)
BBA /BCA/BSW Etc. Courses: (AECC)

QUESTION PAPER PATTERN WITOUT PRACTICAL

Qn. No.	Particulars		Marks	Total
	SECTION - A			
I	Objective Type Questions (Compulsory)	10 out of 12	01	10
II	Reference to Context	3 out of 5	05	15
	SECTION - B			
III	Essay type Answer Questions	2 out of 4	10	20
	SECTION - C			
IV	Short Answer Questions	5 out of 7	2	10
V	Short Answer Question	1 out of 2	5	5
	Total			**60**
Internal Assessment	1st Interenal Test		10	40
	2nd Interenal Test		10	
	Assignment		10	
	Attendance		10	
	Total			100

BA with One Major and One Minor / Without Practical Discipline Specific Core / Discipline Elective / Open Elective HINDI (DSC /DSE /OE)

QUESTION PAPER PATTERN WITOUT PRACTICAL

Qn. No.	Particulars		Marks	Total
I	Objective Type Questions (Compulsory)	10 out of 12	01	10
II	Short Answer Questions	5 out of 7	02	10
III	Essay type Answer Questions	2 out of 4	10	20
IV	Short Answer Questions	4 out of 6	5	20
Total				60
Internal Assessment	1st Interenal Test		10	40
	2nd Interenal Test		10	
	Assignment		10	
	Attendance		10	
	Total			100

Hindi
Syllabus of B.Com. Ability Enhancement compulsory Course
AECC

Title of the Subject/Discipline : A1 साहित्यिक विधा : गद्य संकलन+व्याकरण				
Year	**1**	**Course Code : AECC-1-HINDI (B.Com.)**	**Credits**	**3**
Sem.	**1**	**Course Title/Discipline :** **Collection of Prose + Grammer** **Text नूतन गद्य संग्रह(गद्य संकलन)** **सुमित्र प्रकाशन, इलाहाबाद-1**	**Hours**	**4**
Formative Assessment Marks :30 Summative Assessment Marks :70 Duration of ESA :64 hrs.				
Learning Outcomes	**1. हिंदी गद्य की विभिन्न विधाओं से परिचित होंगे।** **2. गद्य के अध्ययन से रचनात्मक लेखन में रुचि उत्पन्न होगी।** **3. हिंदी भाषा के शुद्ध स्वरूप को समझेंगे।** **4. भाषा कौशल का विकास होगा।**			

Unit No.	**Course Content**	**Suggested Pedagogy**	**Hours L/P/L**
Unit I	नूतन गद्य संग्रह (गद्य संकलन) के पाठ क्र. 1,2,3	**1. कक्षा व्याख्यान** **2. संवाद एवं बहस** **3. सामूहिक चर्चा** **4.रचनात्मक अभिव्यक्ति**	**16**
Unit II	नूतन गद्य संग्रह (गद्य संकलन) के पाठ क्र. 4,5,6		**16**
Unit III	नूतन गद्य संग्रह (गद्य संकलन) के पाठ क्र. 7,8,9		**16**
Unit IV	शब्दभेद- संज्ञा, सर्वनाम, विशेषण		**16**

Recommended Leaning Resources	
Print Resources	1. नूतन गद्य संग्रह(गद्य संकलन) संपादक : जय प्रकाश, सुमित्र प्रकाशन, इलाहाबाद-1 2. हिंदी व्याकरण रचना : संपादक गो. म. दाभोलकर, डॉ. अशोक कामत, गुरुकुल प्रतिष्ठान, पुणे 3. शिक्षार्थी हिंदी व्याकरण : संपादक डॉ. नागप्पा, राजपाल अॅण्ड सन्स, दिल्ली
Digital Resources	**https://hi.wikipedia.org/wiki/विधा**

Hindi
Syllabus of B.Com. Ability Enhancement compulsory Course
AECC

Title of the Subject/Discipline : A2 साहित्यिक विधा : कहानी संकलन+मीडिया लेखन				
Year	**1**	**Course Code : AECC-2-HINDI (B.Com.)**	**Credits**	**3**
Sem.	**2**	**Course Title/Discipline :** **Collection of Short stories+Media writing** **Text :** कथा दर्पण (कहानी संकलन) लोकभारती प्रकाशन, प्रयागराज-211001	**Hours**	**4**
Formative Assessment Marks :30 Summative Assessment Marks :70 Duration of ESA :64 hrs.				
Learning Outcomes	**1. कहानी के पठन पाठन में रुचि उत्पन्न होगी।** **2. आधुनिक हिंदी कहानी के विकास क्रम से परिचित होंगे।** **3. भाषायी शुद्धता के प्रति रुचि निर्माण होगी।** **4. लेखन कौशल प्राप्त कर सकेंगे।** **5. पत्रकारिता के बारे में जान सकेंगे।**			

Unit No.	**Course Content**	**Suggested Pedagogy**	**Hours L/P/L**
Unit I	कथा दर्पण (कहानी संकलन) की कहानियाँ क्र.1,2,3	**1. कक्षा व्याख्यान** **2. संवाद एवं बहस** **3. सामूहिक चर्चा** **4.रचनात्मक अभिव्यक्ति**	**16**
Unit II	कथा दर्पण (कहानी संकलन) की कहानियाँ क्र.4,5,6		**16**
Unit III	कथा दर्पण (कहानी संकलन) की कहानियाँ क्र.7,8		**16**
Unit IV	समाचार संकलन और लेखन		**16**

Recommended Leaning Resources	
Print Resources	1. कथा दर्पण (कहानी संकलन) लोकभारती प्रकाशन, प्रयागराज-211001 2. प्रिंट मिडिया : रुपचन्द गौतम, श्री नटराज प्रकाशन, दिल्ली-110053 3. पत्रकारिता की विभिन्न विधाएँ : डॉ. निशांत सिंह,राधा पब्लिकेशन्स, नई दिल्ली-110002 4. पत्रकारी लेखन के आयाम : मनोहर प्रभाकर, पंचशील प्रकाशन, जयपुर
Digital Resources	https://hi.wikipedia.org/wiki/हिन्दी_कहानी

Hindi

Syllabus of B.B.A./B.C.A./B.S.W./C.C.J. Ability Enhancement compulsory Course

AECC

Title of the Subject/Discipline : A1 साहित्यिक विधा : कहानी संकलन+व्याकरण				
Year	**1**	**Course Code : AECC-1HINDI (B.B.A./B.C.A./B.S.W./C.C.J.)**	**Credits**	**3**
Sem.	**1**	**Course Title/Discipline :** **Collection of Short stories+Grammer** **Text :** स्वर्ण कहानियाँ (कहानी संकलन) लोकभारती प्रकाशन, प्रयागराज-211001	**Hours**	**4**

Formative Assessment Marks :30 Summative Assessment Marks :70 Duration of ESA :64 hrs.

Learning Outcomes	**1. कहानी के पठन पाठन में रुचि उत्पन्न होगी।** **2. आधुनिक हिंदी कहानी के विकास क्रम से परिचित होंगे।** **3. भाषायी शुद्धता के प्रति रुचि निर्माण होगी।** **4. लेखन कौशल प्राप्त कर सकेंगे।** **5. भाषा के प्रयोग में सक्षम होंगे**

Unit No.	**Course Content**	**Suggested Pedagogy**	**Hours L/P/L**
Unit I	स्वर्ण कहानियाँ (कहानी संकलन) की कहानियाँ क्र. 1,2,3	**1. कक्षा व्याख्यान** **2. संवाद एवं बहस** **3. सामूहिक चर्चा** **4.रचनात्मक अभिव्यक्ति**	**16**
Unit II	स्वर्ण कहानियाँ (कहानी संकलन) की कहानियाँ क्र. 4,5,6		**16**
Unit III	स्वर्ण कहानियाँ (कहानी संकलन) की कहानियाँ क्र. 7,8,9		**16**
Unit IV	शब्दभेद- संज्ञा, सर्वनाम, विशेषण		**16**

Recommended Leaning Resources

Print Resources	1. स्वर्ण कहानियाँ (कहानी संकलन), लोकभारती प्रकाशन, प्रयागराज-211001 2. हिंदी व्याकरण रचना : संपादक गो. म. दाभोलकर, डॉ. अशोक कामत, गुरुकुल प्रतिष्ठान, पुणे 3. शिक्षार्थी हिंदी व्याकरण : संपादक डॉ. नागाप्पा, राजपाल अॅण्ड सन्स, दिल्ली
Digital Resources	https://hi.wikipedia.org/wiki/हिन्दी_कहानी

Hindi

Syllabus of B.B.A./B.C.A./B.S.W./C.C.J. Ability Enhancement compulsory Course

AECC

Title of the Subject/Discipline : A2 साहित्यिक विधा : गद्य संकलन+प्रयोजनमूलक हिंदी				
Year	**1**	**Course Code : AECC-2-HINDI (B.B.A./B.C.A./B.S.W./C.C.J.)**	**Credits**	**3**
Sem.	**2**	**Course Title/Discipline : Collection of Prose+Functional Hindi** **Text :** गद्य चयन (गद्य संकलन) भूमिका प्रकाशन, दिल्ली- 110051	**Hours**	**4**
Formative Assessment Marks :30 Summative Assessment Marks :70 Duration of ESA :64 hrs.				
Learning Outcomes	**1. हिंदी गद्य की विभिन्न विधाओं से परिचित होंगे।** **2. हिंदी के गद्यकारों से परिचित होंगे।** **3. भाषायी शुद्धता के प्रति रुचि निर्माण होगी।** **4. लेखन कौशल प्राप्त कर सकेंगे।** **5. हिंदी भाषा का महत्त्व तथा विविध रुप जान सकेंगे।**			

Unit No.	**Course Content**	**Suggested Pedagogy**	**Hours L/P/L**
Unit I	गद्य चयन (गद्य संकलन) के पाठ क्र.1,2,3	**1. कक्षा व्याख्यान** **2. सामूहिक चर्चा** **3. संवाद एवं बहस** **4.रचनात्मक अभिव्यक्ति**	**16**
Unit II	गद्य चयन (गद्य संकलन) के पाठ क्र.4,5,6		**16**
Unit III	गद्य चयन (गद्य संकलन) के पाठ क्र.7,8		**16**
Unit IV	हिंदी भाषा के विविध रुप		**16**

Recommended Leaning Resources	
Print Resources	1. गद्य चयन (गद्य संकलन), भूमिका प्रकाशन, दिल्ली-110051 2. प्रयोजनमूलक हिंदी : डॉ. रामप्रकाश, डॉ. दिनेश गुप्त, राधाकृष्ण प्रकाशन, नई दिल्ली-110002
Digital Resources	https://www.mpboardsolutions.com/mp-board-class-10th-special-hindi-gadya-ki-vividh-vidhaye/ https://youtu.be/CeC1o4YWKW8

Hindi
Syllabus of B.Sc. Ability Enhancement compulsory Course
AECC

Title of the Subject/Discipline : A1 साहित्यिक विधा : कहानी संकलन+प्रयोजनमूलक हिंदी				
Year	**1**	**Course Code : AECC-1-HINDI (B.Sc.)**	**Credits**	**3**
Sem.	**1**	**Course Title/Discipline :** **Collection of Short stories+Functional Hindi** **Text : कहानी कुंज (कहानी संकलन)** **वाणी प्रकाशन, नई दिल्ली-28**	**Hours**	**4**
Formative Assessment Marks :30 Summative Assessment Marks :70 Duration of ESA :64 hrs.				
Learning Outcomes	**1. कहानी के पठन पाठन में रुचि उत्पन्न होगी।** **2. आधुनिक हिंदी कहानी के विकास क्रम से परिचित होंगे।** **3. भाषायी शुद्धता के प्रति रुचि निर्माण होगी।** **4. लेखन कौशल प्राप्त कर सकेंगे।** **5. हिंदी भाषा का महत्व तथा विविध रुप जान सकेंगे।**			

Unit No.	**Course Content**	**Suggested Pedagogy**	**Hours L/P/L**
Unit I	कहानी कुंज कहानी संकलन की कहानियाँ क्र.1,2,3	**1. कक्षा व्याख्यान** **2. संवाद एवं बहस** **3. सामूहिक चर्चा** **4.रचनात्मक अभिव्यक्ति**	**16**
Unit II	कहानी कुंज कहानी संकलन की कहानियाँ क्र.4,5,6		**16**
Unit III	कहानी कुंज कहानी संकलन की कहानियाँ क्र.7,8,9		**16**
Unit IV	हिंदी भाषा के विविध रुप		**16**

Recommended Leaning Resources	
Print Resources	कहानी कुंज (कहानी संकलन), संपादक : डॉ. पूर्णिमा आर. वाणी प्रकाशन, नई दिल्ली -28
Digital Resources	**https://hi.wikipedia.org/wiki/ हिन्दी_कहानी** **https://youtu.be/CeC1o4YWKW8**

Hindi
Syllabus of B.Sc. Ability Enhancement compulsory Course
AECC

Title of the Subject/Discipline : A2 साहित्यिक विधा : कविता संकलन+अनुवाद कौशल				
Year	1	Course Code : AECC-2-HINDI (B.Sc.)	Credits	3
Sem.	2	Course Title/Discipline : Collection of Poems+Translation Text : काव्य कुसुम (कविता संकलन) सुमित्र प्रकाशन, प्रयागराज-211001	Hours	4
Formative Assessment Marks :30 Summative Assessment Marks :70 Duration of ESA :64 hrs.				
Learning Outcomes	1. कविता पढ़कर स्वयं कविता रचने की क्षमता प्राप्त करेंगे । 2. आधुनिक हिंदी कविता की परिपूर्ण जानकारी प्राप्त करेंगे। 3. अनुवाद करने में सक्षम होंगे। 4. सूक्ष्म भावों की अभिव्यक्ति में सक्षम होंगे			

Unit No.	Course Content	Suggested Pedagogy	Hours L/P/L
Unit I	काव्य कुसुम काव्य संकलन की कविताएँ क्र.1,2,3,4	1. कक्षा व्याख्यान 2. कविता पाठ 3. अनुवाद का व्यावहारिक प्रयोग 4. सामूहिक चर्चा	16
Unit II	काव्य कुसुम काव्य संकलन की कविताएँ क्र.5,6,7,8		16
Unit III	काव्य कुसुम काव्य संकलन की कविताएँ क्र.9,10,11,12		16
Unit IV	अनुवाद अभ्यास		16

Recommended Leaning Resources	
Print Resources	1. काव्य कुसुम (कविता संकलन), सुमित्र प्रकाशन, प्रयागराज-211001 2. आधुनिक हिंदी कविता : डॉ. हरदयाल, आर्य प्रकाशन मंडल 3. आधुनिक हिंदी कविता : कमला प्रसाद, वाणी प्रकाशन
Digital Resources	https://kavishala.in/@kavishala-labs/adhunika-hindi-kavita-ka-itihasa-kavishala-labs

Hindi
Syllabus of B.A. Ability Enhancement compulsory Course
AECC

Title of the Subject/Discipline : A1 साहित्यिक विधा : कहानी संकलन+भाव विस्तार				
Year	1	Course Code : AECC-1-HINDI (B.A.) Course Title/Discipline : Collection of Short stories+idioms and proverbs Text : कहानी सरोवर (कहानी संकलन) लोकभारती प्रकाशन, इलाहाबाद-211001	Credits	3
Sem.	1		Hours	4
Formative Assessment Marks :30 Summative Assessment Marks :70 Duration of ESA :64 hrs.				
Learning Outcomes	1. कहानी के पठन पाठन में रुचि उत्पन्न होगी। 2. आधुनिक हिंदी कहानी के विकास क्रम से परिचित होंगे। 3. भाषायी शुद्धता के प्रति रुचि निर्माण होगी। 4. लेखन कौशल प्राप्त कर सकेंगे। 5. भाषा के प्रयोग में सक्षम होंगे			

Unit No.	Course Content	Suggested Pedagogy	Hours L/P/L
Unit I	कहानी सरोवर कहानी संकलन की कहानियाँ क्र. 1,2,3	1. कक्षा व्याख्यान 2. संवाद एवं बहस 3. सामूहिक चर्चा 4.रचनात्मक अभिव्यक्ति	16
Unit II	कहानी सरोवर कहानी संकलन की कहानियाँ क्र. 4,5,6		16
Unit III	कहानी सरोवर कहानी संकलन की कहानियाँ क्र. 7,8		16
Unit IV	भाव विस्तार		16

Recommended Leaning Resources	
Print Resources	1. कहानी सरोवर (कहानी संकलन) लोकभारती प्रकाशन, इलाहाबाद-211001 2. हिंदी व्याकरण रचना : संपादक गो. म. दाभोलकर, डॉ. अशोक कामत, गुरुकुल प्रतिष्ठान, पुणे 3. शिक्षार्थी हिंदी व्याकरण : संपादक डॉ. नागाप्पा, राजपाल अॅण्ड सन्स, दिल्ली
Digital Resources	https://hi.wikipedia.org/wiki/ हिन्दी_कहानी https://nios.ac.in/media/documents/srsec301new/301-Lesson-20.pdf

Hindi
Syllabus of B.A. Ability Enhancement compulsory Course
AECC

Title of the Subject/Discipline : A2 साहित्यिक विधा : लघु उपन्यास+प्रयोजनमूलक हिंदी				
Year	**1**	**Course Code : AECC-2-HINDI (B.A.)** **Course Title/Discipline :** **Collection of Short stories+Functional Hindi** **Text : दौड (लघु उपन्यास) : ममता कालिया** **वाणी प्रकाशन, नई दिल्ली-110002**	**Credits**	**3**
Sem.	**2**		**Hours**	**4**
Formative Assessment Marks :30 Summative Assessment Marks :70 Duration of ESA :64 hrs.				
Learning Outcomes	**1. लघु उपन्यास के तत्वों के आधार पर पाठविश्लेषण क्षमता प्राप्त कर सकेंगे।** **2. हिन्दी उपन्यास साहित्य की पूर्ण जानकारी प्राप्त कर सकेंगे।**			

Unit No.	**Course Content**	**Suggested Pedagogy**	**Hours L/P/L**
Unit I	दौड (लघु उपन्यास) : ममता कालिया	**1. कक्षा व्याख्यान** **2. संवाद एवं बहस** **3. सामूहिक चर्चा** **4.आलोचनात्मक मूल्यांकन**	**16**
Unit II	दौड (लघु उपन्यास) : ममता कालिया		**16**
Unit III	दौड (लघु उपन्यास) : ममता कालिया		**16**
Unit IV	हिंदी भाषा के विविध रुप		**16**

Recommended Leaning Resources	
Print Resources	दौड (लघु उपन्यास) : ममता कालिया, वाणी प्रकाशन, नई दिल्ली -110002
Digital Resources	**https://youtu.be/CeC1o4YWKW8**

Hindi
Syllabus of Open Elective B.A./B.Com./ B.Sc./ B.B.A./ B.S.W/C.C.J
For all the strems across the discipline
OE

Title of the Subject/Discipline : A1 संभाषण कला तथा चलचित्र लेखन				
Year	**1**	**Course Code : OE-1-HINDI (B.A./B.Com./ B.Sc./ B.B.A./ B.S.W/C.C.J)**	**Credits**	**3**
Sem.	**1**	**Course Title/Discipline :>** संभाषण कला तथा चलचित्र लेखन	**Hours**	**4**

Formative Assessment Marks :30 Summative Assessment Marks :70 Duration of ESA :64 hrs.

Learning Outcomes	**1. छात्रों में अंतर्निहित संप्रेषण एवं बोलने की कला का विकास होगा ।** **2. व्यक्तित्व विकास होगा ।** **3. मानक उच्चारण का अभ्यास होगा।** **4. संभाषण कला के विविध रुपों का ज्ञान होगा।** **5. सिनेमा में रोजगार के अवसरों से परिचित होंगे।** **6. हिंदी के विविध मौखिक रुपों का प्रयोग होगा।** **7. हिंदी सिनेमा समीक्षा कर सकेंगे।**

Unit No.	Course Content	Suggested Pedagogy	Hours L/P/L
Unit I	संभाषण के विविध रुप : वार्तालाप, व्याख्यान, वाद-विवाद, जनसंबोधन	**1. कक्षा व्याख्यान** **2. संवाद एवं बहस** **3. सामूहिक चर्चा** **4.रचनात्मक अभिव्यक्ति** **5. आई सी टी का प्रयोग** **6. यू ट्यूब चॅनेल का प्रयोग**	**16**
Unit II	संभाषण कला के अन्य रुप : उद्घोषणा कला (**announcement**), आँखों देखा हाल (**commentry**), संचालन (**anchoring**)		**16**
Unit III	हिंदी सिनेमा का विकास, बॉलिवूड का फिल्म उद्योग		**16**
Unit IV	सिनेमा समीक्षा - 1) बागबान (निर्देशक : रवि चोप्रा) 2) नीरजा (निर्देशक : राम माधवानी) 3) दंगल (निर्देशक : नितेन तिवारी) 4) सुपर-30 (निर्देशक : विकास बहल) 5) शेरशाह (निर्देशक : विष्णूवर्धन)		**16**

Recommended Leaning Resources

Print Resources	**1. भाषण कला : डॉ. महेश शर्मा, ज्ञान गंगा, दिल्ली** **2. सिनेमा-कल आज और कल : विनोद भारद्वाज**
Digital Resources	https://hindi.mapsofindia.com/my-india/history/history-of-indian-cinema **https://hindi.webdunia.com/article/know-the-institute/फिल्मों-में-कैरियर-की-असीम-संभावनाएं-111112300078_1.htm**

Hindi
Syllabus of Open Elective B.A./B.Com./ B.Sc./ B.B.A./ B.S.W/C.C.J
For all the strems across the discipline
OE

Title of the Subject/Discipline : A2 सोशल मीडिया और हिंदी				
Year	1	Course Code : OE-2-HINDI (B.A./B.Com./ B.Sc./ B.B.A./ B.S.W/C.C.J)	Credits	3
Sem.	2	Course Title/Discipline : Social Media and Hindi	Hours	4
Formative Assessment Marks :30 Summative Assessment Marks :70 Duration of ESA :64 hrs.				
Learning Outcomes	1. सोशल मीडिया के स्वरुप तथा महत्त्व को जान सकेंगे। 2. हिंदी भाषा के अध्ययन से अपने भविष्य का निर्माण कर सकेंगे। 3. स्वयं के चरित्र निर्माण द्वारा समाज को विकास के पथ पर अग्रसर करेंगे। 4. आदर्श समाज की स्थापना में स्वयं की भागीदारी को अंकित कर सकेंगे। 5. यू ट्यूब चॅनेल बनाना सीखेंगे।			
Unit No.	Course Content	Suggested Pedagogy	Hours L/P/L	
Unit I	सोशल मीडिया का स्वरुप	1. कक्षा व्याख्यान 2. सामूहिक चर्चा 3.रचनात्मक अभिव्यक्ति 4. आईसीटी का उपयोग 5. क्लास सेमिनार	16	
Unit II	सोशल मीडिया के प्रकार और विकास फेसबुक, व्हॉट्सअप, ट्विटर, इन्स्टाग्राम मे हिंदी		16	
Unit III	सोशल मीडिया में हिंदी का प्रसार और प्रयोग		16	
Unit IV	यू ट्यूब और हिंदी		16	
Recommended Leaning Resources				
Print Resources	1. आधुनिक जनसंचार और हिंदी : हरिमोहन 2. हिंदी वेब साहित्य : डॉ. सुनीलकुमार लवटे 3. पत्रकारिता से मीडिया तक : मनोज कुमार 4. सोशल मीडिया : योगेश पटेल 5. सोशल नेटवर्किंग : नए समय का संवाद : संपादक संजय द्विवेदी 6. उत्तर आधुनिक मीडिया तकनीक : हर्षदेव			
Digital Resources	https://www.mpgkpdf.com/2020/06/social-media-ke-prakar.html			

Hindi

Syllabus of B.A. with One Major and One Minor Discipline Specific Core DSC

Title of the Subject/Discipline : A1 साहित्कि विधा : कहानी संकलन				
Year	1	Course Code :DSC-1-HINDI (B.A.)	Credits	3
Sem.	1	Course Title/Discipline : Collection of Short stories+terminology Text : कहानी संकलन (कहानी संकलन) राजकमल प्रकाशन, नई दिल्ली-110002	Hours	4
Formative Assessment Marks :30 Summative Assessment Marks :70 Duration of ESA :64 hrs.				
Learning Outcomes	1. कहानी के पठन पाठन में रुचि उत्पन्न होगी। 2. आधुनिक हिंदी कहानी के विकास क्रम से परिचित होंगे। 3. भाषायी शुद्धता के प्रति रुचि निर्माण होगी। 4. लेखन कौशल प्राप्त कर सकेंगे। 5. भाषा के प्रयोग में सक्षम होंगे			
Unit No.	Course Content		Suggested Pedagogy	Hours L/P/L
Unit I	कहानी की परिभाषा तथा तत्व		1. कक्षा व्याख्यान 2. संवाद एवं बहस 3. सामूहिक चर्चा 4.रचनात्मक अभिव्यक्ति	16
Unit II	कहानी संकलन (कहानी संकलन) की कहानी क्र. 1,2,3			16
Unit III	कहानी संकलन (कहानी संकलन) की कहानी क्र. 4,5,6			16
Unit IV	कहानी संकलन (कहानी संकलन) की कहानी क्र. 7,8			16
Recommended Leaning Resources				
Print Resources	कहानी संकलन (कहानी संकलन), राजकमल प्रकाशन, नई दिल्ली-110002			
Digital Resources	https://hi.wikipedia.org/wiki/हिन्दी_कहानी			

Hindi

Syllabus of B.A. with One Major and One Minor Discipline Specific Core DSC

Title of the Subject/Discipline : A2 हिंदी व्याकरण				
Year	1	Course Code :DSC-2-HINDI (B.A.)	Credits	3
Sem.	1	Course Title/Discipline : Hindi Grammer	Hours	4
Formative Assessment Marks :30 Summative Assessment Marks :70 Duration of ESA :64 hrs.				
Learning Outcomes	1. शुद्ध भाषा का प्रयोग करने में सक्षम होंगे। 2. भाषा से संबंधित नियमों का ज्ञान प्राप्त होगा। 3. भाषा को वैज्ञानिक दृष्टिकोण से देखने में सक्षम होंगे। 4. भाषायी शुद्धता के प्रति रुचि निर्माण होगी।			
Unit No.	Course Content		Suggested Pedagogy	Hours L/P/L
Unit I	प्रयोग के आधार पर शब्द के भेद : संज्ञा सर्वनाम, विशेषण, क्रिया, अव्यय		1. कक्षा व्याख्यान 2. संवाद एवं बहस 3. सामूहिक चर्चा 4.रचनात्मक अभिव्यक्ति	16
Unit II	संक्षेपण (सारलेखन) पल्लवन (भाव विस्तार)			16
Unit III	लिंग भेद, वचन भेद			16
Unit IV	समानार्थी शब्द, विपरीतार्थक शब्द			16
Recommended Leaning Resources				
Print Resources	1. हिंदी व्याकरण : कामताप्रसाद गुरु, प्रभात प्रकाशन 2. हिंदी व्याकरण रचना : संपादक गो. म. दाभोलकर, डॉ. अशोक कामत, गुरुकुल प्रतिष्ठान, पुणे 3. शिक्षार्थी हिंदी व्याकरण : संपादक डॉ. नागप्पा, राजपाल अॅण्ड सन्स, दिल्ली			
Digital Resources	https://www.mycoaching.in/p/hindi-grammar.html https://www.nsrgrammar.com/2020/05/sangya-sarnam-kriya-vishesan.html https://www.mycoaching.in/2018/09/Ling-Gender-in-hindi.html https://www.hindisarkariresult.com/vachan-hindi/			

Hindi

Syllabus of B.A. with One Major and One Minor Discipline Specific Core DSC

Title of the Subject/Discipline : A3 साहित्यिक विधा : काव्य				
Year	1	Course Code :DSC-3-HINDI (B.A.)	Credits	3
Sem.	2	Course Title/Discipline : Collection of Poems Text : पद्य परिमल (कविता संकलन) ज्ञानविज्ञान प्रकाशन, नई दिल्ली-110002	Hours	4
Formative Assessment Marks :30 Summative Assessment Marks :70 Duration of ESA :64 hrs.				
Learning Outcomes	1. काव्य के पठन पाठन में रुचि उत्पन्न होगी। 2. आधुनिक हिंदी काव्य के विकास क्रम से परिचित होंगे। 3. भाषायी शुद्धता के प्रति रुचि निर्माण होगी। 4. काव्य रचना कौशल प्राप्त कर सकेंगे। 5. खण्डकाव्य के स्वरुप को समझ सकेंगे।			
Unit No.	Course Content		Suggested Pedagogy	Hours L/P/L
Unit I	पद्य परिमल काव्य संकलन की कविताएँ क्र. 1,2,3		1. कक्षा व्याख्यान 2. संवाद एवं बहस 3. कविता पाठ 4. रचनात्मक अभिव्यक्ति	16
Unit II	पद्य परिमल काव्य संकलन की कविताएँ क्र. 4,5,6,			16
Unit III	पद्य परिमल काव्य संकलन की कविताएँ क्र. 7,8,9			16
Unit IV	रश्मिरथी खण्डकाव्य का तृतीय सर्ग			16
Recommended Leaning Resources				
Print Resources	1. पद्य परिमल (कविता संकलन), ज्ञानविज्ञान प्रकाशन, नई दिल्ली-110002 2. रश्मिरथी (खण्डकाव्य) रामधारी सिंह 'दिनकर' लोकभारती प्रकाशन, इलाहाबाद-1			
Digital Resources	https://www.hindisahityadarpan.in/2017/06/Complete-rashmirathi-dinkar.html			

Hindi

Syllabus of B.A. with One Major and One Minor Discipline Specific Core DSC

Title of the Subject/Discipline : A4 प्रयोजन मूलक हिंदी				
Year	1	Course Code : DSC-4-HINDI (B.A.)	Credits	3
Sem.	2	Course Title/Discipline : Functional Hindi	Hours	5
Formative Assessment Marks :30 Summative Assessment Marks :70 Duration of ESA :64 hrs.				
Learning Outcomes	1. प्रयोजनमूलक हिंदी का विश्लेषणात्मक ज्ञान प्राप्त होगा। 2. प्रयोजनमूलक हिंदीत था उसके माध्यमों का व्यावहारिक प्रयोग कर सकेंगे। 3. हिंदी भाषा के विविध प्रयोजनों से अवगत होंगे। 4. संविधान में राजभाषा हिंदी के प्रावधानों को समझ सकेंगे।			
Unit No.	Course Content		Suggested Pedagogy	Hours L/P/L
Unit I	कार्यालयीन पत्राचार		1. कक्षा व्याख्यान 2. सामूहिक चर्चा 3. क्लास सेमिनार 4. ICT का प्रयोग 5. यू ट्यूब चॅनेल का प्रयोग	16
Unit II	हिंदी भाषा के विविध रुप			16
Unit III	निबंध-लेखन			16
Unit IV	अनुवाद			16
Recommended Leaning Resources				
Print Resources	प्रयोजनमूलक हिंदी के नये आयाम : डॉ. पंडित बन्ने, वाणी प्रकाशन			
Digital Resources	https://www.hindigurujee.com/2021/09/employment-opportunity-in-hindi-2021.html https://youtu.be/CeC1o4YWKW8			

RANI CHANNAMMA UNIVERSITY,

BELAGAVI-591156, Karnataka-India

Dept. of Hindi

A

DRAFT

OF

COURSE STRUCTURE AND SYLLABUS

as per the Choice Based Credit System (CBCS)
designed in accordance with
Learning Outcomes-Based Curriculum Framework
(LOCF)
For

UNDERGRADUATE DEGREE

Subject: Hindi

III & IV Semester

B.A., B. Com., B. Sc., BBA/BCA/BSW/CCJ

w.e.f.

Academic Year 2022-23 and onwards

नई शिक्षा नीति के तहत हिंदी पाठ्यक्रम की संरचना

1	**Prof. Manisha S. Nesarkar** **Dept. of Marathi** **Rani Channamma University, Belagavi**	**Chairperson**
2	**Smt. Jayashree Anchi** **Head, Dept. of Hindi** **Maratha Mandal College, Belagavi**	**Member**
3	**Dr. Shrikant B. Sangam** **Head, Dept. of Hindi** **CSB Arts, SMRP Science and GLR Commerce College, Ramdurg**	**Member**

प्रस्तावना

इस पाठ्यक्रम की संरचना ऐसी की गई है कि इसके अध्ययन के पश्चात हिंदी साहित्य का विद्यार्थी यह जान सके कि साहित्य का विश्लेषण कैसे किया जाए, उसकी सराहना कैसी की जाए और दिए गए पाठ को पढ़ने की समझ किस प्रकार विकसित की जाए ताकि विद्यार्थी भाषा और साहित्य के उद्देश्य से भली भाँति परिचित हो सके। यह उल्लेखनीय है कि चयन आधारित क्रेडिट प्रणाली में हिंदी भाषा और साहित्य के पाठ्यक्रम की विशिष्ट भूमिका है। प्रस्तावित पाठ्यक्रम में भाषा के रूप में हिंदी के अध्ययन के लिए 4 स्ट्रीम्स बनायी गयी हैं, जिससे विद्यार्थी अपने अनुशासन के अनुसार हिंदी भाषा का अध्ययन कर सके। साथ ही ओपन इलेक्टीव कोर्स का भी निर्माण हिंदी में रोज़गार को ध्यान में रखकर किया गया है।

हिंदी के स्नातक पाठ्यक्रम का उद्देश्य निम्नांकित लक्ष्यों को प्राप्त करना है

- मूलभूत कौशल श्रवण, लेखन और अभिव्यक्ति का विकास करना।

- भाषा कौशल का विकास करना।

- उच्चारण और लिपि का सही ज्ञान कराना।

- विद्यार्थियों को संवेदनशील नागरिक बनाना।

- एक कुशल वक्ता का निर्माण करना।

- समाज और समुदाय के प्रति संवेदनशील दृष्टि का विकास करना।

- राष्ट्रीय चेतना का विकास करना।

- मानवीय मूल्यों के प्रति स्वस्थ दृष्टिकोण विकसित करना।

- विभिन्न साहित्यिक विधाओं की जानकारी देना।

- समाज के विभिन्न समुदायों के प्रति सहिष्णुता की भावना का विकास करना।

- साहित्यिक विमर्शों से परिचित करना।

- साहित्यिक पाठ और उनके संदर्भों में आलोचनात्मक प्रवृति और कल्पनाशीलता का कौशल निर्माण करना।

- उच्च अध्ययन और अनुसंधान में बहुविषयक दृष्टिकोण स्थापित करना।

- विद्यार्थियों में समावेशी दृष्टिकोण, जिम्मेदार नागरिकता, नैतिक सोच और सामजिक प्रतिबद्धता की भावना का निर्माण करना।

- रोज़गार के लिए उचित व्यावसायिक कौशल में छात्रों को प्रशिक्षित करना।

- तकनीकी रूप से उन्नत विश्व में विद्यार्थियों को इसकी चुनौतियों और अवसरों के लिए तैयार करना।

- व्यावहारिक और अनुभवात्मक शिक्षण के लिए सक्षम करना।

यह पाठ्यक्रम विभिन्न स्तरों पर विद्यार्थियों की योग्यता का उन्नयन करने में सहायक हो सकेगा, साथ ही साथ यह सामाजिक जटिलताओं को साहित्य के माध्यम से समझाने में भी निर्धारक के रूप में काम करेगा। साहित्य के साथ साथ भाषा की समझ भी विद्यार्थियों में विकसित होगी जिसकी सहायता से विद्यार्थी चिंतन, विश्लेषण और मूल्यांकन से संबंधित आधार बिंदुओं को जान सकेंगे। उनकी रोज़गार पाने की योग्यता तो विकसित होगी ही साथ ही विभिन्न संदर्भों को जान सकेंगे।

परिणाम (Out Come)

इस पाठ्यक्रम के पठन पाठन की दिशा नें निम्मलिखित परिणाम सामने आएंगे।

- हिंदी भाषा की आरंभिक स्तर से लेकर वर्तमान के बदलते रूपों की जानकारी प्राप्त की जा सकती है।

- भाषा के सैद्धान्तिक रूप के साथ साथ व्यावहारिक रूप भी जाना जा सकता है।

- उच्च शैक्षिक स्तर पर हिंदी भाषा किस प्रकार महत्वपूर्ण भूमिका निभा सकती, इससे संबंधित परिणाम प्राप्त हो सकते है।

- भाषागत मूल्यों को व्यावहारिक रूप को भी जान सकते है।

- प्रयोजनमूलक हिंदी, पत्रकारिता, अनुवाद आदि के अद्यापन, अध्ययन के द्वारा व्यावसायिकता की क्षमता में बढावा प्राप्त होगा।

- भारतीय साहित्य के अध्ययन से छात्रों के ज्ञान विस्तार तथा अभिव्यक्ति क्षमता में विकास होगा।

- साहित्य के माध्यम से सौंदर्यबोध, नैतिकता, सामाजिक समरसता, पर्यावरण संबंधी विषयों की समझ विकसित होगी।

- भाषायी और साहित्यिक क्षमता में सघन होंगे।

- गंभीर, समीक्षात्मक और स्वतंत्र चिंतन के लिए सक्षम होंगे।

- अपने विचारों को व्यक्त करने तथा बहुआयामी व्याख्याओं को समझने के लिए तैयार होंगे।

- रचनात्मकता में अभिरूचि का निर्माण होगा।

- साहित्येतिहास के अध्ययन से साहित्यकार के युगबोध का परिचय होगा।

- काव्यशास्त्रिय सिद्धान्तों के अध्ययन से विश्लेषण की क्षमता का निर्माण होगा।

- वर्तमान तकनीकी वातावरण में हिंदी के प्रयोग में दक्ष होंगे।

- अनुवाद, रिपोर्ट लेखन, कविता, कहानी आदि की प्रस्तुति का अनुभव प्राप्त करेंगे।

शिक्षण पद्धति (Pedagogy)

सीखने की प्रक्रिया में हिंदी भाषा की दक्षता को मजबूत बनाना होगा। विद्यार्थी हिंदी भाषा में नएपन और वैश्विक माध्यम की निर्माण प्रक्रिया में सहायक बन सकें। अपनी भाषा में व्यवहार और निपुणता प्राप्त कर सकें। साहित्य की समझ विकसित कर सकें तथा आलोचनात्मक एवं साहित्यक विवेक निर्मित किया जा सकें। इसलिए निम्नलिखित शिक्षण पद्धति का उपयोग किया जा सकता है।

- व्याख्यान

- संवाद एवं बहस

- सामूहिक चर्चा

- कक्षाओं में पठन-पाठन की पद्धति

- परिवेश का सृजन

- अभिनय पद्धति का प्रयोग

- क्षेत्रीय अथवा परियोजना कार्य

- अध्ययन से संबंधित पर्यटन

- प्रदर्शन कलाओं को वास्तविक रूप देना

- लिखित परीक्षा

- आतंरिक मूल्यांकन

- शोध सर्वेक्षण

- वाद-विवाद

- दृश्य-श्रव्य माध्यम का प्रयोग

- आलोचनात्मक मूल्यांकन पर बल

- आई सी टी का उपयोग

- यू ट्यूब चॅनेल का प्रयोग

- तंत्रज्ञान द्वारा पैराग्राफ लेखन

- रचनात्मक अभिव्यक्ति

- मूल्यांकन पद्धति

सेमेस्टर के अनुसार परीक्षा परिणाम तैयार किये जाए। सेमेस्टर के अंतर्गत आतंरिक मूल्यांकन, सतत मूल्यांकन और सत्र के अंत में ली जानेवाली परीक्षा सम्मिलित हो। प्रत्येक सेमेस्टर में निर्धारित कोर्स 100 अंकों का हो। जिसमें 40 अंक आतंरिक मूल्यांकन और सत्रांत परीक्षा में 60 अंक निर्धारित है। आंतरिक मूल्यांकन में कक्षा में आयोजित की जानेवाली परीक्षा, मौखिक प्रस्तुतियाँ, संगोष्ठी, साक्षात्कार, लघु उत्तरीय प्रश्न और तकनीकी ज्ञान के परीक्षण के आधार पर मूल्यांकन किया जाना चाहिए। इस प्रकार विद्यार्थी का समग्र मूल्यांकन हो सकेगा।

Model Program Structure for Under Graduate (UG) Program

HINDI (AECC)

B.Com: Ability Enhancement Compulsory Course (AECC)

Semester	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I&II)	Assignment	Attendance
I	Collection of Prose + Grammar	3	04	10+15+20+15	20	10	10
II	Collection of Short stories + Media Writing	3	04	10+15+20+15	20	10	10
III	Collection of Poetry+ Letter Writing	3	04	10+15+20+15	20	10	10
IV	Drama +Computer and Hindi	3	04	10+15+20+15	20	10	10
				60+40= 100			

BBA/BCA/BSW/CCJ Etc.:

Ability Enhancement Compulsory Course (AECC)

Semester	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I&II)	Assignment	Attendance
I	Collection of Short Stories+ Grammar	3	04	10+15+20+15	20	10	10
II	Collection of Prose +Functional Hindi	3	04	10+15+20+15	20	10	10
III	Collection of Poetry	3	04	10+15+20+15	20	10	10
IV	Drama +Summarization, Expansion of Idea	3	04	10+15+20+15	20	10	10
				60+40= 100			

B. Sc.: Ability Enhancement Compulsory Course (AECC)

Semester	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I&II)	Assignment	Attendance
I	Collection of Short Stories + Functional Hindi	3	04	10+15+20+15	20	10	10
II	Collection of Poems +Translation	3	04	10+15+20+15	20	10	10
III	Collection of One Act Play + Letter Writing	3	04	10+15+20+15	20	10	10
IV	Novel +Mass Communication	3	04	10+15+20+15	20	10	10
				60+40= 100			

B.A.: Ability Enhancement Compulsory Course (AECC)

Semester	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I&II)	Assignment	Attendance
I	Collection of Short Stories Idioms and Proverbs	3	04	10+15+ 20+15	20	10	10
II	Short Novel +Functional Hindi	3	04	10+15+ 20+15	20	10	10
III	Collection of Prose	3	04	10+15+ 20+15	20	10	10
IV	Block Poetry+ Functional Hindi	3	04	10+15+ 20+15	20	10	10
				60+40= 100			

Model Program Structure for UG Program

B.A. with One Major and One Minor / Without Practical Discipline Specific Core / Discipline Elective / Open Elective

Hindi (DSC/DSE/OE)

Sem,	Discipline Core (DSC)	Credit	Hours	Discipline Elective (DSE) / Open Elective (OE)			Marks 100	
					Credit	Hours	Theory	IA
I	Collection of Short Stories + Terminology	3	04	Performing Arts and Chalanchitra Writing	3	04	60	40
	Hindi Grammar	3	04		3	04	60	40
II	Collection of Poems	3	04	Social Media and Hindi	3	04	60	40
	Functional Hindi	3	04		3	04	60	40
Exit Option with Certificate Course (50 Credits)								

Sem,	Discipline Core (DSC)	Credit	Hours	Discipline Elective (DSE) / Open Elective (OE)			Marks 100	
					Credit	Hours	Theory	IA
III	History of Hindi Literature [Adikal ,Bhaktikal ,Ritikal]	3	04	General Introduction of Hindi Literature	3	04	60	40
	Collection of One Act Play	3	04		3	04	60	40
IV	Literary Genre : Histroy of Hindi Literature	3	04	Transalation Skill	3	04	60	40
	Literary Essay	3	04		3	04	60	40
Exit Option with Diploma Course (100 credits) Choose anyone Discipline as Major, the other as the Minor								

UNDER GRADUATE IN HINDI

HINDI (AECC)

B. Com.: Ability Enhancement Compulsory Course (AECC)

B.Sc.: Ability Enhancement Compulsory Course (AECC)

B.A: Ability Enhancement Compulsory Course (AECC)

BBA /BCA/BSW Etc. Courses: (AECC)

QUESTION PAPER PATTERN WITHOUT PRACTICAL

Qn. No.	Particulars		Marks	Total
	SECTION - A			
I	Objective Type Questions (Compulsory)	10 out of 12	01	10
II	Reference to Context	3 out of 5	05	15
	SECTION - B			
III	Essay type Answer Questions	2 out of 4	10	20
	SECTION - C			
IV	Questions on Non-Detail Text		15	15
	Total			**60**
Internal Assessment	**2** IA Tests		20	40
	Assignment		10	
	Attendance		10	
	Total			**100**

BA with One Major and One Minor / Without Practical

Discipline Specific Core / Discipline Elective / Open Elective HINDI (DSC /DSE /OE)

QUESTION PAPER PATTERN WITHOUT PRACTICAL

Qn. No.	Particulars		Marks	Total
Theory				
I	Objective Type Questions (Compulsory)	10 out of 12	01	10
II	Short Answer Questions	4 out of 6	05	20
III	Essay type Answer Questions	3 out of 5	10	30
Total				60
Internal Assessment	2 IA Tests		20	
	Assignment		10	40
	Attendance		10	
	Total			100

Syllabus of B.Com. Ability Enhancement compulsory Course (AECC)

Title of the Subject/Discipline : HINDI				
Year	**2**	**Course Code : AECC-3-HINDI (B.Com.)**	**Credits**	**03**
Sem.	**3**	**Course Title/Discipline :** कविता संग्रह + पत्र लेखन **Collection of Poetry + Letter writing** **Text : काव्य वैभव (कविता संकलन)** **ईशान प्रकाशन, नई दिल्ली-110002**	**Hours/Week** **Total**	**04** **64**

Formative Assessment Marks : 40 **Summative Assessment Marks :60** **Total Marks:100.**

Learning Outcomes	1. कविता पढ़कर स्वयं कविता रचने की क्षमता प्राप्त करेंगे । 2. आधुनिक हिंदी कविता की परिपूर्ण जानकारी प्राप्त करेंगे। 3. सूक्ष्म भावों की अभिव्यक्ति में सक्षम होंगे 4. हिंदी पत्रव्यवहार से संबंधित सही जानकारी प्राप्त करेंगे ।

Unit No.	Course Content	Suggested Pedagogy	Hours L/P/L
Unit I	काव्य वैभव (कविता संकलन) की कविताएँ क्र. 1,2,3,4	**1. कक्षा व्याख्यान** **2. संवाद एवं बहस** **3. सामूहिक चर्चा** **4.रचनात्मक अभिव्यक्ति**	**16**
Unit II	काव्य वैभव (कविता संकलन) की कविताएँ क्र.. 5,6,7,8,9		**16**
Unit III	काव्य वैभव (कविता संकलन) की कविताएँ क्र. 10,11,12,13		**16**
Unit IV	पत्र लेखन : आवेदन-पत्र, निमंत्रण-पत्र, बैंक सम्बन्धी पत्र, बीमा सम्बन्धी पत्र, व्यापारिक-पत्र		**16**

Recommended Leaning Resources

Print Resources	1. काव्य वैभव (कविता संकलन) ईशान प्रकाशन, नई दिल्ली-110002 2. आधुनिक हिंदी कविता : डॉ. हरदयाल, आर्य प्रकाशन मंडल 3. आधुनिक हिंदी कविता : कमला प्रसाद, वाणी प्रकाशन
Digital Resources	https://www.youtube.com/watch?v=sVIQbgBoiQ4 https://kavishala.in/@kavishala-labs/adhunika-hindi-kavita-ka-itihasa-kavishala-labs

Syllabus of B.Com. Ability Enhancement compulsory Course(AECC)

Title of the Subject/Discipline :HINDI				
Year	**2**	**Course Code : AECC-4-HINDI (B.Com.)**	**Credits**	**03**
Sem.	**4**	**Course Title/Discipline :** नाटक + कंप्यूटर और हिंदी **Drama + Computer & Hindi** **Text : ताजमहल का टेंडर (नाटक)** **राजकमल प्रकाशन, नई दिल्ली-110002**	**Hours/Week** **Total**	**04** **64**
Formative Assessment Marks : 40 Summative Assessment Marks :60				**Total Marks:100.**
Learning Outcomes	1. हिन्दी नाटक साहित्य की जानकारी प्राप्त कर सकेंगे। 2 नाटक के तत्वों के आधार पर समीक्षा करने की क्षमता प्राप्त कर सकेंगे। 3. कंप्यूटर और हिंदी, कंप्यूटर पर अनुवाद, हिंदी टाइपिंग टूल्स आदि की जानकारी प्राप्त कर सकेंगे।			

Unit No.	Course Content	Suggested Pedagogy	Hours L/P/L
Unit I	ताजमहल का टेंडर (नाटक) कथानक	**1. कक्षा व्याख्यान** **2. संवाद एवं बहस** **3. सामूहिक चर्चा** **4.रचनात्मक अभिव्यक्ति** **5.कंप्यूटर पर हिंदी अनुवाद**	**16**
Unit II	ताजमहल का टेंडर (नाटक) पात्र तथा चरित्र चित्रण		**16**
Unit III	ताजमहल का टेंडर (नाटक) तत्वों के आधार पर समीक्षा		**16**
Unit IV	कंप्यूटर और हिंदी, हिंदी अनुवाद तथा टाइपिंग टूल्स		**16**

Recommended Leaning Resources	
Print Resources	ताजमहल का टेंडर (नाटक) राजकमल प्रकाशन, नई दिल्ली-110002
Digital Resources	https://www.iasbook.com/hindi/hindi-natya-sahitya/

Syllabus of B.B.A./B.C.A./B.S.W./C.C.J. Ability Enhancement compulsory Course(AECC)

Title of the Subject/Discipline : HINDI				
Year	**2**	**Course Code : AECC-3HINDI (B.B.A./B.C.A./B.S.W./C.C.J.)**	**Credits**	**03**
Sem.	**3**	**Course Title/Discipline : कविता संग्रह+ पत्र लेखन** **Collection of Poetry + Letter writing** **Text : काव्य कलश(कविता संकलन)** **लोकभारती प्रकाशन, प्रयागराज-211001**	**Hours/Week** **Total**	**04** **64**
Formative Assessment Marks : 40 Summative Assessment Marks :60				**Total Marks:100.**
Learning Outcomes	1. कविता पढ़कर स्वयं कविता रचने की क्षमता प्राप्त करेंगे । 2. आधुनिक हिंदी कविता की परिपूर्ण जानकारी प्राप्त करेंगे। 3. सूक्ष्म भावों की अभिव्यक्ति में सक्षम होंगे 4. हिंदी पत्रव्यवहार से संबंधित सही जानकारी प्राप्त करेंगे ।			

Unit No.	Course Content	Suggested Pedagogy	Hours L/P/L
Unit I	काव्य कलश (कविता संकलन) की कविताएँ क्र. 1,2,3,4	**1. कक्षा व्याख्यान** **2. संवाद एवं बहस** **3. सामूहिक चर्चा** **4.रचनात्मक अभिव्यक्ति**	**16**
Unit II	काव्य कलश (कविता संकलन) की कविताएँ क्र. 5,6,7,8,9		**16**
Unit III	काव्य कलश (कविता संकलन) की कविताएँ क्र. 10,11,12,13		**16**
Unit IV	पत्र लेखन : आवेदन-पत्र, निमंत्रण-पत्र, बैंक सम्बन्धी पत्र, बीमा सम्बन्धी पत्र, व्यापारिक-पत्र		**16**

Recommended Leaning Resources	
Print Resources	1. काव्य कलश(कविता संकलन) लोकभारती प्रकाशन, प्रयागराज-211001 2. आधुनिक हिंदी कविता : डॉ. हरदयाल, आर्य प्रकाशन मंडल 3. आधुनिक हिंदी कविता : कमला प्रसाद, वाणी प्रकाशन
Digital Resources	https://www.youtube.com/watch?v=FoBuYIOrfCY https://www.youtube.com/watch?v=yf-JiXm1GgA

Syllabus of B.B.A./B.C.A./B.S.W./C.C.J. Ability Enhancement compulsory Course(AECC)

Title of the Subject/Discipline : HINDI				
Year	**2**	**Course Code : AECC-4-HINDI (B.B.A./B.C.A./B.S.W./C.C.J.)**	**Credits**	**03**
Sem.	**4**	**Course Title/Discipline :नाटक+ संक्षेपणतथापल्लवन** **Drama + summarization, expansion of idea** **Text :** एक और द्रोणाचार्य(नाटक) किताबघर प्रकाशन, नई दिल्ली	**Hours/weeks** **Total**	**04** **64**
Formative Assessment Marks :40 Summative Assessment Marks :60				**Total Marks:100.**
Learning Outcomes	1. हिन्दी नाटक साहित्य की जानकारी प्राप्त कर सकेंगे। 2. नाटक के तत्वों के आधार पर समीक्षा करने की क्षमता प्राप्त कर सकेंगे। 3. भाषायी शुद्धता के प्रति रुचि निर्माण होगी। 4. लेखन कौशल प्राप्त कर सकेंगे।			

Unit No.	Course Content	Suggested Pedagogy	Hours L/P/L
Unit I	एक और द्रोणाचार्य (नाटक) कथानक	**1. कक्षा व्याख्यान** **2. सामूहिक चर्चा** **3. संवाद एवं बहस** **4.रचनात्मक अभिव्यक्ति**	**16**
Unit II	एक और द्रोणाचार्य (नाटक) पात्र तथा चरित्र चित्रण		**16**
Unit III	एक और द्रोणाचार्य (नाटक) तत्वों के आधार पर समीक्षा		**16**
Unit IV	संक्षेपण तथा पल्लवन		**16**

Recommended Leaning Resources	
Print Resources	एक और द्रोणाचार्य(नाटक) किताबघर प्रकाशन, नई दिल्ली
Digital Resources	https://www.iasbook.com/hindi/hindi-natya-sahitya/

Syllabus of B.Sc. Ability Enhancement compulsory Course(AECC)

Title of the Subject/Discipline : HINDI				
Year	**2**	**Course Code : AECC-3-HINDI (B.Sc.)**	**Credits**	**03**
Sem.	**3**	**Course Title/Discipline : एकांकी संकलन + पत्र लेखन** **Collection of One Act Plays + Letter writting** **Text : एकांकी कलश(एकांकी संग्रह) : ईशान प्रकाशन, नई दिल्ली**	**Hours/weeks** **Total**	**04** **64**
Formative Assessment Marks :40 Summative Assessment Marks :60				**Total Marks:100.**
Learning Outcomes	1. हिन्दी एकांकी साहित्य की जानकारी प्राप्त कर सकेंगे। 2 एकांकी के तत्वों के आधार पर समीक्षा करने की क्षमता प्राप्त कर सकेंगे। 3. संचार के विविध माध्यमों को जान सकेंगे | 4. लेखन कौशल प्राप्त कर सकेंगे।			

Unit No.	Course Content	Suggested Pedagogy	Hours L/P/L
Unit I	एकांकी कलश एकांकी संग्रह के एकांकी क्र. 1, 2	**1. कक्षा व्याख्यान** **2. संवाद एवं बहस** **3. सामूहिक चर्चा** **4.रचनात्मक अभिव्यक्ति**	**16**
Unit II	एकांकी कलश एकांकी संग्रह के एकांकी क्र. 3, 4		**16**
Unit III	एकांकी कलश एकांकी संग्रह के एकांकी क्र. 5, 6		**16**
Unit IV	संचार माध्यम और हिंदी संचार माध्यमों का महत्व संचार माध्यम के प्रकार : मुद्रित माध्यम और इलेक्ट्रॉनिक माध्यम		**16**

Recommended Leaning Resources	
Print Resources	**एकांकी कलश(एकांकी संग्रह) : ईशान प्रकाशन, नई दिल्ली**
Digital Resources	https://www.learncbse.in/cbse-class-11-hindi-jansanchar-madhyam/

Syllabus of B.Sc. Ability Enhancement compulsory Course(AECC)

Title of the Subject/Discipline : HINDI				
Year	2	Course Code : AECC-4-HINDI (B.Sc.)	Credits	03
Sem.	4	Course Title/Discipline : उपन्यास + संचार माध्यम और हिंदी Novel + Mass communication and Hindi Text : सपनों की होम डिलिवरी (उपन्यास) लोकभारती प्रकाशन, अलाहाबाद	Hours/weeks Total	04 64
Formative Assessment Marks :40 Summative Assessment Marks :60				Total Marks:100.
Learning Outcomes	1. हिन्दी उपन्यास साहित्य की जानकारी प्राप्त कर सकेंगे। 2. उपन्यास के तत्वों के आधार पर समीक्षा करने की क्षमता प्राप्त कर सकेंगे। 3. हिंदी पत्रव्यवहार से संबंधित सही जानकारी प्राप्त करेंगे । 4. लेखन कौशल प्राप्त कर सकेंगे।			

Unit No.	Course Content	Suggested Pedagogy	Hours L/P/L
Unit I	सपनों की होम डिलिवरी (उपन्यास) कथानक	1. कक्षा व्याख्यान 2. कवितापाठ 3. अनुवादका व्यावहारिकप्रयोग 4. सामूहिकचर्चा	16
Unit II	सपनों की होम डिलिवरी (उपन्यास) पात्र तथा चरित्र चित्रण		16
Unit III	सपनों की होम डिलिवरी (उपन्यास) तत्वों के आधार पर समीक्षा		16
Unit IV	पत्र लेखन : आवेदन-पत्र, निमंत्रण-पत्र, बैंक सम्बन्धी पत्र, बीमा सम्बन्धी पत्र, व्यापारिक-पत्र		16

Recommended Leaning Resources

Print Resources	1. सपनों की होम डिलिवरी (उपन्यास) लोकभारतीप्रकाशन, अलाहाबाद 2. पत्रकारिता की विभिन्न विधाएँ : डॉ. निशांत सिंह,राधा पब्लिकेशन्स, नईं दिल्ली-110002 3. पत्रकारी लेखन के आयाम : मनोहर प्रभाकर, पंचशील प्रकाशन, जयपुर
Digital Resources	https://www.youtube.com/watch?v=1luwH_hyA9Q

Syllabus of B.A. Ability Enhancement compulsory Course(AECC)

Title of the Subject/Discipline : HINDI				
Year	**2**	**Course Code : AECC-3-HINDI (B.A.)**	**Credits**	**03**
Sem.	**3**	**Course Title/Discipline :** गद्य विविधा समानार्थी तथा विलोम शब्द **Collection of Prose + summarization+ synonymous and opposite words** **Text : गद्य विविधा (गद्य संकलन) राधाकृष्ण प्रकाशन, दिल्ली**	**Hours/weeks** **Total**	**04** **64**
Formative Assessment Marks :40 Summative Assessment Marks :60			**Total Marks:100.**	
Learning Outcomes	1. हिंदी गद्य की विभिन्न विधाओं से परिचित होंगे। 2. हिंदी के गद्यकारों से परिचित होंगे। 3. लेखन कौशल प्राप्त कर सकेंगे। 3. भाषायी शुद्धता के प्रति रुचि निर्माण होगी।			

Unit No.	**Course Content**	**Suggested Pedagogy**	**Hours L/P/L**
Unit I	गद्य विविधा (गद्य संकलन) के पाठ क्र.1,2,3	**1. कक्षा व्याख्यान** **2. संवाद एवं बहस** **3. सामूहिक चर्चा** **4.रचनात्मक अभिव्यक्ति**	**16**
Unit II	गद्य विविधा (गद्य संकलन) के पाठ क्र.4,5		**16**
Unit III	गद्य विविधा (गद्य संकलन) के पाठ क्र.6,7,8		**16**
Unit IV	संक्षेपण, समानार्थी तथा विलोम शब्द		**16**

Recommended Leaning Resources	
Print Resources	गद्य विविधा (गद्य संकलन) राधाकृष्ण प्रकाशन, दिल्ली
Digital Resources	**https://egyankosh.ac.in/bitstream/123456789/27592/1/Unit-2.pdf**

Syllabus of B.A. Ability Enhancement compulsory Course(AECC)

Title of the Subject/Discipline : HINDI				
Year	**2**	**Course Code : AECC-4-HINDI (B.A.)**	**Credits**	**03**
Sem.	**4**	**Course Title/Discipline : खंडकाव्य + पत्रलेखन** **Block Poetry+Functional Hindi** **Text : गाथा कुरुक्षेत्र की (नाट्य काव्य) मनोहर श्याम जोशी** **वाणी प्रकाशन, नई दिल्ली**	**Hours/weeks** **Total**	**04** **64**
Formative Assessment Marks :40 Summative Assessment Marks :60 Total Marks:100.				
Learning Outcomes	1. हिन्दी नाट्य काव्य/ खण्ड काव्य/ समकालीन कविता की पूर्ण जानकारी प्राप्त कर सकेंगे। 2. तत्वों के आधार पर पाठविश्लेषण क्षमता प्राप्त कर सकेंगे। 3. हिंदी पत्रव्यवहार से संबंधित सही जानकारी प्राप्त करेंगे ।			
Unit No.	**Course Content**		**Suggested Pedagogy**	**Hours L/P/L**
Unit I	गाथा कुरुक्षेत्र की (नाट्य काव्य) कथा, पात्र एवं चरित्र चित्रण		**1. कक्षा व्याख्यान** **2. संवाद एवं बहस** **3. सामूहिक चर्चा** **4.आलोचनात्मक मूल्यांकन**	**16**
Unit II	गाथा कुरुक्षेत्र की (नाट्य काव्य) संवाद योजना और भाषा			**16**
Unit III	गाथा कुरुक्षेत्र की (नाट्य काव्य) प्रासंगिकता			**16**
Unit IV	पत्र लेखन : आवेदन-पत्र, निमंत्रण-पत्र, बैंक सम्बन्धी पत्र, बीमा सम्बन्धी पत्र, व्यापारिक-पत्र			**16**
Recommended Leaning Resources				
Print Resources	गाथा कुरुक्षेत्र की (नाट्य काव्य) मनोहर श्याम जोशी, वाणी प्रकाशन, नई दिल्ली			
Digital Resources	https://www.hindigurujee.com/2021/03/samkalin-kavitasamkalin-kavita-ki.html			

Syllabus of Open Elective B.A./B.Com./ B.Sc./ B.B.A./ B.S.W/C.C.J
For all the strems across the discipline
OE

Title of the Subject/Discipline : HINDI				
Year	2	Course Code : OE-3-HINDI (B.A./B.Com./ B.Sc./ B.B.A./ B.S.W/C.C.J)	Credits	03
Sem.	3	Course Title/Discipline : हिंदीभाषाऔर साहित्यका सामान्य परिचय General Introduction to Hindi Language and Literature	Hours/weeks Total	04 64
Formative Assessment Marks :40 Summative Assessment Marks :60				Total Marks:100.
Learning Outcomes	1. हिंदी भाषा के अध्ययन से अपने भविष्य का निर्माण कर सकेंगे। 2. हिंदी साहित्य के गौरवमय इतिहास से परिचित होंगे | 3. हिंदी भाषा और साहित्य का महत्व जान सकेंगे |			

Unit No.	Course Content	Suggested Pedagogy	Hours L/P/L
Unit I	हिंदी भाषा का परिचय तथा महत्व	1. कक्षा व्याख्यान 2. सामूहिकचर्चा 3.रचनात्मक अभिव्यक्ति 4. आईसीटीका उपयोग 5. क्लास सेमिनार	16
Unit II	प्राचीन हिंदी के महत्वपूर्ण कवियों का सामान्य परिचय (कबीरदास, सूरदास, तुलसीदास, बिहारी)		16
Unit III	आधुनिक हिंदी साहित्य का महत्व		16
Unit IV	हिंदी के ज्ञानपीठ पुरस्कार प्राप्त साहित्यिक (सामान्य परिचय)		16

Recommended Leaning Resources	
Print Resources	हिंदी साहित्य : युग और प्रवृत्तियाँ - शिवकुमार शर्मा, अशोक प्रकाशन, नयी सड़क, दिल्ली
Digital Resources	https://jaduikahaniya.com/2019/12/hindi-ke-vividh-rup.html

Syllabus of Open Elective B.A./B.Com./ B.Sc./ B.B.A./ B.S.W/C.C.J
For all the strems across the discipline
OE

Title of the Subject/Discipline : HINDI				
Year	2	Course Code : OE-4-HINDI (B.A./B.Com./ B.Sc./ B.B.A./ B.S.W/C.C.J)	Credits	03
Sem.	4	Course Title/Discipline : अनुवादकौशल Translation	Hours/weeks Total	04 64
Formative Assessment Marks :40 Summative Assessment Marks :60				Total Marks:100.
Learning Outcomes	1. अनुवाद करने में सक्षम होंगे। 4. सूक्ष्म भावों की अभिव्यक्ति में सक्षम होंगे			

Unit No.	Course Content	Suggested Pedagogy	Hours L/P/L
Unit I	अनुवाद : अर्थ तथा परिभाषा	1. कक्षा व्याख्यान 2. सामूहिक चर्चा 3.रचनात्मक अभिव्यक्ति 4. आईसीटी का उपयोग 5. क्लास सेमिनार	16
Unit II	अनुवाद के क्षेत्र		16
Unit III	अनुवाद की सीमाएँ		16
Unit IV	अनुच्छेद का अनुवाद		16

Recommended Leaning Resources	
Print Resources	अनुवाद की व्यावहारिक समस्याएँ : डॉ भोलानाथ तिवारी
Digital Resources	https://www.scotbuzz.org/2017/05/anuvad-ka-arth.html

Syllabus of B.A. with One Major and One Minor Discipline Specific Core DSC

Title of the Subject/Discipline :HINDI				
Year	**2**	**Course Code :DSC-A5-HINDI (B.A.)**	**Credits**	**03**
Sem.	**3**	**Course Title/Discipline :हिंदीसाहित्यकाइतिहास(प्रथमऽ काल)** **History of Hindi Literature**	**Hours/weeks** **Total**	**04** **64**
Formative Assessment Mark : 40 Summative Assessment Marks : 60				**Total Marks:100.**
Learning Outcomes	1. हिंदी साहित्य के गौरवमय इतिहास से परिचित होंगे | 2. हिंदी भाषा और साहित्य का महत्व जान सकेंगे |			
Unit No.	**Course Content**		**Suggested Pedagogy**	**Hours L/P/L**
Unit I	हिंदी साहित्य का कालविभाजन तथा नामकरण		**1. कक्षाव्याख्यान** **2. संवादएवं बहस** **3. सामूहिकचर्चा** **4.रचनात्मक अभिव्यक्ति**	**16**
Unit II	आदिकाल की प्रमुख प्रवृत्तियाँ तथा पृथ्वीराज रासो			**16**
Unit III	भक्तिकाल की विशेषताएँ (कबीरदास, तुलसीदास, सूरदास का सामान्य परिचय)			**16**
Unit IV	रीतिकाल की प्रमुख प्रवृत्तियाँ (बिहारी, भूषण, घनानंद का सामान्य परिचय)			**16**
Recommended Leaning Resources				
Print Resources	हिंदी साहित्य : युग और प्रवृत्तियाँ - शिवकुमार शर्मा, अशोक प्रकाशन, नयी सड़क, दिल्ली साहित्यिक निबंध: गणपतिचंद्र गुप्त,लोकभारती प्रकाशन, इलाहाबाद साहित्यिक निबंध: राजनाथ शर्मा, विनोद पुस्तक मंदिर, आगरा			
Digital Resources	**https://ebooks.lpude.in/arts/ma_hindi/year_1/DHIN401_HINDI_SAHITYA_KA_ITIHAAS.pdf**			

Syllabus of B.A. with One Major and One Minor Discipline Specific Core DSC

Title of the Subject/Discipline : HINDI				
Year	**2**	**Course Code :DSC-A6-HINDI (B.A.)**	**Credits**	**03**
Sem.	**3**	**Course Title/Discipline :**एकांकी संकलन **Collection of One Act Play** **Text: एकांकी संकलन : डॉ मंजरी त्रिपाठी, राजकमल प्रकाशन नयी दिल्ली**	**Hours/weeks** **Total**	**04** **64**
Formative Assessment Marks :40 Summative Assessment Marks :60				**Total Marks:100.**
Learning Outcomes	**1.** हिन्दी एकांकी साहित्य की जानकारी प्राप्त कर सकेंगे। 2 एकांकी के तत्वों के आधार पर समीक्षा करने की क्षमता प्राप्त कर सकेंगे।			

Unit No.	Course Content	Suggested Pedagogy	Hours L/P/L
Unit I	एकांकी के तत्व	**1. कक्षाव्याख्यान** **2. संवाद एवं बहस** **3. सामूहिकचर्चा** **4.रचनात्मक अभिव्यक्ति**	**16**
Unit II	एकांकी संकलन : एकांकी क्र 1,2,3		**16**
Unit III	एकांकी संकलन : एकांकी क्र 4,5		**16**
Unit IV	एकांकी संकलन : एकांकी क्र 6,7		**16**

Recommended Leaning Resources	
Print Resources	एकांकी संकलन : डॉ मंजरी त्रिपाठी, राजकमल प्रकाशन, नयी दिल्ली
Digital Resources	**https://www.youtube.com/watch?v=1luwH_hyA9Q**

Syllabus of B.A. with One Major and One Minor Discipline Specific Core DSC

Title of the Subject/Discipline : HINDI				
Year	**2**	**Course Code :DSC-A7-HINDI (B.A.)**	**Credits**	**03**
Sem.	**4**	**Course Title/Discipline : साहित्यिकविधा: हिंदीसाहित्यका इतिहास(आधुनिककाल)** **Literary Genre:History of Hindi Literature (Modern period)**	**Hours/weeks** **Total**	**03** **48**
Formative Assessment Marks:40 Summative Assessment Marks :60				**Total Marks:100.**
Learning Outcomes	1. हिंदी साहित्य के गौरवमय इतिहास से परिचित होंगे | 2. हिंदी भाषा और साहित्य का महत्व जान सकेंगे |			
	Course Content		**Suggested Pedagogy**	**Hours L/P/L**
Unit I	हिंदी साहित्य के आधुनिक काल का परिचय		**1. कक्षाव्याख्यान** **2. संवादएवंबहस** **3. कवितापाठ** **4. रचनात्मक अभिव्यक्ति**	**16**
Unit II	आधुनिक काव्य की प्रमुख प्रवृत्तियाँ प्रयोगवाद, नयी कविता, राष्ट्रीयता की भावना			**16**
Unit III	हिंदी गद्य का विकास			**16**
Unit IV	हिंदी के ज्ञानपीठ पुरस्कार प्राप्त साहित्यिकों का सामान्य परिचय			**16**
Recommended Leaning Resources				
Print Resources	हिंदी साहित्य : युग और प्रवृत्तियाँ - शिवकुमार शर्मा, अशोक प्रकाशन, नयी सड़क, दिल्ली साहित्यिक निबंध: गणपतिचंद्र गुप्त,लोकभारती प्रकाशन, इलाहाबाद साहित्यिक निबंध: राजनाथ शर्मा, विनोद पुस्तक मंदिर, आगरा			
Digital Resources	**https://mycoaching.in/adhunik-kaal**			

Syllabus of B.A. with One Major and One Minor Discipline Specific Core DSC

Title of the Subject/Discipline : HINDI				
Year	**2**	**Course Code : DSC-A8-HINDI (B.A.)**	**Credits**	**03**
Sem.	**4**	**Course Title/Discipline :साहित्यिक निबंध** **Literary Essay**	**Hours/weeks** **Total**	**03** **48**
Formative Assessment Marks:40 Summative Assessment Marks:60				**Total Marks:100.**
Learning Outcomes	1. हिंदी भाषा और साहित्य का महत्व जान सकेंगे |			
Unit No.	**Course Content**		**Suggested Pedagogy**	**Hours L/P/L**
Unit I	**साहित्यिक निबंध:** हिंदी भाषा का विकास, हिंदी का विश्वव्यापी रूप हिंदी पत्रकारिता का विकास		**1. कक्षा व्याख्यान** **2. सामूहिक चर्चा** **3. क्लास सेमिनार** **4. ICT का प्रयोग** **5. यू ट्यूब चॅनेल का प्रयोग**	**16**
Unit II	**साहित्यिक निबंध:** साहित्य और समाज, आंचलिक उपन्यास, प्रवासी साहित्य			**16**
Unit III	**साहित्यिक निबंध:** कबीरदास, सूरदास, तुलसीदास			**16**
Unit IV	**साहित्यिक निबंध:** छायावाद, प्रगतिवाद, प्रयोगवाद			**16**
Recommended Leaning Resources				
Print Resources	साहित्यिक निबंध: गणपतिचंद्र गुप्त,लोकभारती प्रकाशन, इलाहाबाद साहित्यिक निबंध: राजनाथ शर्मा, विनोद पुस्तक मंदिर, आगरा			
Digital Resources	https://abhivyakti-hindi.org/snibandh/index.htm			

RANI CHANNAMMA UNIVERSITY

BELAGAVI-591156, KARNATAKA

Dept. of Hindi

A

DRAFT

OF

Learning Outcomes-Based Curriculum Framework (LOCF)

For

UNDERGRADUATE DEGREE (B.A.)

Subject: Hindi

Framework

for

Curriculum for B. A. V & VI Semester Discipline Specific Course (DSC)

Curriculum for B. A.V Semester Skill Enhancement Course (SEC)

&

B. A.VI Semester Internship/Project

w. e. f.

Academic Year 2023-24 and Onwards

Composition of Subject Expert Committee Members

S. N	Name	Designation
1	**Prof. (Smt.) Manisha S. Nesarkar** **Department of Marathi** **Rani Channamma University, Belagavi**	**Chairperson**
2	**Shri. Vijaykumar V. Patil** **Head, Department of Hindi** **R. P. D. College of Arts & Commerce, Belagavi**	**Member**
3	**Dr. Shrikant B. Sangam** **Head, Department of Hindi** **CSB Arts, SMRP Science and GLR Commerce College, Ramdurg**	**Member**

हिंदी भाषा साहित्य का अध्ययन/ : प्रस्तावित पाठ्यक्रम

B.A.

Discipline Specific Core Course (DSC) & Skill Enhancement Course (SEC)

Subject : Hindi

Sem	DSC	Credits	Instruction hours/week	SEC	Credits	Instruction hours/week	Total Credits
V	**DSC (Core) 9** हिंदी भाषा और भाषा का इतिहास Hindi & history of Hindi Language	**4**	**4 Hrs**	**SEC 4** सोशल मीडिया Social Media	**3**	**2 (T)+ 1 (P)Hrs**	**15**
	DSC (Core) A10 समकालीन हिंदी साहित्य Contemporary Hindi Literature	**4**	**4 Hrs**				
	DSC (Core) 11 राष्ट्रीय चेतना और हिंदी साहित्य National Consciousness and Hindi Literature	**4**	**4 Hrs**				
VI	**DSC (Core) 12** साहित्य शास्त्र, छंद और अलंकार Poetics, Prosody and Figures of Speech	**4**	**4 Hrs**	**Internship/Project**	**2**		**14**
	DSC (Core) 13 भारतीय साहित्य Indian Literature	**4**	**4 Hrs**				
	DSC (Core) 14 भाषा विज्ञान Linguistics	**4**	**4 Hrs**				

QUESTION PAPER PATTERN WITHOUT PRACTICAL (DSC)

Q. No.	Particulars		Marks	Total
Theory				
I	Objective Type Questions	10 out of 12	01	10
II	Short Answer Questions	4 out of 6	05	20
III	Essay type Answer Questions	3 out of 5	10	30
Total				60
Internal Assessment	IA Tests (2)		20	40
	Assignments		10	
	Seminars/Projects		10	
	Total			100

QUESTION PAPER PATTERN (SEC)

Q. No.	Particulars		Marks	Total
Theory				
I	Short Answer Questions	2 out of 4	05	10
II	Essay type Answer Questions	2 out of 4	10	20
Total				30
Internal Assessment	IA Tests (2)		10	20
	Assignments		10	
	Total			50

B. A. Semester V
Syllabus for Discipline Specific Course (DSC-A9)
Subject : Hindi

Program Name	**B.A.**	Semester	**V**
Course Title	हिंदी भाषा और भाषा का इतिहास		
Course Code:	DSC -A 9	No. of Credits	**4**
Contact hours	**64 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1. हिंदी भाषा का विश्लेषणात्मक ज्ञान प्राप्त होगा।

CO2 विभिन्न बोलियों की समझ विकसित होगी।

CO3 हिंदी भाषा के इतिहास का विकास क्रम समझ पायेंगे

Contents	64 Hrs
Unit- 1 हिंदी भाषा की पृष्ठभूमि -भाषा की परिभाषा, भाषा और बोली, भाषा की उत्पत्ति, भाषा परिवर्तन के कारण, संसार की भाषाओं के वर्गीकरण के आधार, प्राचीन, मध्यकालीन तथा आधुनिक भारतीय आर्यभाषाओं का वर्गीकरण एवं विशेषताएँ	16
Unit: 2 हिंदी का भौगोलिक विस्तार -हिंदी की उपभाषाएँ, पश्चिमी हिंदी, पूर्वी हिंदी, राजस्थानी, बिहारी और उनकी बोलियाँ, ब्रज, अवधि, खडी बोली की विशेषताएँ, हिंदी भाषा का उद्भव और विकास	16
Unit: 3 हिंदी का शब्द समूह- तत्सम, तद्भव, देशज और विदेशी	16
Unit: 4 देवनागरी लिपि – उत्पत्ति, विकास, ब्राह्मी, खरोष्ठी, देवनागरी लिपि की वैज्ञानिकता	16

Pedagogy:

- कक्षा व्याख्यान
- समूह चर्चा
- आंतरिक मूल्यांकन संबंधि गतिविधियाँ

References	
1	हिंदी भाषा का इतिहास – भोलानाथ तिवारी, वाणी प्रकाशन, 4695/21A, दरियागंज, नई दिल्ली – 110002
2	हिंदी भाषा का इतिहास – धीरेन्द्र वर्मा, हिंदुस्तान एकेडमी, प्रयाग
3	हिंदी भाषा की संरचना – रवीन्द्रनाथ श्रीवास्तव, राधाकृष्ण प्रकाशन, नई दिल्ली
4	हिंदी भाषा और लिपि का ऐतिहासिक विकास – सत्यनारायण त्रिपाठी, विश्वविद्यालय प्रकाशन, वाराणसी
5	हिंदी भाषा अतीत से आज तक - डॉ. विजय अग्रवाल वाणी प्रकाशन, दरियागंज, नई दिल्ली – 110002

B. A. Semester V
Syllabus for Discipline Specific Course (DSC-A10)
Subject : Hindi

Program Name	**B.A.**	Semester	**V**
Course Title	**समकालीन साहित्य**		
Course Code:	**DSC-A10**	No. of Credits	**4**
Contact hours	**64 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:
CO1 समकालीन संदर्भों और परिस्थितियों का विश्लेषण करने की समझ विकसित होगी।
CO2 समकालीन कवियों और कृतियों को समझने की क्षमता निर्माण होगी।
CO3 समकालीन विचारधारा को समझ पायेंगे

Contents	**64Hrs**
Unit -1 समकालीन हिंदी साहित्य : समकालीन साहित्य की पृष्ठभूमि, समकालीन साहित्य की अवधारणा और स्वरूप	16
Unit -2 समकालीन साहित्य: समकालीन साहित्य की प्रवृत्तियाँ, समकालीन कवि और लेखक	16
Unit-3 समकालीन कविता तथा कहानी पाठ्यपुस्तक की 8 कविताएँ	16
Unit-4 समकालीन कविता तथा कहानी पाठ्यपुस्तक की 8 कहानियाँ	16

References	
1	समकालीन कविता तथा कहानी (पाठ्यपुस्तक) : लोकभारती प्रकाशन, प्रयागराज -211001
2	समकालीन साहित्य की भूमिका– विश्वंभरनाथ उपाध्याय – हंस प्रकाशन, जयपूर
3	समकालीन हिंदी साहित्य : विविध विमर्श – डॉ. श्रीराम शर्मा : वाणी प्रकाशन, दरियागंज, नई दिल्ली – 110002
4	https://www.youtube.com/watch?v=dXYh-_3OX2M
5	https://www.youtube.com/watch?v=Tst1n3uiEXQ
6	https://www.youtube.com/watch?v=yf-JiXm1GgA
7	https://www.youtube.com/watch?v=1dDP1c0k7KI
8	https://www.youtube.com/watch?v=IzQKCapnazs
9	https://www.youtube.com/watch?v=wHzPBBQePak

B. A. Semester V
Syllabus for Discipline Specific Course (DSC-A11)
Subject : Hindi

Program Name	**B.A.**	Semester	**V**
Course Title	**राष्ट्रीय चेतना और हिंदी साहित्य**		
Course Code:	**DSC-A11**	No. of Credits	**4**
Contact hours	**64 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1 देश के स्वतंत्रता आंदोलन का इतिहास समझ पायेंगे।

CO2 हिंदी के साहित्यकारों के राष्ट्रीय योगदान को समझ पायेंगे।

CO3 राष्ट्रीय चेतना के स्वरूप को समझ पायेंगे।

CO4 राष्ट्र के प्रति प्रेम और गर्व की भावना उत्पन्न होगी।

Contents	**64 Hrs**
Unit -1 राष्ट्रीय चेतना का अर्थ एवं परिभाषा ➢ राष्ट्रीय चेतना का स्वरूप एवं प्रवृत्तियाँ ➢ हिंदी साहित्य में राष्ट्रीय चेतना का उद्भव और विकास – सामान्य परिचय ➢ नवजागरण और राष्ट्रीय आंदोलन ➢ राष्ट्रीय चेतना और हिंदी साहित्य	20
Unit -2 राष्ट्रीय चेतना से संबंधित कविता संकलन	22
Unit -3 राष्ट्रनेता, राष्ट्रभक्त, स्वतंत्रता सेनानियों पर आधारित जीवनी/ संस्मरण/निबंध/रिपोर्ताज़	22

Pedagogy:

- कक्षा व्याख्यान
- समूह चर्चा
- आंतरिक मूल्यांकन संबंधि गतिविधियाँ

References	
1	➢ राष्ट्र चेतना (पाठ्यपुस्तक) : ईशान प्रकाशन, दरियागंज, नई दिल्ली – 110002
2	➢ हिंदी कविता में राष्ट्रीय भावना- विद्यानाथ गुप्त, साहित्य मंदिर प्रकाशन, नई दिल्ली
3	➢ महावीर प्रसाद द्विवेदी और नवजागरण- डॉ. रामविलास शर्मा-, राजकमल प्रकाशन, नई दिल्ली
4	➢ हिंदी की राष्ट्रीय काव्यधारा : एक समग्र अनुशीलन - देवराज शर्मा, इंद्रप्रस्थ प्रकाशन, दिल्ली

B. A. Semester V
Skill Enhancement Course (SEC4)
Subject : Hindi

Program Name	**B.A.**	Semester	**V**
Course Title	**सोशल मीडिया**		
Course Code:	**SEC 4**	No. of Credits	**3**
Contact hours	**48 Hours**	Duration of SEA/Exam	**1 hour**
Formative Assessment Marks	**20**	Summative Assessment Marks	**30**

Course Outcomes (COs):

CO1 सोशल मीडिया के विविध प्रकारों की जानकारी मिलेगी ।

CO2 सोशल मीडिया के माध्यम से आवश्यक ज्ञान प्राप्त कर सकेंगे तथा विविध स्तर पर संपर्क स्थापित कर सकेंगे |

CO3 सोशल मीडिया के क्षेत्र में करियर कर सकेंगे ।

Contents	**32 Hrs**
Unit- 1 सोशल मीडिया का स्वरुप, प्रकार (इन्स्टाग्राम, फेसबुक, ट्विटर, व्हाट्सअप्प, यूट्यूब, टेलिग्राम, लिंकेडीन, स्नैपचैट), सोशल मीडिया - भाषा, संस्कृति और समाज, सोशल मीडिया का प्रभाव	12
Unit -2 सोशल मीडिया और लोकतंत्र, जनजागरूकता एवं सोशल मीडिया, जनांदोलन और सोशल मीडिया, सोशल मीडिया और स्त्री, सोशल मीडिया और युवा वर्ग	10
Unit -3 सोशल मीडिया का व्यावसायिक और सामाजिक परिप्रेक्ष्य, बाजार की रणनीति, सोशल मीडिया में हिंदी का प्रसार और प्रयोग	10

- **Pedagogy:**
- कक्षा आख्यान
- समूह चर्चा
- सोशल मीडिया का प्रत्यक्ष ज्ञान
- आंतरिक मूल्यांकन संबंधि गतिविधियाँ

References

1	➢ मीडिया, भूमण्डलीकरण और समाज : संजय द्विवेदी, यश पब्लिकेशन्स , पंचशील गार्डन, नवीन शाहदरा, दिल्ली-110032
2	➢ वर्चुअल रियलिटी और इंटरनेट : जगदीश्वर चतुर्वेदी, अनामिका पब्लिशर्स, अंसारी रोड, दरियागंज, नई दिल्ली -110002
4	➢ सोशल मीडिया और स्त्री : प्रो रमा, नॉर्थर्न बुक सेंटर, अंसारी रोड, दरियागंज, नई दिल्ली -110002

B. A. Semester VI
Discipline Specific Course (DSC- A12)
Subject : Hindi

Program Name	**B.A.**	Semester	**VI**
Course Title	**साहित्य शास्त्र,छंद और अलंकार**		
Course Code:	DSC- A12	No. of Credits	**4**
Contact hours	**64 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1 भारतीय काव्य शास्त्र की विश्लेषणात्मक समझ विकसित होगी।

CO2 कृतियों के विश्लेषण हेतु भारतीय चिंतन का पक्ष स्पष्ट होगा।

CO3 भारतीय काव्य शास्त्र की जानकारी से आलोचनात्मक चिंतन का निर्माण होगा

Contents	**64 Hrs**
Unit- 1 साहित्य – अर्थ तथा परिभाषा, साहित्य और समाज, साहित्य और जीवन	16
Unit 2-काव्य की परिभाषा एवं लक्षण,काव्य के भेद, काव्य हेतु, काव्य प्रयोजन	16
Unit- 3 इकाई 3 -छंद- परिभाषा और भेद, मात्रिक छंद : दोहा, सोरठा, चौपाई, हरिगीतिका वर्णिक छंद : उपेन्द्रवज्रा, मालिनी, शिखरिणी, वसंततिलका	16
Unit-4 अलंकार – अलंकार के प्रकार – शब्दालंकार : अनुप्रास, यमक, श्लेष, वक्रोक्ति अर्थालंकार : उपमा, रूपक, उत्प्रेक्षा, अतिशयोक्ति, विरोधभास, दृष्टान्त	16

Pedagogy:

- कक्षा व्याख्यान
- समूह चर्चा
- आंतरिक मूल्यांकन
- आंतरिक मूल्यांकन संबंधि गतिविधियाँ

References	
1	➢ काव्यशास्त्र: भगीरथ मिश्र, विश्वविद्यालय प्रकाशन, वाराणसी
2	➢ भारतीय काव्यशास्त्र : शर्मा, विनोद पुस्तक मंदिर, आग्रा
4	➢ समीक्षा लोक- डॉ. भगीरथ मिश्र - नैशनल पब्लिशिंग हाउस, नई दिल्ली
5	➢ रस-छंद-अलंकार : राजेंद्र कुमार पाण्डेय, वाणी प्रकाशन, 4695/21A, दरियागंज, नई दिल्ली - 110002
6	➢ https://www.youtube.com/watch?v=yPmZe_qIMNw ➢ https://www.youtube.com/watch?v=QbVcWs6AI_U

References	

B. A. Semester VI
Discipline Specific Course (DSC- A13)
Subject : Hindi

Program Name	**B.A.**		Semester	**VI**
Course Title	**भारतीय साहित्य**			
Course Code:	DSC -A13		No. of Credits	**4**
Contact hours	**64 Hours**		Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**		Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1 भारतीय साहित्य की अवधारणा की समझ विकसित होगी।

CO2 भारतीय साहित्य की विविध विधाओं में रचित साहित्य के विश्लेषण की समझ विकसित होगी।

CO3 भारतीय साहित्य के समान तत्वों की समझ विकसित होगी।

Contents	**64 Hrs**
Unit -1 भारतीय साहित्य की अवधारणा एवं स्वरूप • भारतीय साहित्य के अध्ययन की समस्याएँ • भारतीय साहित्य में राष्ट्रीयता का भाव • हिंदी साहित्य में भारतीय मूल्यों की अभिव्यक्ति	20
Unit – 2 संस्कार : (मूल कन्नड़ से अनुदित हिंदी उपन्यास) : यू. आर अनंतमूर्ति • उपन्यासकार का परिचय और साहित्यिक योगदान • 'संस्कार' उपन्यास की कथावस्तु • पात्र परिकल्पना • केन्द्रीय विचारधारा, उद्देश्य • उपन्यास में अभिव्यंजित भारतीयता	22
Unit- 3 खामोश! अदालत जारी है : (मूल मराठी से अनुदित हिंदी नाटक) : विजय तेंदुलकर • नाटककार विजय तेंडुलकर , मराठी नाटक में उनका योगदान • नाटक का कथ्यगत विवेचन • पात्र तथा चरित्र चित्रण • अभिव्यंजित समस्या , उद्देश्य, नाट्यकला के आधार पर विवेचन	22

Pedagogy:

- कक्षा व्याख्यान
- समूह चर्चा
- आंतरिक मूल्यांकन
- आंतरिक मूल्यांकन संबंधि गतिविधियाँ

References	
1	➢ भारतीय साहित्य की पहचान : सियाराम तिवारी, वाणी प्रकाशन, दरियागंज, नई दिल्ली - 110002
2	➢ भारतीय साहित्य- डॉ. प्रतिभा मुदलियार, अमन प्रकाशन, कानपुर
3	➢ भारतीय साहित्य- लक्ष्मीकांत पाण्डेय, डॉ. प्रमिला अवस्थी, आशीष प्रकाशन, कानपुर
4	➢ भारतीय साहित्य की अवधारणा – डॉ. राजेन्द्र मिश्र, तक्षशिला प्रकाशन,नई दिल्ली

References	
5	➢ https://www.pustak.org/index.php/books/bookdetails/2739/Sanskar/#freeread

B. A. Semester VI
Discipline Specific Course (DSC-A14)
Subject : Hindi

Program Name	**B.A.**		Semester	**VI**
Course Title	**भाषा विज्ञान**			
Course Code:	DSC -A14		No. of Credits	**4**
Contact hours	**64 Hours**		Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**		Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1 भाषा विज्ञान से संबंधित विश्लेषण संबधी समझ विकसित होगी।

CO2 भाषा की विशेषताओं और उपांगों का विश्लेषणात्मक ज्ञान प्राप्त करेंगे।

CO3 भाषा विज्ञान की शाखाओं के अध्ययन के द्वारा भाषा व्यवहार, संप्रेषण आदि का ज्ञान प्राप्त करेंगे

CO4 भाषा के सामाजिक विश्लेषण की क्षमता निर्माण होगी

CONTENT	**64 Hrs**
Unit: 1 भाषा की परिभाषा और स्वरुप, लिखित और उच्चरित भाषा, भाषा और बोली, भाषा की उत्पत्ति, भाषा परिवर्तन के कारण, भाषा विज्ञान के अध्ययन की दिशाएँ -वर्णनात्मक, ऐतिहासिक और तुलनात्मक	16
Unit: 2 स्वन (ध्वनि) प्रक्रिया, स्वन विज्ञान का स्वरूप और शाखाएँ, स्वन की अवधारणा और स्वनों का वर्गीकरण, स्वनिम विज्ञान का स्वरूप, परिभाषा, ध्वनि परिवर्तन के कारण और दिशाएँ	16
Unit: 3 रूप विज्ञान का रूपविज्ञान : परिभाषा एवं स्वरूप, रूपविज्ञान के प्रकार, रूपिम की अवधारणा और पहचान, रूपिम के भेद और प्रकार्य, वाक्य की अवधारणा, वाक्य के भेद	16
Unit: 4 अर्थविज्ञान-अर्थ की अवधारणा शब्द और अर्थ का संबंध, पर्यायता अनेकार्थता, विलोमता, अर्थ परिवर्तन के कारण और दिशाएँ, भाषाओं का आकृतिमूलक वर्गीकरण	16

Pedagogy:

- कक्षा व्याख्यान
- समूह चर्चा
- दृश्य श्रव्य माध्यम का प्रयोग
- अभ्यास
- समूह चर्चा
- आंतरिक मूल्यांकन संबंधि गतिविधियाँ

References	
1	➢ भाषा विज्ञान- भोलानाथ तिवारी – किताब महल, इलाहाबाद
2	➢ सामान्य भाषा विज्ञान – बाबूराम सक्सेना – हिंदी साहित्य सम्मेलन, प्रयाग

References	
3	➢ भाषा विज्ञान की भूमिका –देवेन्द्रनाथ शर्मा,राधाकृष्ण प्रकाशन, नई दिल्ली
4	➢ भाषा विज्ञान एवं भाषाशास्त्र – कपिलदेव द्विवेदी -विश्वविद्यालय प्रकाशन, वाराणसी
5	➢ https://hpuniv.ac.in/hpuniv/upload/uploadfiles/files/M_A_%20Hindi%20Ist%20Se_%20Course-4.pdf

B. A. Semester VI

Internship/Project

Subject : Hindi

Internship for Graduate Programme (As per UGC & AICTE)

Course tile	Internship/Project (Discipline Specific)
No. of contact hours	90
No. of credits	2
Method of evaluation	Presentations/Reports submission/ Activity etc

इंटर्नशिप

4-6 सप्ताह की अवधि के साथ 90 घंटे (दो क्रेडिट) का कोर्स होगा

इंटर्नशिप पूर्णकालिक/अंशकालिक हो सकता है।(सेमिस्टर की छुट्टियों के दौरान पूर्णकालिक और शैक्षणिक सत्र में अंशकालिक)

इंटर्नशिप मेंटर/पर्यवेक्षक को छठे सेमिस्टर के दौरान अधिकतम 20 घंटे के लिए कार्य आवंटन का लाभ मिलेगा।

इंटर्नशिप पूरी करने के लिए छात्र को अंतिम इंटर्नशिप रिपोर्ट (इंटर्नशिप के 90 घंटे) मेंटर को जमा करनी होगी।

विस्तृत दिशानिर्देश और प्रारूप यूजीसी और एआईसीटीई निर्देशों के अनुसार विश्वविद्यालयों द्वारा अलग से तैयार किए जाएंगे।

प्रोजेक्ट:

छात्रों को हिंदी भाषा, राजभाषा तथा राष्ट्रभाषा के रूप में हिंदी का महत्व, हिंदी भाषा के विविध रूप तथा हिंदी की बोलियाँ, हिंदी साहित्य, प्रवासी साहित्य, आधुनिक हिंदी पत्रकारिता, अनुवाद, सोशल मीडिया और हिंदी, हिंदी के क्षेत्र में रोज़गार, हिंदी रंगभूमि, हिंदी सिनेमा, लोकगीत, गजल, अनुवाद के क्षेत्र में हिंदी का महत्व, भारतीय संस्कृति, राष्ट्रीय एकता, स्वतंत्रता आंदोलन,

महात्माओ का स्थान, रामायण तथा महाभारत, जीवनी, आत्मकथा, निम्न स्तर तथा पिछड़े वर्ग की समस्याएँ आदि में से अध्यापक के मार्गदर्शन में किसी एक विषय पर 40-60 पन्नों का प्रबंध लिखकर यूनिकोड प्रारूप, ए-4 आकार में टाइप कर 3 हार्ड कॉपीज डीलक्स बाइंडिंग कर सॉफ्ट कॉपी के साथ लिखित परीक्षा के दो सप्ताह पहले महाविद्यालय के हिंदी विभाग में सुपूर्त करना होगा । विश्वविद्यालय के निर्देश/परिपत्र और विनियमों के अनुसार अंक भरना अनिवार्य होगा । (40 अंकों का प्रबंध और 10 अंकों का मौखिक परीक्षण होगा।)

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

RANI CHANNAMMA UNIVERSITY

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ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ರಾಷ್ಟ್ರೀಯ ಶಿಕ್ಷಣ ನೀತಿ–2020ರನ್ವಯ

Discipline Specific Core Course

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಇವರಿಗೆ ಸಲ್ಲಿಸಲಾಗಿದೆ

ಕುಲಸಚಿವರು

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ.

ಸಲ್ಲಿಸಿದವರು

ಪ್ರೊ. ಎಸ್. ಎಂ. ಗಂಗಾಧರಯ್ಯ

ಅಧ್ಯಕ್ಷರು, ಕನ್ನಡ ಅಭ್ಯಾಸ ಮಂಡಳಿ

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ಸಲ್ಲಿಸಿದ ದಿನಾಂಕ

25–10–2021

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

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ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಪ್ರಥಮ ಮತ್ತು ದ್ವಿತೀಯ ಸೆಮಿಸ್ಟರ್ (DSC-A1, A2 ಹಾಗೂ DSC-A3, A4 ಕನ್ನಡ ವಿಷಯ ಅಲ್ಲದೇ OEC–1, OEC–2 ಮುಕ್ತ ಆಯ್ಕೆ ಪತ್ರಿಕೆ)

ಕನ್ನಡ ವಿಷಯದ ಪಠ್ಯಕ್ರಮ ಹಾಗೂ ಆಂತರಿಕ ಮತ್ತು ಥಿಯರಿ ಪರೀಕ್ಷಾ ವಿಧಾನವು ಮೊದಲ ವರ್ಷಕ್ಕಾಗಿ ಅಂದರೆ 2021–22ನೇ ಸಾಲಿನ ಮೊದಲ ಮತ್ತು ಎರಡನೆಯ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ಐಚ್ಛಿಕ ವಿಷಯದ ಪಠ್ಯಕ್ರಮ ಹಾಗೂ ಪರೀಕ್ಷಾ ವಿಧಾನವು ಈ ಮುಂದಿನಂತಿರುತ್ತದೆ.

1. ಆಂತರಿಕ ಅಂಕಗಳ ಮಾದರಿ ಮತ್ತು ನೀಡುವ ವಿಧಾನ : ಸಮಗ್ರ ಮತ್ತು ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಮಾದರಿಯನ್ನು ಅನುಸರಿಸಬೇಕಾಗಿರುತ್ತದೆ. ರಚನಾತ್ಮಕ ಮೌಲ್ಯಮಾಪನ (**Formative Assessment**) ಅಂತಿಮ ಹಂತದಲ್ಲಿ ಸಂಚಿತ ಮೌಲ್ಯಮಾಪನ (**Summative Assessment**) ಕ್ರಮದಂತೆ ಆಂತರಿಕ ಅಂಕಗಳನ್ನು ನಿರಂತರ ಮೌಲ್ಯಮಾಪನದ ವರದಿ ಮತ್ತು ಸಂಚಿತ ಮೌಲ್ಯಮಾಪನದ ವರದಿಯ ಆಧಾರದ ಮೇಲೆ ನೀಡುವುದು.

i. ಪತ್ರಿಕೆ ಒಟ್ಟು 100 ಅಂಕಗಳು
ii. ಘಟಕ 1ರ (**Component 1- C1**) ನಿರಂತರ ಮೌಲ್ಯಮಾಪನಕ್ಕೆ 20 ಆಂತರಿಕ ಅಂಕಗಳು (ಸೆಮಿಸ್ಟರ್‌ನ ಮೊದಲೆರಡು ತಿಂಗಳು)
iii. ಘಟಕ 2ರ (**Component 2- C2**) ನಿರಂತರ ಮೌಲ್ಯಮಾಪನಕ್ಕೆ 20 ಆಂತರಿಕ ಅಂಕಗಳು (ಸೆಮಿಸ್ಟರ್‌ನ ನಂತರದೆರಡು ತಿಂಗಳು)
iv. ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯದ ಪರೀಕ್ಷೆಗೆ 60 ಅಂಕಗಳು.

2. **Evaluation process of IA marks shall be as follows:**

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course/s and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of remaining 50 percent of syllabus of the courses of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the University for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator / Principal. The Program Coordinator / Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be

stamped by the concerned department using their department seal at the time of conducting tests / assignment / work etc.

f) The outline for continuous assessment activities for Component-1 (C1) and Component -2 (C2) of a course shall be as under

Activities	**C1**	**C2**	**Total Marks**
Session Test	10% marks	10% marks	20%
Seminars/Presentations/Activity	10% marks		10%
Case study /Assignment / Field work / Project work etc.		10% marks	10%
Total	20% marks	20% marks	40%

- Conduct of Seminar, Case study / Assignment, etc. can be either in C1 or in C2 component at the convenience of the concerned teacher.

Semester & Course	**Course**	**Course Outcome**
1st Semester DSC-A1	ಪ್ರಾಚೀನ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ **DSC-A1**	ಪ್ರಸ್ತುತ ಪತ್ರಿಕೆಯು ಕನ್ನಡದ ಆರಂಭಿಕ ಸಾಹಿತ್ಯ ಪ್ರಕಾರಗಳ ನೆಲೆಯ ಬಗೆಗೆ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಮನವರಿಕೆ ಮಾಡಿಕೊಡುವುದು. ಕನ್ನಡದ ಪ್ರಾಚೀನ ಜ್ಞಾನ ಮತ್ತು ಅನನ್ಯತೆಯನ್ನು ಅವರಲ್ಲಿ ತುಂಬುವುದು. ಆರಂಭಿಕ ಕಾಲಘಟ್ಟದ ಶಾಸನ ಹಾಗೂ ಸಾಹಿತ್ಯ ಪ್ರಕಾರ ಮಾತ್ರವಲ್ಲ ಅಂದಿನ ಸಂದರ್ಭದ ಸಾಹಿತ್ಯದ ಈ ಪತ್ರಿಕೆಯು ತುರ್ತು ಅಗತ್ಯಗಳನ್ನು ಚರ್ಚಿಸುವುದು ಮೂಲ ಆಶಯವಾಗಿದೆ. ಈ ಮೂಲಕ ಕನ್ನಡ ಭಾಷೆಯು ಅಭಿವ್ಯಕ್ತಿಸಿದ ಕನ್ನಡಿಗರ ಬದುಕನ್ನು ಹಾಗೂ ಅವರು ರೂಪಿಸಿದ ಜ್ಞಾನವನ್ನು ಕುರಿತು ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ತಿಳಿಸಿ ಸಮಕಾಲೀನ ಅನಿವಾರ್ಯತೆಗಳ ಜೊತೆಗೆ ಜೋಡಿಸುವುದು ಮತ್ತು ಸಮಕಾಲೀನ ಸವಾಲುಗಳಿಗೆ ಪರಿಹಾರವನ್ನು ಕಂಡುಕೊಳ್ಳುವ ಸಾಧ್ಯತೆಗಳನ್ನು ಮನವರಿಕೆ ಮಾಡಿಕೊಡುವುದು ಪತ್ರಿಕೆಯ ಉದ್ದೇಶವಾಗಿದೆ.
1st Semester DSC-A2	ಪ್ರಾಚೀನ ಕನ್ನಡ ಪಠ್ಯಗಳು **DSC-A2**	ಪ್ರಾಚೀನ ಕನ್ನಡ ಪ್ರತಿಭೆಯನ್ನು ಅಂದಿನವರು ಅಭಿವ್ಯಕ್ತಿಸಿದ ಮಾಧ್ಯಮಗಳಲ್ಲಿ ಸೂಕ್ಷ್ಮವಾಗಿ ಪರಿಶೀಲಿಸಿ ಕಾವ್ಯಗುಣಗಳ ಮೂಲಕ ಸಮಾಜದ ಒಳಿತನ್ನು ಹಾಗೂ ಸಾಂಸ್ಕೃತಿ ಅಸ್ಮಿತೆಯನ್ನು ನಮ್ಮವರು ಕಂಡುಕೊಂಡ ಪರಿಯನ್ನು ಪ್ರಸ್ತುತ ಕಾವ್ಯ ಭಾಗಗಳಲ್ಲಿ ಗುರುತಿಸಿಕೊಳ್ಳುವುದು. ಅಲ್ಲದೇ ಕಾವ್ಯ ಮೌಲ್ಯಗಳನ್ನು ಹಾಗೂ ಸಾಮಾಜಿಕ ಮೌಲ್ಯಗಳನ್ನು ಸಮಕಾಲೀನ ಸಂದರ್ಭಗಳಿಗೆ ಜೋಡಿಸುವುದು.
1st Semester OEC-1	ಕನ್ನಡ ಸಣ್ಣಕತೆಗಳು **OEC-1**	ಕನ್ನಡಿಗರ ಸೃಜನಶೀಲತೆಯ ಮೂಲಕ ಅಭಿವ್ಯಕ್ತಿಸಿದ ಸಾಹಿತ್ಯ ಪ್ರಕಾರಗಳಲ್ಲಿ ಸಣ್ಣಕತೆಯು ಮಹತ್ವದ್ದಾಗಿದೆ. ಸಮಾಜದ ಪ್ರತಿಬಿಂಬವಾಗಿ ನಿಲ್ಲುವ ಸಾಹಿತ್ಯವು ಕಥೆಗಳ ಮೂಲಕ ಸಮಕಾಲೀನ ಸವಾಲುಗಳನ್ನು ಅರ್ಥೈಸಿಕೊಳ್ಳುವುದು ಹಾಗೂ ಆ ಮೂಲಕ ಸವಾಲುಗಳನ್ನು, ಪ್ರತಿರೋಧವನ್ನು ತೋರಿದ ರೀತಿಯನ್ನು ಸೂಕ್ಷ್ಮವಾಗಿ ಅವಲೋಕಿಸುವುದು ಹಾಗೂ ಸೃಜನಶೀಲ ಬದುಕಿನಲ್ಲಿ ಕಲಾತ್ಮಕವಾಗಿ ಬದುಕಿನ ಹೋರಾಟಗಳು ರೂಪಗೊಂಡ ವಿನ್ಯಾಸವನ್ನು ಚರ್ಚಿಸುವುದು.
2nd Semester DSC-A3	ಮಧ್ಯಕಾಲೀನ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ **DSC-A3**	ಮಧ್ಯಕಾಲೀನ ಸಂದರ್ಭದ ಕನ್ನಡಿಗರ ಬದುಕು ಪ್ರಯೋಗಶೀಲವಾದದ್ದು, ಚರಿತ್ರೆಯಲ್ಲಿ ಪದೇ ಪದೇ ನಡೆದ ಯುದ್ಧಗಳು ರಾಜಕೀಯ ಅನಿಶ್ಚಿತತೆಗಳು ಸಾಮಾಜಿಕ, ಸಾಂಸ್ಕೃತಿಕ ಪಲ್ಲಟಗಳ ಜೊತೆಗೆ ಸಾಹಿತ್ಯವು ಹೇಗೆ ಚಳುವಳಿಗಳನ್ನು–ಬದಲಾವಣೆಗಳನ್ನು ತಂದುಕೊಂಡಿತು ಎನ್ನುವುದನ್ನು ಮುಖ್ಯವಾಗಿ ಚರ್ಚಿಸುವುದು.
2nd Semester DSC-A4	ಮಧ್ಯಕಾಲೀನ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪಠ್ಯಗಳು **DSC-A4**	ಮಧ್ಯಕಾಲೀನ ಸಂದರ್ಭದ ಕನ್ನಡಿಗರ ಪ್ರತಿಭೆಯು ಚರಿತ್ರೆಯಲ್ಲಿ ವಿರೋಚಿತ ನೆಲೆಗಳಿಂದ ಹಾಗೂ ಹಲವು ಪ್ರಯೋಗಶೀಲ ಭೂಮಿಕೆಗಳಿಂದ ಅಭಿವ್ಯಕ್ತಿಗೊಂಡಿದೆ. ಮಧ್ಯಕಾಲೀನ ಕನ್ನಡ ಬೌದ್ಧಿಕ ವಲಯ ಹೊಸ ಪ್ರಕಾರಗಳ ಮೂಲಕ ತಮ್ಮ ಚಿಂತನೆಗಳನ್ನು ಹರಿಬಿಟ್ಟಿತು. ಮಾನವೇತಿಹಾಸದಲ್ಲಿ ಮಹತ್ವದ ತಿರುವುಗಳಿಗೆ ಈ ಸಂದರ್ಭದ ಸಾಹಿತ್ಯವು ಕಾರಣವಾಯಿತು. ಅದರಲ್ಲಿ ಮುಖ್ಯವಾಗಿ ವಚನ, ರಗಳೆ, ಷಟ್ಪದಿ, ಸಾಂಗತ್ಯ, ತ್ರಿಪದಿ ಹಾಗೂ ಕೀರ್ತನೆ ಪ್ರಕಾರಗಳು ಇಲ್ಲಿ ಅಭಿವ್ಯಕ್ತಿಯ ಮಾಧ್ಯಮವಾದವು. ಆತ್ಮನ್ನೋತಿಗೆ ಅಗತ್ಯವಿರುವ ಭಕ್ತಿ ಚಳುವಳಿ, ವೀರಕಾವ್ಯಗಳು, ತ್ಯಾಗಭೋಗದ ಸಮನ್ವಯದ ಸಮದೃಷ್ಟಿಕೋನಗಳು ಕಾವ್ಯಗಳು ವಿಶ್ವ ಪ್ರಜ್ಞೆಯ ಸಮಾನತೆಯ ಆಶಯಗಳು ಇಲ್ಲಿ ಅಭಿವ್ಯಕ್ತಿಗೊಂಡಿವೆ. ಸಮಕಾಲೀನ ಸಂದರ್ಭದ ಬಿಕ್ಕಟ್ಟುಗಳಿಗೆ ಇಲ್ಲಿನ

		ಪ್ರಮೇಯಗಳನ್ನು ಜೋಡಿಸಿಕೊಂಡು ಸಮಕಾಲೀನ ಸವಾಲುಗಳನ್ನು ಪರಿಹರಿಸಿಕೊಳ್ಳಲು ಈ ಪಠ್ಯಗಳು ಭೂಮಿಕೆಯನ್ನು ಒದಗಿಸುತ್ತವೆ.
2nd Semester OEC-2	ಕನ್ನಡ ಕಾದಂಬರಿ **OEC-2**	ಸಮಕಾಲೀನ ಸಂದರ್ಭದ ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಸಶಕ್ತ ಪ್ರಕಾರಗಳಲ್ಲಿ ಕಾದಂಬರಿ ಸಾಹಿತ್ಯವು ಒಂದು. ಸೃಜನಶೀಲತೆ ಮತ್ತು ಕಥನ ಕ್ರಮವನ್ನು ರೂಪಿಸುವಲ್ಲಿ ಈ ಪ್ರಕಾರವು ಮಹತ್ವದ ಪಾತ್ರವನ್ನು ವಹಿಸುತ್ತದೆ. ಕನ್ನಡ ಕಾದಂಬರಿಯು ಸೃಜನಶೀಲತೆಯ ಪ್ರತೀಕವಾಗಿ ಹಾಗೂ ಜ್ಞಾನದ ಒಂದು ಭಾಗವಾಗಿ ಅಧ್ಯಯನಿಸುವ ಒಂದು ವಿಶಿಷ್ಟಕ್ರಮವೆಂದು ಇಲ್ಲಿ ಯೋಜಿಸಿಕೊಳ್ಳಲಾಗಿದೆ.

Model Question Paper

Max Marks: 60 Max **Time: 2 hrs**

1. ಪ್ರತಿ ಘಟಕದಿಂದ ಒಂದರಂತೆ ಐದನ್ನು ಕೇಳಿ ಮೂರಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 10X3=30
2. ಪ್ರತಿ ಘಟಕದಿಂದ ಒಂದರಂತೆ ಐದನ್ನು ಕೇಳಿ ಮೂರಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 5X3=15
3. ಎಲ್ಲ ಘಟಕಗಳಿಂದ ಒಟ್ಟು ಏಳು ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಿ (ಲಘು ಪ್ರಶ್ನೆ ಅಥವಾ ಟಿಪ್ಪಣಿ ಅಥವಾ ಸಂದರ್ಭದ ಸ್ವಾರಸ್ಯ ಅಥವಾ ಕಾವ್ಯದ ಅರ್ಥವ್ಯಾಖ್ಯಾನ, ಸಾರಾಂಶ) ಐದಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 3X5=15

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಮೊದಲ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಎ. ಕನ್ನಡ DSC (ಕನ್ನಡ)

Program Structure

Proposed Scheme of Teaching & Evaluation for BA with Kannada as Core subject

Semester I								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L + T + P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
1	**BA. 1.1**	ಪ್ರಾಚೀನ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ	**DSC**	**03**	**60**	**40**	**100**	**3**
2	**BA. 1.2**	ಪ್ರಾಚೀನ ಕನ್ನಡ ಪಠ್ಯಗಳು	**DSC**	**03**	**60**	**40**	**100**	**3**
3	**BA. .1.3**	ಕನ್ನಡ ಸಣ್ಣಕತೆಗಳು	**OEC**	**03**	**60**	**40**	**100**	**3**

Semester II								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours perWeek (L + T + P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
4	**BA. 2.1**	ಮಧ್ಯಕಾಲೀನ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ	**DSC**	**03**	**60**	**40**	**100**	**3**
5	**BA. 2.2**	ಆಧುನಿಕ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪಠ್ಯಗಳು	**DSC**	**03**	**60**	**40**	**100**	**3**
6	**BA. 2.3**	ಕನ್ನಡ ಕಾದಂಬರಿ	**OEC**	**03**	**60**	**40**	**100**	**3**

EXIT OPTION WITH CERTIFICATION – with ability to solve well defined problems

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಮೊದಲ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಎ. ಕನ್ನಡ DSC-A1

ಪ್ರಾಚೀನ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ

ಘಟಕ 1 : ಕನ್ನಡ ಭಾಷೆಯ ಪ್ರಾಚೀನತೆ

ಘಟಕ 2 : ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆಯ ಸ್ವರೂಪ ಮತ್ತು ಅಧ್ಯಯನ ಕ್ರಮಗಳು

ಘಟಕ 3 : ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಪ್ರಾಚೀನ ರೂಪಗಳು (ಗದ್ಯ, ಚಂಪೂ, ಕಂದ)

ಘಟಕ 4 : ಹಳಗನ್ನಡ ಸಾಹಿತ್ಯದ ಪ್ರೇರಣೆ ಪ್ರಭಾವಗಳು

ಘಟಕ 5 : ಹಳಗನ್ನಡ ಪ್ರಮುಖ ಕವಿ, ಕೃತಿಗಳ ಪರಿಚಯ : ಪಂಪ, ಪೊನ್ನ, ರನ್ನ, ನಾಗಚಂದ್ರ, ಒಂದನೆಯ ನಾಗವರ್ಮ, ನಯಸೇನ, ದುರ್ಗಸಿಂಹ, ಆಂಡಯ್ಯ,

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು :

1. ಸಮಗ್ರ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ (ಪ್ರ) ಬೆಂ.ವಿ.ವಿ
2. ಸಾಮಾನ್ಯನಿಗೆ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ (ಪ್ರ) ಬೆಂ.ವಿ.ವಿ
3. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ (ಸಂ) ರಂ.ಶ್ರೀ.ಮುಗಳಿ
4. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ (ಸಂ) ತ.ಶು. ಶಾಮರಾಯ
5. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪುನರ್ ಮೌಲ್ಯೀಕರಣ ಮಾಲೆಯ: ಕರ್ನಾಟಕ ಸಾಹಿತ್ಯ ಅಕಾಡೆಮಿ ಸಂಪುಟಗಳು
6. ಕನ್ನಡ ಕವಿ ಚರಿತೆ: ಮೂರು ಸಂಪುಟಗಳು, ಆರ್. ನರಸಿಂಹಾಚಾರ್ಯ
7. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಮತ್ತು ಚಾರಿತ್ರಿಕ ಪ್ರಜ್ಞೆ: ಸಿ. ವೀರಣ್ಣ, ಬೆಂ.ವಿ.ವಿ.

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಮೊದಲನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಎ. ಕನ್ನಡ DSC-A2

ಪ್ರಾಚೀನ ಕನ್ನಡ ಪದ್ಯಗಳು

ಘಟಕ 1 : ಹಲ್ಮಿಡಿ ಶಾಸನ

ಘಟಕ 2 : 1) ಕವಿಕಾವ್ಯ ಸ್ವರೂಪ (ಕವಿರಾಜಮಾರ್ಗದ ಪ್ರಥಮ ಆಶ್ವಾಸದ ಹತ್ತರಿಂದ ಮೂವತ್ತೈದನೆಯ ಪದ್ಯಗಳು)

2) ಕಾರ್ತೀಕ ಋಷಿಯ ಕತೆ (ವಡ್ಡಾರಾಧನೆ)

3) ನಾರಾಯಣ ಭಟ್ಟನ ಕತೆ (ದುರ್ಗಸಿಂಹನ ಪಂಚತಂತ್ರದ)

ಘಟಕ 3 : ಗದಾಯುದ್ಧ ಏಳನೆಯ ಆಶ್ವಾಸ

ಘಟಕ 4 : ಸೀತಾಪಹರಣ (ನಾಗಚಂದ್ರನ ರಾಮಚಂದ್ರ ಚರಿತೆ ಪುರಾಣದ ಕಾವ್ಯ ಭಾಗ 9ನೇ ಆಶ್ವಾಸದ 72. 74 ರಿಂದ 79, 82, 83, 85, 86,88 ರಿಂದ 102ನೇ ಪದ್ಯಗಳು)

ಘಟಕ 5 : 1) ದಯಾಮಿತ್ರ ಶೆಟ್ಟಿಯ ಕತೆ (ನಯಸೇನನ ಧರ್ಮಾಮೃತ ಪುರಾಣದ ಕತೆ)

2) ಮಾದನಿಯರಸನರೆವೆಣ್ಣಾದಂ – ಆಂಡಯ್ಯ (225 ರಿಂದ 243ನೇ ಪದ್ಯಗಳು)

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು :

1. ಕನ್ನಡ ಶಾಸನಗಳ ಸಾಂಸ್ಕೃತಿಕ ಅಧ್ಯಯನ– ಚಿದಾನಂದಮೂರ್ತಿ
2. ಕರ್ನಾಟಕದ ವೀರಗಲ್ಲುಗಳು– ಆರ್. ಶೇಷಶಾಸ್ತ್ರಿ
3. ಶಾಸನ ಪರಿಚಯ– ಆರ್. ಶೇಷಶಾಸ್ತ್ರಿ
4. ಶಾಸನ ಪ್ರವೇಶ– ಸಿ.ಪಿ.ಕೆ
5. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪುನರ್ ಮೌಲ್ಯೀಕರಣ ಮಾಲೆ: ಕರ್ನಾಟಕ ಸಾಹಿತ್ಯ ಅಕಾಡೆಮಿ ಸಂಪುಟಗಳು
6. ಕನ್ನಡ ಕವಿ ಚರಿತೆ: ಮೂರು ಸಂಪುಟಗಳು, ಆರ್. ನರಸಿಂಹಾಚಾರ್ಯ
7. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಮತ್ತು ಚಾರಿತ್ರಿಕ ಪ್ರಜ್ಞೆ: ಸಿ. ವೀರಣ್ಣ, ಬೆಂ.ವಿ.ವಿ.
8. ಪ್ರಾಚೀನ ಕನ್ನಡ ಕಾವ್ಯಗಳಲ್ಲಿ ಮಾನವೀಯ ಮೌಲ್ಯಗಳು: ಡಾ. ಎಸ್. ಚಂದ್ರಕಿರಣ, ಮೈವಿವಿ
9. ನಾಗಚಂದ್ರ: ವಿಜಯದಬ್ಬೆ, ಮೈವಿವಿ
10. ಕರ್ನಾಟಕ ಕಾದಂಬರಿ: ವಿ. ಸೀತಾರಾಮಯ್ಯ
11. ನಾಗವರ್ಮ ಒಂದು ಅಧ್ಯಯನ: ಸಿಪಿಕೆ
12. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಸಂಗಾತಿ: ಕೀರ್ತಿನಾಥ ಕುರ್ತಕೋಟಿ
13. ಮಹಾಕವಿ ಪಂಪ: ವಿ. ಸೀತಾರಾಮಯ್ಯ
14. ಪಂಪ ಒಂದು ಸಾಂಸ್ಕೃತಿಕ ಅಧ್ಯಯನ: ಡಾ. ಶಾಂತಿನಾಥ ದಿಬ್ಬದ
15. ಗದಾಯುದ್ಧ ಸಂಗ್ರಹ: ತೀ.ನಂ.ಶ್ರೀ.
16. ಕರ್ನಾಟಕ ಕಾದಂಬರಿ ಸಂಗ್ರಹ: ಟಿ.ಎಸ್. ವೆಂಕಣ್ಣಯ್ಯ
17. ರಾಮಚಂದ್ರಚರಿತ ಪುರಾಣ: ನಾಗಚಂದ್ರ

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಮೊದಲ ಸೆಮಿಸ್ಟರ್ ಮುಕ್ತ ಅಯ್ಕೆ (OEC-1)

ಕನ್ನಡ ಸಣ್ಣಕತೆಗಳು

ಪಠ್ಯಕ್ರಮ

ಸುವರ್ಣ ಕಥಾ ಸಂಕಲನ (ಸಂಪಾದಕರು ಕೃಷ್ಣಮೂರ್ತಿ ಹನೂರ ಮತ್ತು ಬಾನು ಮುಷ್ತಾಕ್) ದಲ್ಲಿಯ ಈ ಕೆಳಗಿನ ಕಥೆಗಳನ್ನು ಮಾತ್ರ ಆಯ್ದುಕೊಳ್ಳಲಾಗಿದೆ.

ಘಟಕ – 1

1. ಗೌತಮಿ ಹೇಳಿದ ಕಥೆ – ಮಾಸ್ತಿ ವೆಂಕಟೇಶ ಅಯ್ಯಂಗಾರ
2. ಜೋಗತಿಕಲ್ಲು – ಆನಂದಕಂದ
3. ಪ್ರಕೃತಿ – ಯು. ಆರ್. ಅನಂತಮೂರ್ತಿ

ಘಟಕ – 2

4. ಮಾಯಾಮೃಗ – ಕೆ. ಪಿ. ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ
5. ಧರ್ಮ ಬಲೆ ಬೀಸಿದಾಗ – ಸಾರಾ ಅಬೂಬಕ್ಕರ್
6. ಒಂದು ಹುಡುಗನಿಗೆ ಬಿದ್ದ ಕನಸು – ಬೆಸಗರಹಳ್ಳಿ ರಾಮಣ್ಣ

ಘಟಕ – 3

7. ಬಸ್ಸು ಹೊರಟು ಹೋಯಿತು – ಮಲ್ಲಿಕಾರ್ಜುನ ಹಿರೇಮಠ
8. ಸತ್ಯಾಗ್ರಹ – ಶಾಂತಾರಾಮ ಸೋಮಯಾಜಿ
9. ಕಾಡಜ್ಜ – ರಾಘವೇಂದ್ರ ಪಾಟೀಲ

ಘಟಕ – 4

10. ಮಾಯಾಲೋಕ – ತುಂಬಾಡಿ ರಾಮಯ್ಯ
11. ಅಗಸರ ಅಣ್ಣೆಮ್ಮ – ಚನ್ನಣ್ಣ ವಾಲೀಕಾರ
12. ಅಳಬೇಡ ಕಂದ – ನಾಗತಿಹಳ್ಳಿ ಚಂದ್ರಶೇಖರ್

ಘಟಕ – 5

13. ಮಣ್ಣಸೇರಿದ ಬೀಜ – ಅಮರೀಶ ನುಗಡೋಣಿ
14. ತಾಯ್ತನ – ಹೆಚ್. ನಾಗವೇಣಿ
15. ಮಗು ಚಿತ್ರ ಬರೆಯಿತು – ಸುನಂದಾ ಪ್ರಕಾಶ ಕಡಮೆ

ಪರಾಮರ್ಶನ ಗ್ರಂಥ :

1. ಸುವರ್ಣ ಕಥಾ ಸಂಕಲನ, ಸಂ. ಕೃಷ್ಣಮೂರ್ತಿ ಹನೂರ ಮತ್ತು ಬಾನು ಮುಷ್ತಾಕ್, ಕನ್ನಡ ಮತ್ತು ಸಂಸ್ಕೃತಿ ಇಲಾಖೆ, ಕನ್ನಡ ಭವನ, ಬೆಂಗಳೂರು–56002, ಪ್ರಕಟಣೆಯ ವರ್ಷ–2006.

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಎರಡನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಎ. ಕನ್ನಡ DSC-A3

ಮಧ್ಯಕಾಲೀನ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ

ಘಟಕ 1 : ನಡುಗನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆಯ ಪ್ರೇರಣೆ ಮತ್ತು ಧೋರಣೆಗಳು

ಘಟಕ 2 : ವಚನ ಸಾಹಿತ್ಯ, ರಗಳೆ, ಷಟ್ಪದಿ, ಸಾಂಗತ್ಯ, ತ್ರಿಪದಿ ಮತ್ತು ನಡುಗನ್ನಡ ಕಾವ್ಯಗಳ ಸ್ವರೂಪ, ಮಹತ್ವ ಮತ್ತು ವೈಶಿಷ್ಟ್ಯಗಳು

ಘಟಕ 3 : 12ನೇ ಶತಮಾನದ ವಚನಕಾರರ ಜೀವನ ಮತ್ತು ಸಾಹಿತ್ಯ ಪರಿಚಯ : ಜೇಡರದಾಸಿಮಯ್ಯ, ಬಸವಣ್ಣ, ಅಲ್ಲಮಪ್ರಭು, ಸಿದ್ಧರಾಮ, ಚೆನ್ನಬಸವಣ್ಣ, ಅಕ್ಕಮಹಾದೇವಿ, ಅಮುಗೆರಾಯಮ್ಮ, ಉರಿಲಿಂಗ ಪೆದ್ದಿಗಳ ಪುಣ್ಯಶ್ರೀ ಕಾಳವ್ವೆ, ಮುಕ್ತಾಯಕ್ಕ, ಹದಿಮೂರನೇ ಶತಮಾನದ ಭಕ್ತಿ ಸಾಹಿತ್ಯದ ಪರಿಚಯ – ಹರಿಹರ, ರಾಘವಾಂಕರ ಜೀವನ ಮತ್ತು ಕೃತಿಗಳ ಪರಿಚಯ

ಘಟಕ 4 : ಕುಮಾರವ್ಯಾಸ, ಲಕ್ಷ್ಮೀಶ, ಚಾಮರಸ, ರತ್ನಾಕರವರ್ಣಿ, ಸಂಚಿಹೊನ್ನಮ್ಮ, ಸರ್ವಜ್ಞ ಕವಿಗಳ ಜೀವನ ಮತ್ತು ಸಾಹಿತ್ಯ ಕೃತಿಗಳ ಪರಿಚಯ

ಘಟಕ 5 : ದಾಸ ಸಾಹಿತ್ಯ – ಪುರಂದರದಾಸರು, ಕನಕದಾಸರು, ವಿಜಯದಾಸರು ಮತ್ತು ಹರಪನಹಳ್ಳಿ ಭೀಮವ್ವರವರ ಜೀವನ ಮತ್ತು ಕೀರ್ತನ ಸಾಹಿತ್ಯದ ಪರಿಚಯ

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು :

1. ಸಮಗ್ರ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ ಸಂಪುಟಗಳು– ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು
2. ಕನ್ನಡ ಅಧ್ಯಯನ ಸಂಸ್ಥೆಯ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ ಸಂಪುಟಗಳು –ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ
3. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ – ಡಾ. ರಂ. ಶ್ರೀ. ಮುಗಳಿ
4. ಕನ್ನಡ ಸಾಹಿತ್ಯ ರೂಪಗಳು – ಡಾ. ರಂ. ಶ್ರೀ. ಮುಗಳಿ
5. ಯುಗಧರ್ಮ ಮತ್ತು ಕನ್ನಡ ಸಾಹಿತ್ಯದರ್ಶನ – ಪ್ರೊ. ಕೀರ್ತಿನಾಥ ಕುರ್ತಕೋಟಿ
6. ಸಾಮಾನ್ಯನಿಗೆ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ ಸಂಪುಟಗಳು– ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ
7. ಹರಿಹರನ ರಗಳೆಗಳು ಸಾಂಸ್ಕೃತಿಕ ಮುಖಾಮುಖಿ– ಸಂ: ಶಿವಾನಂದ ಎಸ್. ವಿರಕ್ತಮಠ
8. ವಚನ ಸಾಹಿತ್ಯ ಸಾಂಸ್ಕೃತಿಕ ಅಧ್ಯಯನ – ಡಾ. ಪಿ. ವಿ. ನಾರಾಯಣ
9. ಕನ್ನಡ ಚಾರಿತ್ರಿಕ ಬೆಳವಣಿಗೆ ಸಂ 1, 2 ಡಾ. ಸಿ ವೀರಣ್ಣ
10. ಸಾಮಾನ್ಯನಿಗಾಗಿ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ (ಹತ್ತು ಸಂಪುಟಗಳು) – ಬೆಂ.ವಿ.ವಿ. ಬೆಂಗಳೂರು
11. ಸಾಹಿತ್ಯ ಸಂಗಾತಿ – ಕೀರ್ತಿನಾಥ ಕುರ್ತಕೋಟಿ, ಮನೋಹರ ಗ್ರಂಥಮಾಲಾ, ಧಾರವಾಡ

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಎರಡನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಎ. ಕನ್ನಡ DSC-A4
ನಡುಗನ್ನಡ ಸಾಹಿತ್ಯ ಪಠ್ಯಗಳು

ಘಟಕ 1 : ಶ್ರೀ. ಬಸವೇಶ್ವರ ವಚನಾಮೃತ (ಶ್ರೀ. ಬಸವೇಶ್ವರ ವಚನಾಮೃತ, ಸಂಪಾದನೆ. ಡಾ. ಆರ್. ಸಿ. ಹಿರೇಮಠ, ವಚನ ಅಧ್ಯಯನ ಕೇಂದ್ರ, ನಾಗನೂರ ರುದ್ರಾಕ್ಷಿಮಠ, ಶಿವಬಸವ ನಗರ, ಬೆಳಗಾವಿ–590010, 2017 ಈ ಕೆಳಗಿನ ಆಯ್ದ ಭಾಗಗಳು ಮಾತ್ರ)

1. ಸಂಸಾರದ ಸೊಡರು
2. ಸಮಾಜ ದರ್ಶನ
3. ಸತ್ಯಶುದ್ಧ ಕಾಯಕ
4. ವಿಶ್ವಸಂದೇಶ

ಘಟಕ 2 : ಪುಷ್ಪ ರಗಳೆ – ಹರಿಹರ

ಘಟಕ 3 : ಕರ್ಣಾಟ ಭಾರತ ಕಥಾ ಮಂಜರಿ – ಕುಮಾರವ್ಯಾಸ (ದ್ರೋಣ ಪರ್ವದ 5ನೆಯ ಸಂಧಿ)

ಘಟಕ 4 : ಸರ್ವಜ್ಞನ ತ್ರಿಪದಿಗಳು (ಸರ್ವಜ್ಞನ ವಚನಗಳು. ಸಂಪಾದನೆ ಡಾ. ಎಲ್. ಬಸವರಾಜು, ಪ್ರಕಾಶನ–ಸಪ್ನ ಬುಕ್ ಹೌಸ್, ಬೆಂಗಳೂರು–560009, ಪ್ರಕಟಣೆಯ ವರ್ಷ–2019 ಈ ಕೆಳಗಿನ ಆಯ್ದ ಅವತರಿಣಿಕೆಗಳು ಮಾತ್ರ)

1. ಜ್ಞಾನ ಪದ್ದತಿ
2. ದಾನ ಪದ್ದತಿ
3. ರಾಜನೀತಿ ಪದ್ದತಿ

ಘಟಕ 5 : ಭರತೇಶ ವೈಭವ ಕಟಕ ವಿನೋದಿನ 49ನೆಯ ಸಂಧಿ (ರತ್ನಾಕರವರ್ಣಿ ಸಂಪುಟ, ಸಂಪಾದಕರು, ಎಂ. ಜಿ. ಬಿರಾದರ, ಪ್ರಕಾಶನ–ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ.)

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು :

1. ಹೊಸಗನ್ನಡದ ಅರುಣೋದಯ: ಶ್ರೀನಿವಾಸ ಹಾವನೂರ
2. ಹೊಸಗನ್ನಡದ ಕವಿತೆಯ ಮೇಲೆ ಇಂಗ್ಲೀಷ ಕಾವ್ಯದ ಪ್ರಭಾವ: ಎಸ್. ಅನಂತನಾರಾಯಣ
3. ಯುಗಧರ್ಮ ಹಾಗೂ ಸಾಹಿತ್ಯ ದರ್ಶನ: ಕೆ.ಡಿ. ಕುರ್ತಕೋಟಿ
4. ಪ್ರಗತಿಶೀಲ ಸಾಹಿತ್ಯ: ಅನಕೃ (ಸಂ)
5. ಬಂಡಾಯ–ದಲಿತ ಸಾಹಿತ್ಯ: ಪುರುಷೋತ್ತಮ ಬಿಳಿಮಲೆ
6. ಹೊಸಗನ್ನಡ ಸಾಹಿತ್ಯ: ಎಲ್.ಎಸ್. ಶೇಷಗಿರಿರಾವ್
7. 20ನೆಯ ಶತಮಾನದ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಘಟ್ಟಗಳು: ಬಸವರಾಜ ಸಾದರ, (ಸಂ) ಕ.ವಿ.ಸಂ. ಧಾರವಾಡ
8. ಕರ್ನಾಟಕ ಸಂಗಾತಿ: ಕನ್ನಡ ಅಭಿವೃದ್ಧಿ ಪ್ರಾಧಿಕಾರ ಪ್ರಕಟಣೆ
9. ಮಹಿಳಾ ಅಧ್ಯಯನದ ತಾತ್ವಿಕತೆ ಮತ್ತು ಮಹಿಳಾ ಚಳುವಳಿಗಳು: ಪ್ರೀತಿ ಶುಭಚಂದ್ರ
10. ಭಾರತೀಯ ಸ್ತ್ರೀವಾದ: ಧರಣಿದೇವಿ ಮಾಲಗತ್ತಿ
11. ಶತಮಾನದ ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ (ಸಂ): ಎಚ್.ಎಸ್. ರಾಘವೇಂದ್ರರಾವ್
12. ಹೊಸ ಅಲೆ: ಸಿ.ಪಿ. ಸಿದ್ಧಾಶ್ರಮ
13. ಆಧುನಿಕ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪ್ರಕಾರಗಳು (ಭಾಗ–1,2) : ಜಿ.ಆರ್. ತಿಪ್ಪೇಸ್ವಾಮಿ, ಕರಾಮುವಿವಿ ಪ್ರಕಟಣೆ
14. ಸೀಮಾತೀತ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ (ಸಂ): ಅರವಿಂದ ಮಾಲಗತ್ತಿ (ಪ್ರ.ಸಂ)

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಎರಡನೆಯ ಸೆಮಿಸ್ಟರ್ ಮುಕ್ತ ಅಯ್ಕೆ (OEC-2)

ಕನ್ನಡ ಕಾದಂಬರಿಗಳು

ಘಟಕ – 1 ಕನ್ನಡ ಕಾದಂಬರಿಗಳ ಹುಟ್ಟು, ಬೆಳವಣಿಗೆ

ಘಟಕ – 2 ಮತ್ತು 3

1. ಬೆಟ್ಟದ ಜೀವ – ಶಿವರಾಮ ಕಾರಂತರ

ಘಟಕ – 4 ಮತ್ತು 5

2. ಕದಳಿಯ ಕರ್ಪೂರ – ತಿಪ್ಪೇರುದ್ರಸ್ವಾಮಿ

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು :

1. ಯುಗಧರ್ಮ ಮತ್ತು ಸಾಹಿತ್ಯ ದರ್ಶನ: ಕೀರ್ತಿನಾಥ ಕುರ್ತಕೋಟಿ, ಮನೋಹರ ಗ್ರಂಥಮಾಲೆ, ಧಾರವಾಡ
2. ಕನ್ನಡ ಕಾದಂಬರಿಯ ಮೊದಲ ಹೆಜ್ಜೆಗಳು (ಸಂ): ವಿವೇಕ ರೈ, ಮಂಗಳೂರು ವಿವಿ
3. ಕನ್ನಡ ಕಾದಂಬರಿ ನಡೆದು ಬಂದ ರೀತಿ: ಶಾಂತಿನಾಥ ದೇಸಾಯಿ
4. ಆಧುನಿಕ ಭಾರತೀಯ ಸಾಹಿತ್ಯ: ಎಂ.ಜಿ. ಕೃಷ್ಣಮೂರ್ತಿ, ಅಕ್ಷರ ಪ್ರಕಾಶನ, ಹೆಗ್ಗೋಡು, ಶಿವಮೊಗ್ಗ
5. ಕನ್ನಡ ಕಥನ ಸಾಹಿತ್ಯ: ಕಾದಂಬರಿ : ಡಾ. ಜಿ.ಎಸ್. ಅಮೂರ, ಸ್ವಪ್ನ ಬುಕ್‌ಹೌಸ, ಬೆಂಗಳೂರು
6. ಕನ್ನಡ ಮೊದಲ ಕಾದಂಬರಿಗಳು: ಜಿ.ಎಸ್. ರಂಗನಾಥರಾವ್, ವಸಂತ ಪ್ರಕಾಶನ, ಬೆಂಗಳೂರು
7. ನಾಡು ನುಡಿಯ ರೂಪಕ: ಶಿವರಾಮ ಪಡಿಕ್ಕಲ್, ಮಂಗಳೂರು ವಿವಿ
8. ಸಾಹಿತ್ಯ ಕಥನ: ಡಿ.ಆರ್. ನಾಗರಾಜು, ಅಕ್ಷರ ಪ್ರಕಾಶನ, ಹೆಗ್ಗೋಡು, ಶಿವಮೊಗ್ಗ
9. ಕನ್ನಡ ಕಥನ ಸಾಹಿತ್ಯ: ಸಣ್ಣ ಕಥೆ: ಡಾ. ಜಿ.ಎಸ್. ಅಮೂರ, ಪ್ರೀಯದರ್ಶಿನಿ ಪ್ರಕಾಶನ ಬೆಂಗಳೂರು

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

RANI CHANNAMMA UNIVERSITY

ವಿದ್ಯಾಸಂಗಮ, ರಾಷ್ಟ್ರೀಯ ಹೆದ್ದಾರಿ–0೪, ಭೂತರಾಮನಹಟ್ಟಿ, ಬೆಳಗಾವಿ –೫೯೧೧೫೬

E-mail: kannadadept@rcub.ac.in Website: www.rcub.ac.in

ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಬಿ.ಎ. ಮೂರು ಮತ್ತು ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ) (DSC) ಪತ್ರಿಕೆಯ ಪಠ್ಯಕ್ರಮ

(Discipline Specific Course)

ಕನ್ನಡ ಭಾಷಾ ವಿಷಯದ ಪಠ್ಯಕ್ರಮ ಹಾಗೂ ಆಂತರಿಕ ಮತ್ತು ಥಿಯರಿ ಪರೀಕ್ಷಾ ವಿಧಾನವು ಎರಡನೆಯ ವರ್ಷಕ್ಕಾಗಿ ಅಂದರೆ 2022–23ನೇ ಸಾಲಿನ ಮೂರು ಮತ್ತು ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ಭಾಷಾ ವಿಷಯದ ಪಠ್ಯಕ್ರಮ ಹಾಗೂ ಪರೀಕ್ಷಾ ವಿಧಾನವು ಈ ಮುಂದಿನಂತಿರುತ್ತದೆ.

1. ಆಂತರಿಕ ಅಂಕಗಳ ಮಾದರಿ ಮತ್ತು ನೀಡುವ ವಿಧಾನ : ಸಮಗ್ರ ಮತ್ತು ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಮಾದರಿಯನ್ನು ಅನುಸರಿಸಬೇಕಾಗಿರುತ್ತದೆ. ರಚನಾತ್ಮಕ ಮೌಲ್ಯಮಾಪನ (**Formative Assessment**) ಅಂತಿಮ ಹಂತದಲ್ಲಿ ಸಂಚಿತ ಮೌಲ್ಯಮಾಪನ (**Summative Assessment)** ಕ್ರಮದಂತೆ ಆಂತರಿಕ ಅಂಕಗಳನ್ನು ನಿರಂತರ ಮೌಲ್ಯಮಾಪನದ ವರದಿ ಮತ್ತು ಸಂಚಿತ ಮೌಲ್ಯಮಾಪನದ ವರದಿಯ ಆಧಾರದ ಮೇಲೆ ನೀಡುವುದು.

i. ಪತ್ರಿಕೆ ಒಟ್ಟು 100 ಅಂಕಗಳು

ii. ಘಟಕ 1ರ (**Component 1- C1**) ನಿರಂತರ ಮೌಲ್ಯಮಾಪನಕ್ಕೆ 20 ಆಂತರಿಕ ಅಂಕಗಳು (ಸೆಮಿಸ್ಟರ್‌ನ ಮೊದಲೆರಡು ತಿಂಗಳು)

iii. ಘಟಕ 2ರ (**Component 2- C2**) ನಿರಂತರ ಮೌಲ್ಯಮಾಪನಕ್ಕೆ 20 ಆಂತರಿಕ ಅಂಕಗಳು (ಸೆಮಿಸ್ಟರ್‌ನ ನಂತರದೆರಡು ತಿಂಗಳು)

iv. ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯದ ಪರೀಕ್ಷೆಗೆ 60 ಅಂಕಗಳು.

2. **Evaluation process of IA marks shall be as follows:**

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course/s and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of remaining 50 percent of syllabus of the courses of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the University for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator / Principal. The Program Coordinator / Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be stamped by the concerned department using their department seal at the time of conducting tests / assignment / work etc.

f) The outline for continuous assessment activities for Component-1 (C1) and Component -2 (C2) of a course shall be as under

Activities	C1	C2	Total Marks
Session Test	10% marks	10% marks	20%
Seminars/Presentations/Activity	10% marks		10%
Case study /Assignment / Field work / Project work etc.		10% marks	10%
Total	20% marks	20% marks	40%

Conduct of Seminar, Case study / Assignment, etc. can be either in C1 or in C2 component at the convenience of the concerned teacher.

Course Structure of DSC, AECC & OEC for B.A/B.S.W (whichever applicable) Kannada subject

Semester III								
Sl. No.	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	SEE	CIE	Total Marks	Credits
1	BA/BSW Language-1	Language-1	AECC	04	60	40	100	3
2	BA. 3.1	ಭಾರತೀಯ ಮತ್ತು ಪಾಶ್ಚಾತ್ಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆ	DSC	03	60	40	100	3
3	BA. 3.2	ಕನ್ನಡ ಕಾವ್ಯಮೀಮಾಂಸೆಯ ಆಧುನಿಕ ರೂಪಗಳು	DSC	03	60	40	100	3
4	BA/BSW 4.3	ಸ್ಪರ್ಧಾತ್ಮಕ ಕನ್ನಡ	OEC	03	60	40	100	3

Semester IV								
Sl. No.	Course Code	Title of the Course	Category of Courses	Teaching Hours perWeek (L + T + P)	SEE	CIE	Total Marks	Credits
5	BA/BSW Language-1	Language-1	AECC	04	60	40	100	3
6	BA. 4.1	ಸಂಶೋಧನೆ ಮತ್ತು ವಿಮರ್ಶೆ	DSC	03	60	40	100	3
7	BA. 4.2	ಜಾನಪದ ಹಾಗೂ ಮಹಿಳಾ ಸಾಹಿತ್ಯ	DSC	03	60	40	100	3
8	BA/BSW 4.3	ಭಾಷಾಂತರ ಮತ್ತು ರಂಗಭೂಮಿ	OEC	03	60	40	100	3

EXIT OPTION WITH CERTIFICATION – with ability to solve well defined problems

Model Question Paper

Max Marks: 60 Max **Time: 2 hrs**

1. ಪ್ರತಿ ಘಟಕದಿಂದ ಎರಡು ಪ್ರಬಂಧ ರೂಪದ ಪ್ರಶ್ನೆ ಕೇಳಿ ಒಂದಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 10X4=40
2. ಪ್ರತಿ ಘಟಕದಿಂದ ಒಂದರಂತೆ ನಾಲ್ಕು ಟಿಪ್ಪಣಿ ರೂಪದ ಪ್ರಶ್ನೆ ಕೇಳಿ ಎರಡಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 5X2=10
3. ಇಡೀ ಪಠ್ಯಕ್ಕೆ ಅನ್ವಯಿಸಿ ಒಂದು ಅಂಕದ ಹತ್ತು ವಸ್ತು ನಿಷ್ಠಪ್ರಶ್ನೆ ಕೇಳುವುದು 1X10=10

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ
ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ
ಬಿ.ಎ. ಮೂರನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ) (DSC) ಮೊದಲನೆಯ ಪತ್ರಿಕೆಯ ಪಠ್ಯಕ್ರಮ
2022–23ರಿಂದ ಅನ್ವಯವಾಗುವಂತೆ

ಮೂರನೆಯ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ (DSC)
ಮೊದಲನೆಯ ಪತ್ರಿಕೆ–5 (ಎ) : ಭಾರತೀಯ ಮತ್ತು ಪಾಶ್ಚಾತ್ಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆ

(ಕ್ರೆಡಿಟ್‌ಗಳು–೩, ಪಾಠದ ಅವಧಿ–೩ ಗಂಟೆಗಳು, ಲಿಖಿತ ಪರೀಕ್ಷೆಗೆ ೬೦ ಅಂಕಗಳು ಹಾಗೂ ಆಂತರಿಕ ಗುಣಾಂಕಗಳು–೪೦)

೧. ಭಾರತೀಯ ಕಾವ್ಯಮೀಮಾಂಸೆ : ಪರಿಚಯ, ಕಾವ್ಯಕಾರಣಗಳು: ಪ್ರತಿಭೆ, ವ್ಯುತ್ಪತ್ತಿ, ಸಹೃದಯ, ಕಾವ್ಯ ಪ್ರಯೋಜನ

೨. ಪ್ರಮುಖ ಅಲಂಕಾರಿಕರು : ಭರತ, ಭಾಮಹ, ದಂಡಿ, ಆನಂದವರ್ಧನ, ವಾಮನ, ಅಭಿನವಗುಪ್ತ, ಕ್ಷೇಮೇಂದ್ರ, ರಾಜಶೇಖರ

೩. ಪ್ರಮುಖ ಸಿದ್ಧಾಂತಗಳು : ಅಲಂಕಾರ, ರಸ, ರೀತಿ, ಧ್ವನಿ, ಔಚಿತ್ಯ, ವಕ್ರೋಕ್ತಿ

೪. ಪಾಶ್ಚಾತ್ಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆ : ಕಾವ್ಯ ಕುರಿತ ಪರಿಕಲ್ಪನೆಗಳು, ವ್ಯಾಖ್ಯಾನ

೫. ಪ್ರಮುಖ ಸಿದ್ಧಾಂತಗಳು : ಪ್ಲೇಟೋನ ಅನುಕರಣವಾದ,ರಿಸ್ಟಾಟಲ್‌ನ ಕೆಥಾರ್ಸಿಸ್, ಲಾಂಜಿನಸ್‌ನ ಮಹೊನ್ನತಿ ತತ್ವ, ಟಿ.ಎಸ್. ಏಲಿಯಟ್‌ರ ವ್ಯಕ್ತಿತ್ವ ನಿರಸನ ಸಿದ್ಧಾಂತ

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು :

೧. ಭಾರತೀಯ ಕಾವ್ಯಮೀಮಾಂಸೆ– ತೀ.ನಂ.ಶ್ರೀ.

೨. ತೌಲನಿಕ ಕಾವ್ಯಮೀಮಾಂಸೆ– ಎಚ್. ತಿಪ್ಪೇರುದ್ರಸ್ವಾಮಿ

೩. ರಸೋವೈಸಃ –ಕುವೆಂಪು

೪. ಕಾವ್ಯಾರ್ಥ ಚಿಂತನ – ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ

೫. ಪಾಶ್ಚಾತ್ಯ ಕಾವ್ಯಮೀಮಾಂಸೆ – ವಿ.ಎಂ. ಇನಾಂದಾರ್

೬. ಸಾಹಿತ್ಯ ಪ್ರವೇಶ – (ಅನು) ಸಿ.ಪಿ.ಕೆ. (ಮೂಲ : ಹಡ್ಸನ್)

೭. ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆಯ ಮೂಲತತ್ವಗಳು – ಡಾ.ಎಚ್. ತಿಪ್ಪೇರುದ್ರಸ್ವಾಮಿ

೮. ವಿಮರ್ಶೆಯ ಪರಿಭಾಷೆ – ಓ.ಎಲ್. ನಾಗಭೂಷಣಸ್ವಾಮಿ

೯. ಪ್ರಾಯೋಗಿಕ ವಿಮರ್ಶೆ– ಸಂ: ಡಾ.ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ, ಲಕ್ಷ್ಮೀನಾರಾಯಣ ಭಟ್

೧೦. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಮೀಮಾಂಸೆ– ಡಾ. ರಹಮತ ತರೀಕೆರೆ

೧೧. ಪಾಶ್ಚಾತ್ಯ ಸಾಹಿತ್ಯ ವಾದಗಳು – ಡಾ.ಸಿ.ಆರ್. ಯರವಿನತೆಲೆಮಠ

೧೨. ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆಯ ಮಾದರಿಗಳು – ಡಾ.ಸಿ.ಆರ್. ಯರವಿನತೆಲಿಮಠ

೧೩. ಆಧುನಿಕ ಇಂಗ್ಲಿಷ್ ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ – ಪ್ರೊ.ಎಲ್.ಎಸ್. ಶೇಷಗಿರಿರಾವ್

೧೪. ತರಗತಿಗಳಲ್ಲಿ ಕುವೆಂಪು ಬೋಧಿಸಿದ ಕಾವ್ಯಮೀಮಾಂಸೆ – ಡಾ.ಎಸ್.ಎಂ. ವೃಷಭೇಂದ್ರಸ್ವಾಮಿ

೧೫. ಧ್ವನ್ಯಾಲೋಕ : ಒಂದು ಅಧ್ಯಯನ – ಕೆ.ವಿ. ನಾರಾಯಣ

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ
ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಬಿ.ಎ. ಮೂರನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ) (DSC) ಎರಡನೆಯ ಪತ್ರಿಕೆಯ ಪಠ್ಯಕ್ರಮ
2022–23ರಿಂದ ಅನ್ವಯವಾಗುವಂತೆ

ಮೂರನೆಯ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ (DSC)

ಎರಡನೆಯ ಪತ್ರಿಕೆ–6 (ಎ) : ಕನ್ನಡ ಕಾವ್ಯಮೀಮಾಂಸೆಯ ಆಧುನಿಕ ರೂಪಗಳು

(ಕ್ರೆಡಿಟ್‌ಗಳು–೩, ಪಾಠದ ಅವಧಿ–೩ ಗಂಟೆಗಳು, ಲಿಖಿತ ಪರೀಕ್ಷೆಗೆ ೬೦ ಅಂಕಗಳು ಹಾಗೂ ಆಂತರಿಕ ಗುಣಾಂಕಗಳು–೪೦)

೧. **ಕನ್ನಡ ಕಾವ್ಯಮೀಮಾಂಸೆ** : ಕಾವ್ಯ ಕುರಿತು ಕನ್ನಡ ಲಾಕ್ಷಣಿಕರ ಚಿಂತನೆಗಳು– ಕವಿರಾಜಮಾರ್ಗ, ಕಾವ್ಯಾವಲೋಕನ, ಕನ್ನಡ ಕುವಲಯಾನಂದ (ಜಾಯಗೊಂಡ), ಕುವೆಂಪು, ತೀ.ನಂ.ಶ್ರೀ., ಎಚ್.ತಿಪ್ಪೇರುದ್ರಸ್ವಾಮಿ.

೨. **ಜಾನಪದರ ಕಾವ್ಯ ಮೀಮಾಂಸೆ :** ಜಾನಪದದಲ್ಲಿ ಕಾವ್ಯಶಾಸ್ತ್ರ ಕುರಿತ ಉಲ್ಲೇಖಗಳು

೩. **ದಲಿತ ಮತ್ತು ಬಂಡಾಯ ಪ್ರಜ್ಞೆಯ ಕಾವ್ಯಮೀಮಾಂಸೆಯ ಅಂಶಗಳು**

೪. **ಮಹಿಳಾ ಕಾವ್ಯ ಮೀಮಾಂಸೆ :** ಸ್ತ್ರೀ ಸಂವೇದನೆಗಳ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ರೂಪಿತಗೊಂಡ ಕಾವ್ಯ ತತ್ವಗಳು

೫. **ಆಧುನಿಕ ಕಾವ್ಯ ವಾದಗಳು** (ಅಭಿಜಾತವಾದ, ನವಅಭಿಜಾತವಾದ, ರಮ್ಯವಾದ, ಆದರ್ಶವಾದ, ಸೌಂದರ್ಯವಾದ, ವಾಸ್ತವವಾದ, ಸಂಕೇತವಾದ, ಪ್ರತಿಮಾವಾದ, ಅಭಿವ್ಯಕ್ತಿವಾದ, ಅತಿವಾಸ್ತವಾದ, ಅಸ್ತಿತ್ವವಾದ, ನವ್ಯವಾದ, ನವ್ಯೋತ್ತರವಾದ, ಕಪ್ಪು ಸುಂದರವಾದ)

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು :

೧. ಭಾರತೀಯ ಕಾವ್ಯಮೀಮಾಂಸೆ– ತೀ.ನಂ.ಶ್ರೀ.
೨. ತೌಲನಿಕ ಕಾವ್ಯಮೀಮಾಂಸೆ– ಎಚ್. ತಿಪ್ಪೇರುದ್ರಸ್ವಾಮಿ
೩. ರಸೋವೈಸಃ –ಕುವೆಂಪು
೪. ಕಾವ್ಯಾರ್ಥ ಚಿಂತನ – ಜಿ. ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
೫. ಪಾಶ್ಚಾತ್ಯ ಕಾವ್ಯಮೀಮಾಂಸೆ – ವಿ.ಎಂ. ಇನಾಂದಾರ್
೬. ಸಾಹಿತ್ಯ ಪ್ರವೇಶ – (ಅನು) ಸಿ.ಪಿ.ಕೆ. (ಮೂಲ: ಹಡ್ಸನ್)
೭. ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆಯ ಮೂಲತತ್ವಗಳು– ಡಾ. ಎಚ್. ತಿಪ್ಪೇರುದ್ರಸ್ವಾಮಿ
೮. ವಿಮರ್ಶೆಯ ಪರಿಭಾಷೆ – ಓ.ಎಲ್. ನಾಗಭೂಷಣಸ್ವಾಮಿ
೯. ಪ್ರಾಯೋಗಿಕ ವಿಮರ್ಶೆ – ಡಾ.ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ, ಲಕ್ಷ್ಮೀನಾರಾಯಣ ಭಟ್
೧೦. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಮೀಮಾಂಸೆ– ಡಾ. ರಹಮತ ತರೀಕೆರೆ
೧೧. ಪಾಶ್ಚಾತ್ಯ ಸಾಹಿತ್ಯ ವಾದಗಳು – ಡಾ.ಸಿ.ಆರ್. ಯರವಿನತೆಲೆಮಠ
೧೨. ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆಯ ಮಾದರಿಗಳು – ಡಾ.ಸಿ.ಆರ್. ಯರವಿನತೆಲಿಮಠ
೧೩. ಆಧುನಿಕ ಇಂಗ್ಲಿಷ್ ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ – ಪ್ರೊ.ಎಲ್.ಎಸ್. ಶೇಷಗಿರಿರಾವ್
೧೪. ತರಗತಿಗಳಲ್ಲಿ ಕುವೆಂಪು ಬೋಧಿಸಿದ ಕಾವ್ಯಮೀಮಾಂಸೆ – ಡಾ.ಎಸ್.ಎಂ. ವೃಷಭೇಂದ್ರಸ್ವಾಮಿ
೧೫. ಧ್ವನ್ಯಾಲೋಕ : ಒಂದು ಅಧ್ಯಯನ – ಕೆ. ವಿ. ನಾರಾಯಣ
೧೬. ಕನ್ನಡ ಕಾವ್ಯ ಮೀಮಾಂಸೆ – ಡಾ. ನಟರಾಜ ಬೂದಾಳ
೧೭. ಸೌಂದರ್ಯ ಸಮೀಕ್ಷೆ – ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
೧೮. ಜನಪದ ಕಾವ್ಯ ಮೀಮಾಂಸೆ – ವೀರಣ್ಣ ದಂಡೆ
೧೯. ಕನ್ನಡ ಕಾವ್ಯ ಮೀಮಾಂಸೆ – ಎಸ್.ಎಂ.ಹಿರೇಮಠ

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ
ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ
ಬಿ.ಎ. ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ) (DSC) ಮೊದಲನೆಯ ಪತ್ರಿಕೆಯ ಪಠ್ಯಕ್ರಮ
2022–23ರಿಂದ ಅನ್ವಯವಾಗುವಂತೆ

ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ (DSC)
ಮೊದಲನೆಯ ಪತ್ರಿಕೆ–೭ (ಎ) : ಸಂಶೋಧನೆ ಮತ್ತು ವಿಮರ್ಶೆ

(ಕ್ರೆಡಿಟ್‌ಗಳು–೩, ಪಾಠದ ಅವಧಿ–೩ ಗಂಟೆಗಳು, ಲಿಖಿತ ಪರೀಕ್ಷೆಗೆ ೬೦ ಅಂಕಗಳು ಹಾಗೂ ಆಂತರಿಕ ಗುಣಾಂಕಗಳು–೪೦)

೧. ಸಂಶೋಧನೆಯ ಪರಿಕಲ್ಪನೆ, ಅರ್ಥ, ಸ್ವರೂಪ, ಸಂಶೋಧನೆ ಮತ್ತು ವಿಮರ್ಶೆಯ ಅಂತಸ್ಸಂಬಂಧ, ಸಾಮ್ಯತೆ, ಆಕರ ಸಾಮಾಗ್ರಿಗಳು.
೨. ಕ್ಷೇತ್ರಕಾರ್ಯ: ಕ್ಷೇತ್ರಕಾರ್ಯಾಚರಣೆ, ವ್ಯಕ್ತಿಗಳು, ಪ್ರಶ್ನಾವಳಿಗಳು, ನಮೂನೆಗಳು ಇತ್ಯಾದಿ
೩. ಸಂಶೋಧನಾಹಂತಗಳು, ಆಕರಗಳ ಸಂಗ್ರಹ, ಆಕರಗಳ ವಿಶ್ಲೇಷಣೆ, ಆಕರಗಳ ವ್ಯಾಖ್ಯಾನ ಮಾದರಿಗಳು ಹಾಗೂ ಉಹಾತ್ಮಕ ಸತ್ಯಗಳು, ಸಂಶೋಧಕನ ಜವಾಬ್ದಾರಿಗಳು
೪. ವಿಮರ್ಶೆಯ ಮೂಲತತ್ವಗಳು : ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ– ಅರ್ಥ, ಸ್ವರೂಪ, ಉದ್ದೇಶ, ಮೂಲತತ್ವಗಳು, ವಿಧಾನಗಳು
೫. ವಿಮರ್ಶೆಯ ಪ್ರಕಾರಗಳು– ಅ) ಚಾರಿತ್ರಿಕ, ರೂಪನಿಷ್ಠ, ಸಮಾಜಶಾಸ್ತ್ರೀಯ, ಮನೋವೈಜ್ಞಾನಿಕ, ಪ್ರಾಯೋಗಿಕ, ರಾಚನಿಕ, ವಸ್ತುನಿಷ್ಠ ಮತ್ತು ಸ್ತ್ರೀವಾದಿ ವಿಮರ್ಶೆ,
ಆ) ಒಳಮುಖಿ ವಿಮರ್ಶೆ– ಹೊರಮುಖಿ ವಿಮರ್ಶೆ

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು :

೧. ಸಂಶೋಧನೆ – ಎಂ. ಚಿದಾನಂದಮೂರ್ತಿ
೨. ಕನ್ನಡ ಸಂಶೋಧನಾ ಶಾಸ್ತ್ರ – ಡಾ.ಎಂ.ಎಂ. ಕಲಬುರ್ಗಿ
೩. ಸಂಶೋಧನಾ ವಿಧಾನ – ಪಿ.ವಿ. ಕುಲಕರ್ಣಿ, ಹರಿಕೃಷ್ಣ ಭರಣ್ಯ, ಜಿ. ಸದಾಶಿವ.
೪. ಕನ್ನಡ ಸಂಶೋಧನಾ ಮಾರ್ಗಮತ್ತು ಇತಿಹಾಸ – ಡಾ.ಸಂಗಮೇಶ ಸವದತ್ತಿಮಠ
೫. ಸಂಶೋಧನಾ ರಂಗ– ತಾಳ್ತಜೆ ವಸಂತಕುಮಾರ
೬. ಸಂಶೋಧನಾ ಸ್ವರೂಪ – ಡಾ.ಬಿ.ವಿ. ಶಿರೂರ
೭. ಮಾನವಿಕ ಸಂಶೋಧನೆ – ಡಾ.ಚಂದ್ರ ಪೂಜಾರ
೮. ವಿಮರ್ಶೆಯ ಪೂರ್ವಪಶ್ಚಿಮ – ಜಿ.ಎಸ್ ಶಿವರುದ್ರಪ್ಪ
೯. ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆಯ ಮೂಲತತ್ವಗಳು – ಡಾ.ಎಚ್. ತಿಪ್ಪೇರುದ್ರಸ್ವಾಮಿ
೧೦. ವಿಮರ್ಶೆಯ ಪರಿಭಾಷೆ – ಓ.ಎಲ್. ನಾಗಭೂಷಣಸ್ವಾಮಿ
೧೧. ಪ್ರಾಯೋಗಿಕ ವಿಮರ್ಶೆ – ಡಾ.ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
೧೨. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಮೀಮಾಂಸೆ – ಡಾ.ರಹಮತ ತರೀಕೆರೆ
೧೩. ಪಾಶ್ಚಾತ್ಯ ಸಾಹಿತ್ಯ ವಾದಗಳು – ಸಿ.ಆರ್. ಯರವಿನತಲೆಮಠ
೧೪. ಕಾವ್ಯ ಶಾಸ್ತ್ರ ಪರಿಭಾಷೆ – ಮಲ್ಲೇಪುರಂ. ಜಿ. ವೆಂಕಟೇಶ
೧೫. ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ – ಸಿ.ಎನ್. ರಾಮಚಂದ್ರನ್

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ
ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ
ಬಿ.ಎ. ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ) (DSC) ಎರಡನೆಯ ಪತ್ರಿಕೆಯ ಪಠ್ಯಕ್ರಮ
2022–23ರಿಂದ ಅನ್ವಯವಾಗುವಂತೆ
ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ (DSC)
ನಾಲ್ಕನೆಯ ಪತ್ರಿಕೆ–೮ (ಎ)ಜಾನಪದ ಹಾಗೂ ಮಹಿಳಾ ಸಾಹಿತ್ಯ

(ಕ್ರೆಡಿಟ್‌ಗಳು–೩, ಪಾಠದ ಅವಧಿ–೩ ಗಂಟೆಗಳು, ಲಿಖಿತ ಪರೀಕ್ಷೆಗೆ ೬೦ ಅಂಕಗಳು ಹಾಗೂ ಆಂತರಿಕ ಗುಣಾಂಕಗಳು–೪೦)

೧. ಜನಪದ–ಜಾನಪದ ಚರ್ಚೆ, ಜಾನಪದ ಸಿದ್ಧಾಂತಗಳು, ಭೌತಿಕ ಜಾನಪದ, ಮೌಖಿಕ ಜಾನಪದ, ಜಾನಪದ ಕಾವ್ಯ.
೨. ರಂಗಭೂಮಿ ಹಾಗು ಪ್ರದರ್ಶನ ಕಲೆಗಳು, ಜನಪದ ಮಹಾಕಾವ್ಯಗಳು, ಜಾನಪದದಲ್ಲಿ ಪ್ರಾದೇಶಿಕತೆ, ದೈವತಗಳು, ನಂಬಿಕೆಗಳು, ಐತಿಹ್ಯಗಳು
೩. ಜಾನಪದ ಕ್ಷೇತ್ರಕಾರ್ಯ, ವಿಧಾನ, ಪ್ರಶ್ನಾವಳಿ, ಜಾನಪದ ಸಾಹಿತ್ಯ ಸಂಗ್ರಹ, ವರ್ಗೀಕರಣ, ವಿಶ್ಲೇಷಣೆ
೪. ಮಹಿಳಾ ಸಾಹಿತ್ಯ: ಸ್ತ್ರೀವಾದಿ ಓದು ಮತ್ತು ಸ್ತ್ರೀವಾದಿ ವಿಮರ್ಶೆ, ಕನ್ನಡ ಸಾಹಿತ್ಯದಲ್ಲಿ ಮಹಿಳೆಯ ಪ್ರತಿನಿಧೀಕರಣ, ಕನ್ನಡ ಲೇಖಕಿಯರು ಮತ್ತು ಜನಪ್ರಿಯ ಸಾಹಿತ್ಯ
೫. ಅಧ್ಯಯನಕ್ಕಾಗಿ ಪಠ್ಯಗಳು : 'ಗುಲಾಬಿ ಟಾಕೀಸ್' – ವೈದೇಹಿ, ಸ್ತ್ರೀವಾದ – ಡಾ. ಎಚ್.ಎಸ್. ಶ್ರೀಮತಿ

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು :

೧. ಜಾನಪದ ಸ್ವರೂಪ – ಡಾ. ಹಾ.ಮಾ.ನಾ.
೨. ಸೈದ್ಧಾಂತಿಕ ಜಾನಪದ – ಅಂಬಳಿಕೆ ಹಿರಿಯಣ್ಣ
೩. ಜಾನಪದ ಪ್ರಕಾರಗಳು – ತೀ.ನಂ. ಶಂಕರನಾರಾಯಣ
೪. ಜನಾಪದ ಸಿದ್ಧಾಂತಗಳು – ವೀರಣ್ಣ ದಂಡೆ
೫. ಜಾನಪದ ತತ್ವಗಳು ಮತ್ತು ಸಿದ್ಧಾಂತಗಳು – ಅಂಬಳಿಕೆ ಹಿರಿಯಣ್ಣ
೬. ಜಾನಪದ ದರ್ಶನ – ಕರ್ನಾಟಕ ವಿ.ವಿ.
೭. ಕರ್ನಾಟಕ ಜಾನಪದ – ಜಾನಪದ ಅಕಾಡೆಮಿ
೮. ಜಾನಪದ ಸಾಹಿತ್ಯ – ಗಿರಡ್ಡಿ ಗೋವಿಂದರಾಜ
೯. ಜಾನಪದ ವೀಕ್ಷಣೆ – ಅಂಬಳಿಕೆ ಹಿರಿಯಣ್ಣ
೧೦. ಜಾನಪದ ಕಾವ್ಯಗಳು – ಸಂ. ಆರ್ವಿಯಸ್ ಸುಂದರಂ, ಮೈಸೂರು ವಿ. ವಿ.
೧೧. ಸ್ತ್ರೀವಾದ ಮತ್ತು ಮಹಿಳಾ ಅಧ್ಯಯನ ಒಂದು ಪ್ರವೇಶಿಕೆ – ಡಾ.ಡಿ. ಮಂಗಳಾ ಪ್ರಿಯದರ್ಶಿನಿ
೧೨. ಮಹಿಳಾ ಅಧ್ಯಯನದ ತಾತ್ವಿಕ ನೆಲೆಗಳು ಮತ್ತು ಮಹಿಳಾ ಚಟುವಟಿಕೆಗಳು – ಡಾ.ಪ್ರೀತಿ ಶುಭಚಂದ್ರ
೧೩. ಸ್ತ್ರೀವಾದಿ ದಿಕ್ಸೂಚಿ – ಡಾ.ಇಂದಿರಾ ಆರ್.
೧೪. ಮಹಿಳಾ ಸಂಕಥನ – ಗಾಯತ್ರಿ ನಾವಡ
೧೫. ಸ್ತ್ರೀವಾದ – ಸುಮಿತ್ರಾಬಾಯಿ ಬಿ.ಎನ್.
೧೬. ಮಹಿಳಾ ಸಾಹಿತ್ಯ ಸಮೀಕ್ಷೆ – ಆರ್ಯಾಂಬಾ ಪಟ್ಟಾಭಿ
೧೭. ಆಧುನಿಕ ಮಹಿಳಾ ಸಾಹಿತ್ಯ – ಉಷಾ ಎಂ.
೧೮. ಸ್ತ್ರೀವಾದ ಪದವಿವರಣ ಕೋಶ – ಎಚ್.ಎಸ್.ಶ್ರೀಮತಿ
೧೯. ಸ್ತ್ರೀವಾದ : ಅಂಚಿನಿಂದ ಕೇಂದ್ರದೆಡೆಗೆ – ಎಚ್.ಎಸ್.ಶ್ರೀಮತಿ
೨೦. ಎಲ್ಲರಿಗಾಗಿ ಸ್ತ್ರೀವಾದ – ಎಚ್.ಎಸ್.ಶ್ರೀಮತಿ

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

RANI CHANNAMMA UNIVERSITY

ವಿದ್ಯಾಸಂಗಮ, ರಾಷ್ಟ್ರೀಯ ಹೆದ್ದಾರಿ–೦೪, ಭೂತರಾಮನಹಟ್ಟಿ, ಬೆಳಗಾವಿ –೫೯೧೧೫೬

E-mail: kannadadept@rcub.ac.in Website: WWW.rcub.ac.in

ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಮೂರು ಮತ್ತು ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಎ/ಬಿ.ಎಸ್.ಡಬ್ಲೂ/ಸಿ.ಸಿ.ಜೆ (Ability Enhancement Compulsory Course)

Language-1

ಕನ್ನಡ ಭಾಷಾ ವಿಷಯದ ಪಠ್ಯಕ್ರಮ ಹಾಗೂ ಆಂತರಿಕ ಮತ್ತು ಥಿಯರಿ ಪರೀಕ್ಷಾ ವಿಧಾನವು ಎರಡನೆಯ ವರ್ಷಕ್ಕಾಗಿ ಅಂದರೆ 2022–23ನೇ ಸಾಲಿನ ಮೂರು ಮತ್ತು ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ಭಾಷಾ ವಿಷಯದ ಪಠ್ಯಕ್ರಮ ಹಾಗೂ ಪರೀಕ್ಷಾ ವಿಧಾನವು ಈ ಮುಂದಿನಂತಿರುತ್ತದೆ.

1. ಆಂತರಿಕ ಅಂಕಗಳ ಮಾದರಿ ಮತ್ತು ನೀಡುವ ವಿಧಾನ : ಸಮಗ್ರ ಮತ್ತು ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಮಾದರಿಯನ್ನು ಅನುಸರಿಸಬೇಕಾಗಿರುತ್ತದೆ. ರಚನಾತ್ಮಕ ಮೌಲ್ಯಮಾಪನ (**Formative Assessment**) ಅಂತಿಮ ಹಂತದಲ್ಲಿ ಸಂಚಿತ ಮೌಲ್ಯಮಾಪನ (**Summative Assessment**) ಕ್ರಮದಂತೆ ಆಂತರಿಕ ಅಂಕಗಳನ್ನು ನಿರಂತರ ಮೌಲ್ಯಮಾಪನದ ವರದಿ ಮತ್ತು ಸಂಚಿತ ಮೌಲ್ಯಮಾಪನದ ವರದಿಯ ಆಧಾರದ ಮೇಲೆ ನೀಡುವುದು.

i. ಪತ್ರಿಕೆ ಒಟ್ಟು 100 ಅಂಕಗಳು
ii. ಘಟಕ 1ರ (**Component 1- C1**) ನಿರಂತರ ಮೌಲ್ಯಮಾಪನಕ್ಕೆ 20 ಆಂತರಿಕ ಅಂಕಗಳು (ಸೆಮಿಸ್ಟರ್‌ನ ಮೊದಲೆರಡು ತಿಂಗಳು)
iii. ಘಟಕ 2ರ (**Component 2- C2**) ನಿರಂತರ ಮೌಲ್ಯಮಾಪನಕ್ಕೆ 20 ಆಂತರಿಕ ಅಂಕಗಳು (ಸೆಮಿಸ್ಟರ್‌ನ ನಂತರದೆರಡು ತಿಂಗಳು)
iv. ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯದ ಪರೀಕ್ಷೆಗೆ 60 ಅಂಕಗಳು.

2. **Evaluation process of IA marks shall be as follows:**

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course/s and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of remaining 50 percent of syllabus of the courses of the semester.

c) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the University for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator / Principal. The Program Coordinator / Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be stamped by the concerned department using their department seal at the time of conducting tests / assignment / worketc.

f) The outline for continuous assessment activities for Component-1 (C1) and Component -2 (C2) of a course shall be as under

Activities	C1	C2	Total Marks
Session Test	10% marks	10% marks	20%
Seminars/Presentations/Activity	10% marks		10%
Case study /Assignment / Field work / Project work etc.		10% marks	10%
Total	20% marks	20% marks	40%

Conduct of Seminar, Case study / Assignment, etc. can be either in C1 or in C2 component at the convenience of the concerned teacher.

Course Structure of DSC, AECC & OEC for B.A/B.S.W (whichever applicable) Kannada subject

Semester III								
Sl. No.	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	SEE	CIE	Total Marks	Credits
1	BA/BSW Language-1	Language-1	AECC	04	60	40	100	3
2	BA. 3.1	ಭಾರತೀಯ ಮತ್ತು ಪಾಶ್ಚಾತ್ಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆ	DSC	03	60	40	100	3
3	BA. 3.2	ಕನ್ನಡ ಕಾವ್ಯಮೀಮಾಂಸೆಯ ಆಧುನಿಕ ರೂಪಗಳು	DSC	03	60	40	100	3
4	BA/BSW 4.3	ಸ್ಪರ್ಧಾತ್ಮಕ ಕನ್ನಡ	OEC	03	60	40	100	3

Semester IV								
Sl. No.	Course Code	Title of the Course	Category of Courses	Teaching Hours perWeek (L + T + P)	SEE	CIE	Total Marks	Credits
5	BA/BSW Language-1	Language-1	AECC	04	60	40	100	3
6	BA. 4.1	ಸಂಶೋಧನೆ ಮತ್ತು ವಿಮರ್ಶೆ	DSC	03	60	40	100	3
7	BA. 4.2	ಜಾನಪದ ಹಾಗೂ ಮಹಿಳಾ ಸಾಹಿತ್ಯ	DSC	03	60	40	100	3
8	BA/BSW 4.3	ಭಾಷಾಂತರ ಮತ್ತು ರಂಗಭೂಮಿ	OEC	03	60	40	100	3

EXIT OPTION WITH CERTIFICATION – with ability to solve well defined problems

Model Question Paper

Max Marks: 60 Max **Time: 2 hrs**

1. ಪ್ರತಿ ಘಟಕದಿಂದ ಎರಡು ಪ್ರಬಂಧ ರೂಪದ ಪ್ರಶ್ನೆ ಕೇಳಿ ಒಂದಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 10X4=40
2. ಪ್ರತಿ ಘಟಕದಿಂದ ಒಂದರಂತೆ ನಾಲ್ಕು ಟಿಪ್ಪಣಿ ರೂಪದ ಪ್ರಶ್ನೆ ಕೇಳಿ ಎರಡಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 5X2=10
3. ಇಡೀ ಪಠ್ಯಕ್ಕೆ ಅನ್ವಯಿಸಿ ಒಂದು ಅಂಕದ ಹತ್ತು ವಸ್ತು ನಿಷ್ಠಪ್ರಶ್ನೆ ಕೇಳುವುದು 1X10=10

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಮೂರನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಎ/ಬಿ.ಎಸ್.ಡಬ್ಲೂ

(Ability Enhancement Compulsory Course)

Language-1

(ವಾರಕ್ಕೆ 4 ಗಂಟೆಗಳ ಪಾಠ, 3 ಕ್ರೆಡಿಟ್‌ಗಳ ಪತ್ರಿಕೆ, ಒಟ್ಟು ಅಂಕಗಳು–100, ಥಿಯರಿ ಪರೀಕ್ಷೆಗೆ–60 ಅಂಕಗಳು, ಆಂತರಿಕ ಗುಣಾಂಕಗಳಿಗೆ–40 ಅಂಕಗಳು, ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯಕ್ಕೆ 2 ಗಂಟೆಗಳ ಪರೀಕ್ಷೆ, ಆಂತರಿಕ ಗುಣಾಂಕಗಳ ಕುರಿತು ನೀಡಿದ ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಪದ್ದತಿಯನ್ನು ಮೇಲೆ ತಿಳಿಸಿರುವಂತೆ ನಡೆಸುವುದು.)

ಘಟಕ – 1 : ರಾಷ್ಟ್ರೀಯತೆ

1. ಭಾರತದಲ್ಲಿ ರಾಷ್ಟ್ರೀಯವಾದ – ರವೀಂದ್ರನಾಥ ಟ್ಯಾಗೋರ
2. ನೇತಾಜಿ – ಹುಲಕುಂದ ಭೀಮಕವಿ
3. ವೀರಪರಂಪರೆ ಮುಂದುವರೆಸಿದ ರಾಯಣ್ಣ... – ಜ್ಯೋತಿ ಹೊಸೂರ
4. ಕಟ್ಟುತ್ತೇವ ನಾವು – ಸತೀಶ ಕುಲಕರ್ಣಿ

ಘಟಕ – 2 : ಕೃಷಿ

1. ಕೃಷಿ ಪದ್ದತಿ – ಸರ್ವಜ್ಞ
2. ಅಡಕೆಯ ಮಾನ – ಕೆ. ವಿ. ಸುಬ್ಬಣ್ಣ
3. ಕೆರೆಗಳಿಗೆ ಕಾಯಕಲ್ಪ – ಚಂದ್ರಶೇಖರ ನಂಗಲಿ
4. ಮಳೆಯ ಹಬ್ಬಕ್ಕೆ ನೀರೇ ಔತಣ – ಬಿಳಿಗೆರೆ ಕೃಷ್ಣಮೂರ್ತಿ

ಘಟಕ – 3 : ಕ್ರೀಡೆ

1. ಕುಂಟೊಬಿಲ್ಲೆ – ಎ. ಕೆ. ರಾಮಾನುಜನ್
2. ಓಲಪಿಂಕ್ ಆಟಗಳು – ರಾಮಮನೋಹರ ಲೋಹಿಯಾ
3. ಜನಪದ ಆಟಗಳು – ಶ್ರೀರಾಮ ಇಟ್ಟಣ್ಣನವರ
4. ನಾವು ಅವರಂತಲ್ಲ – ರೂಪ ಹಾಸನ

ಘಟಕ – 4 : ಸಂಕೀರ್ಣ

1. ಕರ್ಣರಸಾಯನಮಲ್ತೆ ಭಾರತಂ – ಪಂಪ
2. ಆಡಂಬರವಿದೇನೋ – ಸಂ. ಶಿ. ಭೂಸರನೂಮಠ
3. ರೊಟ್ಟಿ ಏನೆಂಬುದು ತಿಳಿದವ ಜಟ್ಟಿ – ಸಾಲುಗುಂದಿ ಗುರುಪೀರಾ ಖಾದರಿ
4. ಕೊಲ್ಲದಿರಲಿ ಹಗೆ – ಮಮತಾ ಅರಸೀಕೆರೆ

ವಿ.ಸೂ : ಸದರಿ ಪಠ್ಯಕ್ರಮವು ಪುಸ್ತಕ ರೂಪದಲ್ಲಿ ಪ್ರಕಟವಾಗುವುದನ್ನು ಕಾಯದೆ, ಅಧ್ಯಾಪಕರುಗಳು ಈ ಮೇಲಿನ ಪಠ್ಯಕ್ರಮ ಸಾಮಗ್ರಿಯನ್ನು ತಮ್ಮ ಮೂಲದಿಂದ ಸಂಗ್ರಹಿಸಿಕೊಂಡು ಪಾಠಬೋಧನೆ ಮಾಡಲು ತಿಳಿಸಲಾಗಿದೆ.

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಎ/ಬಿ.ಎಸ್.ಡಬ್ಲೂ

(Ability Enhancement Compulsory Course)

Language-1

(ವಾರಕ್ಕೆ 4 ಗಂಟೆಗಳ ಪಾಠ, 3 ಕ್ರೆಡಿಟ್‌ಗಳ ಪತ್ರಿಕೆ, ಒಟ್ಟು ಅಂಕಗಳು–100, ಥಿಯರಿ ಪರೀಕ್ಷೆಗೆ–60 ಅಂಕಗಳು, ಆಂತರಿಕ ಗುಣಾಂಕಗಳಿಗೆ–40 ಅಂಕಗಳು, ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯಕ್ಕೆ 2 ಗಂಟೆಗಳ ಪರೀಕ್ಷೆ, ಆಂತರಿಕ ಗುಣಾಂಕಗಳ ಕುರಿತು ನೀಡಿದ ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಪದ್ಧತಿಯನ್ನು ಮೇಲೆ ತಿಳಿಸಿರುವಂತೆ ನಡೆಸುವುದು.)

ಘಟಕ – 4.1 : ಕಾಯಕ

1. ಶಿವಯೋಗಿ ಶರೀರಂ ವೃಥಾ ಸವೆಯಲಾಗದು : ಸಿದ್ದರಾಮ ಚಾರಿತ್ರ್ಯ – ರಾಘವಾಂಕ (4ನೇ ಗತಿಯ 1–26ರವರೆಗೆ ಆಯ್ದ ಪದ್ಯಗಳು)
2. ಕಾಯಕ ತತ್ವದ ಎರಡು ವಚನಗಳು – 1.ಆಯ್ದಕ್ಕಿ ಲಕ್ಕಮ್ಮ – ಚಿತ್ತಶುದ್ದದಲಿ ಕಾಯಕ ಮಾಡುವವಗೆ
   2ನುಲಿಯಚಂದಯ್ಯ – ಕಂದಿಸಿ ಕುಂದಿಸಿ ಬಂಧಿಸಿ
3. ಡಾ. ರಾಜಕುಮಾರ್ ಎಂಬ ಬೆವರಿನ ಮನುಷ್ಯ – ಬರಗೂರು ರಾಮಚಂದ್ರಪ್ಪ
4. ಸುಗ್ಗಿಯ ಹಾಡುಗಳು – ಬಿ. ಎಸ್. ಗದ್ದಗಿಮಠ

ಘಟಕ – 4.2 : ಬಡತನ

1. ಬಡತನಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ಆಯ್ದ ಮೂರು ರಚನೆಗಳು–1. ಹಾವು ತಿಂದವರ ನುಡಿಸಬಹುದು – ಬಸವಣ್ಣ
   2. ಹರಿಕೊಟ್ಟ ಕಾಲಕ್ಕೆ – ಪುರಂದರದಾಸರು
   3. ಬಡತನ ಕುರಿತ ಆರು ಜನಪದ ತ್ರಿಪದಿಗಳು
2. ಯಾವ ಅಕ್ಷರದಿಂದ ಬರೆದು ತೋರಿಸಲಯ್ಯಾ – ಚೆನ್ನಣ್ಣ ವಾಲೀಕಾರ
3. ಮಹಾನವಮಿ – ಬೆಸಗರಹಳ್ಳಿ ರಾಮಣ್ಣ
4. ಪುಟ್ಟ ಕೈಗಳಲ್ಲಿ ಪುಸ್ತಕವಿರಲಿ, ಪಾತ್ರೆಯಲ್ಲ – ಧರಣಿದೇವಿ ಮಾಲಗತ್ತಿ

ಘಟಕ – 4.3 : ಕಾಲ

1. ಹಕ್ಕಿಯು ಹಾರುತಿದೆ ನೋಡಿದಿರಾ – ದ. ರಾ. ಬೇಂದ್ರೆ
2. ಹೆಪ್ಪುಗಟ್ಟುತ್ತಿಲ್ಲ ನಮ್ಮ ಮನೆಯ ಕೆನೆ ಹಾಲು – ಎಂ. ಎಸ್. ಶೇಖರ್
3. ಮೇಘಾಚ್ಛಾದನ – ವಸುದೇವ ಭೂಪಾಲಂ (ಮೂಲ) ಸಂ:ಶ್ರೀಕಂಠ ಕೂಡಿಗೆ
4. ಕಾಲಕ್ಕೆ ಗೀತೆ – ಪಾಬ್ಲೋ ನೆರೂಡಾ (ಮೂಲ) ಅನು: ಜ. ನಾ. ತೇಜಶ್ರೀ

ಘಟಕ – 4.4 : ಸಂಕೀರ್ಣ

1. ಮೋಕ್ಷ ಹುಡುಕುತ್ತ ಪ್ರೀತಿಯ ಬಂಧನದಲ್ಲಿ – ಪಿ. ಲಂಕೇಶ್
2. ಹೊನ್ನಗನ್ನಡಿಯಲ್ಲಿ ಹೊಳೆದ ಬಿಂಬ (ಮಧುಬಾಲ ಜೀವನ ಕಥನ) – ರಮೇಶ್ ಆರೋಲಿ
3. ನಾವು ಇತಿಹಾಸ ಕಟ್ಟಿದೆವು – ಊರ್ಮಿಳಾ ಪವಾರ್ ಮತ್ತು ಮೀನಾಕ್ಷಿ ಮೂನ್ (ಮರಾಠಿ ಮೂಲ)
   ಕನ್ನಡಕ್ಕೆ : ದು. ಸರಸ್ವತಿ
4. ವಾಗರ್ಥ ಮೀರಿ (ಕೀರ್ತಿನಾಥ ಕುರ್ತಕೋಟಿ ಅವರು ಪಂಡಿತ ರಾಜೀವ ತಾರಾನಾಥ ಅವರೊಡನೆ ನಡೆಸಿದ ಸಂದರ್ಶನ) – ಸಂ. ಗಣೇಶ ಅಮೀನಗಡ

ವಿ.ಸೂ : ಸದರಿ ಪಠ್ಯಕ್ರಮವು ಪುಸ್ತಕ ರೂಪದಲ್ಲಿ ಪ್ರಕಟವಾಗುವುದನ್ನು ಕಾಯದೆ, ಅಧ್ಯಾಪಕರುಗಳು ಈ ಮೇಲಿನ ಪಠ್ಯಕ್ರಮ ಸಾಮಗ್ರಿಯನ್ನು ತಮ್ಮ ಮೂಲದಿಂದ ಸಂಗ್ರಹಿಸಿಕೊಂಡು ಪಾಠಬೋಧನೆ ಮಾಡಲು ತಿಳಿಸಲಾಗಿದೆ.

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

RANI CHANNAMMA UNIVERSITY

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ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಮೂರು ಮತ್ತು ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಕಾಂ

(Ability Enhancement Compulsory Course)

Language-1

ಕನ್ನಡ ಭಾಷಾ ವಿಷಯದ ಪಠ್ಯಕ್ರಮ ಹಾಗೂ ಆಂತರಿಕ ಮತ್ತು ಥಿಯರಿ ಪರೀಕ್ಷಾ ವಿಧಾನವು ಎರಡನೆಯ ವರ್ಷಕ್ಕಾಗಿ ಅಂದರೆ 2022–23ನೇ ಸಾಲಿನ ಮೂರು ಮತ್ತು ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ಭಾಷಾ ವಿಷಯದ ಪಠ್ಯಕ್ರಮ ಹಾಗೂ ಪರೀಕ್ಷಾ ವಿಧಾನವು ಈ ಮುಂದಿನಂತಿರುತ್ತದೆ.

1. ಆಂತರಿಕ ಅಂಕಗಳ ಮಾದರಿ ಮತ್ತು ನೀಡುವ ವಿಧಾನ : ಸಮಗ್ರ ಮತ್ತು ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಮಾದರಿಯನ್ನು ಅನುಸರಿಸಬೇಕಾಗಿರುತ್ತದೆ. ರಚನಾತ್ಮಕ ಮೌಲ್ಯಮಾಪನ (Formative Assessment) ಅಂತಿಮ ಹಂತದಲ್ಲಿ ಸಂಚಿತ ಮೌಲ್ಯಮಾಪನ (Summative Assessment) ಕ್ರಮದಂತೆ ಆಂತರಿಕ ಅಂಕಗಳನ್ನು ನಿರಂತರ ಮೌಲ್ಯಮಾಪನದ ವರದಿ ಮತ್ತು ಸಂಚಿತ ಮೌಲ್ಯಮಾಪನದ ವರದಿಯ ಆಧಾರದ ಮೇಲೆ ನೀಡುವುದು.

v. ಪತ್ರಿಕೆ ಒಟ್ಟು 100 ಅಂಕಗಳು

vi. ಘಟಕ 1ರ (Component 1- C1) ನಿರಂತರ ಮೌಲ್ಯಮಾಪನಕ್ಕೆ 20 ಆಂತರಿಕ ಅಂಕಗಳು (ಸೆಮಿಸ್ಟರ್‌ನ ಮೊದಲೆರಡು ತಿಂಗಳು)

vii. ಘಟಕ 2ರ (Component 2- C2) ನಿರಂತರ ಮೌಲ್ಯಮಾಪನಕ್ಕೆ 20 ಆಂತರಿಕ ಅಂಕಗಳು (ಸೆಮಿಸ್ಟರ್‌ನ ನಂತರದೆರಡು ತಿಂಗಳು)

viii. ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯದ ಪರೀಕ್ಷೆಗೆ 60 ಅಂಕಗಳು.

2. Evaluation process of IA marks shall be as follows:

g) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course/s and within 45 working days of semester program.

h) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of remaining 50 percent of syllabus of the courses of the semester.

i) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the University for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

j) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator / Principal. The Program Coordinator / Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher but before commencement of the concerned semester end examinations.

k) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be stamped by the concerned department using their department seal at the time of conducting tests / assignment / worketc.

l) The outline for continuous assessment activities for Component-1 (C1) and Component -2 (C2) of a course shall be as under

Activities	C1	C2	Total Marks
Session Test	10% marks	10% marks	20%
Seminars/Presentations/Activity	10% marks		10%
Case study /Assignment / Field work / Project work etc.		10% marks	10%
Total	20% marks	20% marks	40%

Conduct of Seminar, Case study / Assignment, etc. can be either in C1 or in C2 component at the convenience of the concerned teacher.

Course Structure of AECC & OEC for B.Com/B.Sc/B.B.A/B.C.A Kannada subject

Semester III								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L + T + P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
1	**B.Com/B.Sc/B.B.A /B.C.A Language-1**	**Language-1**	**AECC**	**04**	**60**	**40**	**100**	**3**
2	B.Com/B.Sc/B.B.A /B.C.A **OEC**	ಸ್ಪರ್ಧಾತ್ಮಕ ಕನ್ನಡ	**OEC**	**03**	**60**	**40**	**100**	**3**

Semester IV								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours perWeek (L + T + P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
1	**B.Com/B.Sc/B.B.A/B.C.A Language-1**	**Language-1**	**AECC**	**04**	**60**	**40**	**100**	**3**
2	B.Com/B.Sc/B.B.A /B.C.A **OEC**	ಭಾಷಾಂತರ ಮತ್ತು ರಂಗಭೂಮಿ	**OEC**	**03**	**60**	**40**	**100**	**3**

Model Question Paper

Max Marks: 60 Max **Time: 2 hrs**

1. ಪ್ರತಿ ಘಟಕದಿಂದ ಎರಡು ಪ್ರಬಂಧ ರೂಪದ ಪ್ರಶ್ನೆ ಕೇಳಿ ಒಂದಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 10X4=40
2. ಪ್ರತಿ ಘಟಕದಿಂದ ಒಂದರಂತೆ ನಾಲ್ಕು ಟಿಪ್ಪಣಿ ರೂಪದ ಪ್ರಶ್ನೆ ಕೇಳಿ ಎರಡಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 5X2=10
3. ಇಡೀ ಪಠ್ಯಕ್ಕೆ ಅನ್ವಯಿಸಿ ಒಂದು ಅಂಕದ ಹತ್ತು ವಸ್ತು ನಿಷ್ಠಪ್ರಶ್ನೆ ಕೇಳುವುದು 1X10=10

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಮೂರನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಕಾಂ

(Ability Enhancement Compulsory Course)

Language-1

(ವಾರಕ್ಕೆ 4 ಗಂಟೆಗಳ ಪಾಠ, 3 ಕ್ರೆಡಿಟ್‌ಗಳ ಪತ್ರಿಕೆ, ಒಟ್ಟು ಅಂಕಗಳು–100, ಥಿಯರಿ ಪರೀಕ್ಷೆಗೆ–60 ಅಂಕಗಳು, ಆಂತರಿಕ ಗುಣಾಂಕಗಳಿಗೆ–40 ಅಂಕಗಳು, ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯಕ್ಕೆ 2 ಗಂಟೆಗಳ ಪರೀಕ್ಷೆ, ಆಂತರಿಕ ಗುಣಾಂಕಗಳ ಕುರಿತು ನೀಡಿದ ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಪದ್ಧತಿಯನ್ನು ಮೇಲೆ ತಿಳಿಸಿರುವಂತೆ ನಡೆಸುವುದು.)

ಘಟಕ – 1 : ಮನರಂಜನಾ ಮಾಧ್ಯಮ

1. ಮುದ್ದಣ ಮನೋರಮೆಯ ಸಲ್ಲಾಪ – ಮುದ್ದಣ
2. ನನ್ನ ಬಣ್ಣದ ಬದುಕು (ಏಣಗಿ ಬಾಳಪ್ಪ) – ದು. ನಿಂ. ಬೆಳಗಲಿ
3. ಸಿನಿಮಾ ಒಂದು ಜನಪದ ಕಲೆ – ಬರುಗೂರು ರಾಮಚಂದ್ರಪ್ಪ
4. ಕರ್ನಾಟಕದಲ್ಲಿ ಆಕಾಶವಾಣಿ ಮತ್ತು ದೂರದರ್ಶನ – ಎ. ಎಸ್. ಚಂದ್ರಮೌಳಿ

ಘಟಕ – 2 : ಮಾರುಕಟ್ಟೆ

1. ದೊರಕೊಂಡುದು ನಿನಗೆ ಪಾತಕಂ ಬಾಲವಧಂ – ರನ್ನ
2. ಕುರುಡು ಕಾಂಚಾಣ – ದ. ರಾ. ಬೇಂದ್ರೆ
3. ರೈತರ ಆತ್ಮಹತ್ಯೆ ಮತ್ತು ಮಧ್ಯಮ ವರ್ಗ – ರಹಮತ್ ತರಿಕೆರೆ
4. ದೇಹ ಸರಕಾಗುವುದು ಬೇಡ – ಸಿ. ಜಿ. ಮಂಜುಳಾ

ಘಟಕ – 3 : ಲಿಂಗಸಮಾನತೆ

1. ಶರಣರು ಕಟ್ಟ ಬಯಸಿದ ಸ್ತ್ರೀ ಸಮಾಜ – ಎಂ. ಎಂ.ಕಲಬುರ್ಗಿ
2. ನಾವು ಹುಡುಗಿಯರೇ ಹೀಗೆ – ಪ್ರತಿಭಾ ನಂದಕುಮಾರ
3. ಡಾ. ಬಿ. ಆರ್. ಅಂಬೇಡ್ಕರ್ ಮತ್ತು ಮಹಿಳಾ ವಿಮೋಚನೆ – ಧರಣಿ ದೇವಿ ಮಾಲಗತ್ತಿ
4. ದಾಸ್ಯದ ಕೆಲವು ಮಗ್ಗಲುಗಳು (ಹೆಂಗಸರಿಗೆ ಮೂಲಭೂತ ಹಕ್ಕುಗಳ ನಿರಾಕರಣೆ) – ಶ್ರೀಮತಿ. ಮಧುಕೇಶ್ವರ ಅನು. ಎಲ್. ಜಿ. ಮೀರಾ

ಘಟಕ – 4 : ಸಂಕೀರ್ಣ

1. ಮೂರು ಮೆಟ್ಟಿಲ ಕಥೆ (ಬಲ್ಗೇರಿಯನ್) – ಅನು. ಬಿ. ವಿ. ವೀರಭದ್ರಪ್ಪ
2. ಶಿವ ಶಿವ ಅಂತಾ ಹಲಬುದು ಯಾಕೊ – ಮೀರಾಸಾಬ ಮುಲ್ಲಾ
3. ಕವಿತೆ ಮತ್ತು ನಾನು – ಶಿವಕುಮಾರ ದಂಡಿನ

ವಿ.ಸೂ : ಸದರಿ ಪಠ್ಯಕ್ರಮವು ಪುಸ್ತಕ ರೂಪದಲ್ಲಿ ಪ್ರಕಟವಾಗುವುದನ್ನು ಕಾಯದೆ, ಅಧ್ಯಾಪಕರುಗಳು ಈ ಮೇಲಿನ ಪಠ್ಯಕ್ರಮ ಸಾಮಗ್ರಿಯನ್ನು ತಮ್ಮ ಮೂಲದಿಂದ ಸಂಗ್ರಹಿಸಿಕೊಂಡು ಪಾಠಬೋಧನೆ ಮಾಡಲು ತಿಳಿಸಲಾಗಿದೆ.

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಕಾಂ

(Ability Enhancement Compulsory Course)

Language-1

(ವಾರಕ್ಕೆ 4 ಗಂಟೆಗಳ ಪಾಠ, 3 ಕ್ರೆಡಿಟ್‌ಗಳ ಪತ್ರಿಕೆ, ಒಟ್ಟು ಅಂಕಗಳು–100, ಥಿಯರಿ ಪರೀಕ್ಷೆಗೆ–60 ಅಂಕಗಳು, ಆಂತರಿಕ ಗುಣಾಂಕಗಳಿಗೆ–40 ಅಂಕಗಳು, ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯಕ್ಕೆ 2 ಗಂಟೆಗಳ ಪರೀಕ್ಷೆ, ಆಂತರಿಕ ಗುಣಾಂಕಗಳ ಕುರಿತು ನೀಡಿದ ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಪದ್ಧತಿಯನ್ನು ಮೇಲೆ ತಿಳಿಸಿರುವಂತೆ ನಡೆಸುವುದು.)

ಘಟಕ – 1 : ಕಡಲು

1. ಅಚ್ಚೋದ ಸರೋವರ (ಕರ್ನಾಟಕ ಕಾದಂಬರಿ) – ನಾಗವರ್ಮ
2. ಸಮುದ್ರ ಗೀತೆಗಳು (ಎರಡು ಕವಿತೆಗಳು) – ವಿ. ಕೃ. ಗೋಕಾಕ
3. ಅಂಡಮಾನ್‌ಗೆ ಪಯಣ – ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ
4. ಕಡಲ ನೀರು – ಚನ್ನಣ್ಣ ವಾಲಿಕಾರ

ಘಟಕ – 2 : ಸಹಬಾಳ್ವೆ

2. ಎಲ್ಲರಲ್ಲಿ ಒಂದೊಂದು ಬೇಡಿಕೊಂಬೆ – ಮುಪ್ಪಿನ ಷಡಕ್ಷರಿ
3. 1368ರ ಒಂದನೆಯ ಬುಕ್ಕರಾಯನ ಶಾಸನ – ಒಂದನೆಯ ಬುಕ್ಕರಾಯ
3. ಆಟ ಮತ್ತು ಸಹಕಾರ ತತ್ವ – ಅಗ್ರಹಾರ ಕೃಷ್ಣಮೂರ್ತಿ
4. ಸಹಬಾಳ್ವೆ, ಸಹಿಷ್ಣುತೆ : ಒಂದು ವಿವೇಚನೆ – ಮುರಾರಿ ಬಲ್ಲಾಳ

ಘಟಕ – 3 : ಸಾವು

1. ಜೋಳವಾಳಿ, ವೇಳವಾಳಿ, ರಾಜವಾಳಿ – ಜೆ. ಎಂ. ನಾಗಯ್ಯ
2. ಮುತ್ತೈದೆ ಸಾವು – ಜಿ. ಪಿ. ರಾಜರತ್ನಂ
3. ಹತ್ಯೆ – ಕುಂ. ವೀರಭದ್ರಪ್ಪ
4. ನನ್ನ ದೇಹದ ಬೂದಿ – ದಿನಕರ ದೇಸಾಯಿ

ಘಟಕ – 4 : ಸಂಕೀರ್ಣ

1. ನಮ್ಮ ಅಳತೆಯನ್ನು ಮೀರಲಾರದ ದೇವರು – ಶಿವರಾಮ ಕಾರಂತ
2. ದೇವರೆ ನಿನಗೆ ಶುಭವಾಗಲಿ – ವಿಜಯಾ ದಬ್ಬೆ
3. ಕಳ್ಳು ಬಳ್ಳಿ – ಬಿ. ಟಿ. ಜಾಹ್ನವಿ

ವಿ.ಸೂ : ಸದರಿ ಪಠ್ಯಕ್ರಮವು ಪುಸ್ತಕ ರೂಪದಲ್ಲಿ ಪ್ರಕಟವಾಗುವುದನ್ನು ಕಾಯದೆ, ಅಧ್ಯಾಪಕರುಗಳು ಈ ಮೇಲಿನ ಪಠ್ಯಕ್ರಮ ಸಾಮಗ್ರಿಯನ್ನು ತಮ್ಮ ಮೂಲದಿಂದ ಸಂಗ್ರಹಿಸಿಕೊಂಡು ಪಾಠಬೋಧನೆ ಮಾಡಲು ತಿಳಿಸಲಾಗಿದೆ.

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

RANI CHANNAMMA UNIVERSITY

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ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಮೂರು ಮತ್ತು ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಬಿ.ಎ/ಬಿ.ಸಿ.ಎ/ಬಿ.ಎಸ್ಸಿ. ಸಿ.ಎಸ್

(Ability Enhancement Compulsory Course)

Language-1

ಕನ್ನಡ ಭಾಷಾ ವಿಷಯದ ಪಠ್ಯಕ್ರಮ ಹಾಗೂ ಆಂತರಿಕ ಮತ್ತು ಥಿಯರಿ ಪರೀಕ್ಷಾ ವಿಧಾನವು ಎರಡನೆಯ ವರ್ಷಕ್ಕಾಗಿ ಅಂದರೆ 2022–23ನೇ ಸಾಲಿನ ಮೂರು ಮತ್ತು ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ಭಾಷಾ ವಿಷಯದ ಪಠ್ಯಕ್ರಮ ಹಾಗೂ ಪರೀಕ್ಷಾ ವಿಧಾನವು ಈ ಮುಂದಿನಂತಿರುತ್ತದೆ.

1. ಆಂತರಿಕ ಅಂಕಗಳ ಮಾದರಿ ಮತ್ತು ನೀಡುವ ವಿಧಾನ : ಸಮಗ್ರ ಮತ್ತು ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಮಾದರಿಯನ್ನು ಅನುಸರಿಸಬೇಕಾಗಿರುತ್ತದೆ. ರಚನಾತ್ಮಕ ಮೌಲ್ಯಮಾಪನ (**Formative Assessment**) ಅಂತಿಮ ಹಂತದಲ್ಲಿ ಸಂಚಿತ ಮೌಲ್ಯಮಾಪನ (**Summative Assessment**) ಕ್ರಮದಂತೆ ಆಂತರಿಕ ಅಂಕಗಳನ್ನು ನಿರಂತರ ಮೌಲ್ಯಮಾಪನದ ವರದಿ ಮತ್ತು ಸಂಚಿತ ಮೌಲ್ಯಮಾಪನದ ವರದಿಯ ಆಧಾರದ ಮೇಲೆ ನೀಡುವುದು.

ix. ಪತ್ರಿಕೆ ಒಟ್ಟು **100** ಅಂಕಗಳು

x. ಘಟಕ 1ರ (**Component 1- C1**) ನಿರಂತರ ಮೌಲ್ಯಮಾಪನಕ್ಕೆ **20** ಆಂತರಿಕ ಅಂಕಗಳು (ಸೆಮಿಸ್ಟರ್‌ನ ಮೊದಲೆರಡು ತಿಂಗಳು)

xi. ಘಟಕ 2ರ (**Component 2- C2**) ನಿರಂತರ ಮೌಲ್ಯಮಾಪನಕ್ಕೆ **20** ಆಂತರಿಕ ಅಂಕಗಳು (ಸೆಮಿಸ್ಟರ್‌ನ ನಂತರದೆರಡು ತಿಂಗಳು)

xii. ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯದ ಪರೀಕ್ಷೆಗೆ **60** ಅಂಕಗಳು.

2. Evaluation process of IA marks shall be as follows:

m) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course/s and within 45 working days of semester program.

n) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of remaining 50 percent of syllabus of the courses of the semester.

o) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the University for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

p) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator / Principal. The Program Coordinator / Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher but before commencement of the concerned semester end examinations.

q) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be stamped by the concerned department using their department seal at the time of conducting tests / assignment / worketc.

r) The outline for continuous assessment activities for Component-1 (C1) and Component -2 (C2) of a course shall be as under

Activities	C1	C2	Total Marks
Session Test	10% marks	10% marks	20%
Seminars/Presentations/Activity	10% marks		10%
Case study /Assignment / Field work / Project work etc.		10% marks	10%
Total	20% marks	20% marks	40%

Conduct of Seminar, Case study / Assignment, etc. can be either in C1 or in C2 component at the convenience of the concerned teacher.

Course Structure of AECC & OEC for B.Com/B.Sc/B.B.A/B.C.A Kannada subject

Semester III								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L + T + P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
1	**B.Com/B.Sc/B.B.A /B.C.A Language-1**	**Language-1**	**AECC**	**04**	**60**	**40**	**100**	**3**
2	B.Com/B.Sc/B.B.A /B.C.A **OEC**	ಸ್ಪರ್ಧಾತ್ಮಕ ಕನ್ನಡ	**OEC**	**03**	**60**	**40**	**100**	**3**

Semester IV								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours perWeek (L + T + P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
1	**B.Com/B.Sc/B.B. A/B.C.A Language-1**	**Language-1**	**AECC**	**04**	**60**	**40**	**100**	**3**
2	B.Com/B.Sc/B.B.A /B.C.A **OEC**	ಭಾಷಾಂತರ ಮತ್ತು ರಂಗಭೂಮಿ	**OEC**	**03**	**60**	**40**	**100**	**3**

Model Question Paper

Max Marks: 60 Max **Time: 2 hrs**

1. ಪ್ರತಿ ಘಟಕದಿಂದ ಎರಡು ಪ್ರಬಂಧ ರೂಪದ ಪ್ರಶ್ನೆ ಕೇಳಿ ಒಂದಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 10X4=40
2. ಪ್ರತಿ ಘಟಕದಿಂದ ಒಂದರಂತೆ ನಾಲ್ಕು ಟಿಪ್ಪಣಿ ರೂಪದ ಪ್ರಶ್ನೆ ಕೇಳಿ ಎರಡಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 5X2=10
3. ಇಡೀ ಪಠ್ಯಕ್ಕೆ ಅನ್ವಯಿಸಿ ಒಂದು ಅಂಕದ ಹತ್ತು ವಸ್ತು ನಿಷ್ಠಪ್ರಶ್ನೆ ಕೇಳುವುದು 1X10=10

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಮೂರನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಬಿ.ಎ/ಬಿ.ಸಿ.ಎ/ಬಿ.ಎಸ್ಸಿ. ಸಿ.ಎಸ್

(Ability Enhancement Compulsory Course)

Language-1

(ವಾರಕ್ಕೆ 4 ಗಂಟೆಗಳ ಪಾಠ, 3 ಕ್ರೆಡಿಟ್‌ಗಳ ಪತ್ರಿಕೆ, ಒಟ್ಟು ಅಂಕಗಳು–100, ಥಿಯರಿ ಪರೀಕ್ಷೆಗೆ–60 ಅಂಕಗಳು, ಆಂತರಿಕ ಗುಣಾಂಕಗಳಿಗೆ–40 ಅಂಕಗಳು, ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯಕ್ಕೆ 2 ಗಂಟೆಗಳ ಪರೀಕ್ಷೆ, ಆಂತರಿಕ ಗುಣಾಂಕಗಳ ಕುರಿತು ನೀಡಿದ ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಪದ್ಧತಿಯನ್ನು ಮೇಲೆ ತಿಳಿಸಿರುವಂತೆ ನಡೆಸುವುದು.)

ಘಟಕ – 1 : ದೈನಂದಿನ ಲಯ

1. ಲೋಕದ ಚೇಷ್ಟೆಗೆ ರವಿ ಬೀಜವಾದಂತೆ – ಅಕ್ಕಮಹಾದೇವಿ
2. ಮುಂಬೈ ಜಾತಕ – ಜಿ. ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
3. ಕಾಲ ಮತ್ತು ಗಡಿಯಾರ – ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ (ವಿಜ್ಞಾನ ಬರಹ)
4. ಎಳೇಳ ಹೊತ್ತ... – ಸೋಮಶೇಖರ ಇಮ್ರಾಪೂರ
5. ನಾವು ಎಳೆಯರು ನಾವು ಗೆಳೆಯರು – ಶಂ. ಗು. ಬಿರಾದರ

ಘಟಕ – 2 : ಸೌಹಾರ್ದ

1. ಧರ್ಮ – ಬೆಸಗರ ಹಳ್ಳಿ ರಾಮಣ್ಣ
2. ದೇವರುಳ ರಾಜ್ಯದಲ್ಲಿ – ಬೋಳುವಾರು ಮಹಮ್ಮದ ಕುಂಞಿ
3. ಮಾನವರಾಗೋಣ – ಜ. ಹೊ. ನಾರಾಯಣಸ್ವಾಮಿ
4. ಪ್ರಭುವೇ ನೀನೊಮ್ಮೆ ಹೆಣ್ಣಾಗು – ಕೆ. ಶರೀಫಾ

ಘಟಕ – 3 : ಸ್ವಾತಂತ್ರ್ಯ

1. ಸ್ವಾತಂತ್ರ್ಯದ ಹಸಿವು – ಗೋಪಾಲಕೃಷ್ಣ ಅಡಿಗ
2. ಯಾರಿಗೆ ಬಂತು ಎಲ್ಲಿಗೆ ಬಂತು – ಸಿದ್ಧಲಿಂಗಯ್ಯ
3. ಧರ್ಮ ಬಲೆ ಬೀಸಿದಾಗ – ಸಾ. ರಾ. ಅಬೂಬಕರ್
4. ಹೆಣ್ಣಿನ ಸ್ಥಾನಮಾನ – ಶರಶ್ಚಂದ್ರ ಚಟ್ಟೋಪಾಧ್ಯಾಯ ಅನು.ಸಿದ್ದಲಿಂಗ ಪಟ್ಟಣಶೆಟ್ಟಿ

ಘಟಕ – 4 : ಸಂಕೀರ್ಣ

1. ಬೆರಳಿಷ್ಟು ಮಿಸುಕದು – ರತ್ನಾಕರವರ್ಣಿ
2. ಬುದ್ಧ ಸಂದೇಶ – ಸ್ವಾಮಿ ಪುರುಷೋತ್ತಮಾನಂದರು
3. ಬಸವೇಗೌಡನ ಕೋಣ – ಸೋಮಣ್ಣ ಹೊಂಗಳ್ಳಿ
4. ದೀಪ ಆರಿಸುತ್ತೇನೆ – ಭುವನಾ ಹಿರೇಮಠ

ವಿ.ಸೂ : ಸದರಿ ಪಠ್ಯಕ್ರಮವು ಪುಸ್ತಕ ರೂಪದಲ್ಲಿ ಪ್ರಕಟವಾಗುವುದನ್ನು ಕಾಯದೆ, ಅಧ್ಯಾಪಕರುಗಳು ಈ ಮೇಲಿನ ಪಠ್ಯಕ್ರಮ ಸಾಮಗ್ರಿಯನ್ನು ತಮ್ಮ ಮೂಲದಿಂದ ಸಂಗ್ರಹಿಸಿಕೊಂಡು ಪಾಠಬೋಧನೆ ಮಾಡಲು ತಿಳಿಸಲಾಗಿದೆ.

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಬಿ.ಎ/ಬಿ.ಸಿ.ಎ/ಬಿ.ಎಸ್ಸಿ. ಸಿ.ಎಸ್

(Ability Enhancement Compulsory Course)

Language-1

(ವಾರಕ್ಕೆ 4 ಗಂಟೆಗಳ ಪಾಠ, 3 ಕ್ರೆಡಿಟ್‌ಗಳ ಪತ್ರಿಕೆ, ಒಟ್ಟು ಅಂಕಗಳು–100, ಥಿಯರಿ ಪರೀಕ್ಷೆಗೆ–60 ಅಂಕಗಳು, ಆಂತರಿಕ ಗುಣಾಂಕಗಳಿಗೆ–40 ಅಂಕಗಳು, ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯಕ್ಕೆ 2 ಗಂಟೆಗಳ ಪರೀಕ್ಷೆ, ಆಂತರಿಕ ಗುಣಾಂಕಗಳ ಕುರಿತು ನೀಡಿದ ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಪದ್ಧತಿಯನ್ನು ಮೇಲೆ ತಿಳಿಸಿರುವಂತೆ ನಡೆಸುವುದು.)

ಘಟಕ – 1 : ಯುದ್ಧ

1. ಇವರ ಯುದ್ಧಮೆಂಬುದತಿ ಕ್ರೂರಗ್ರಹ ಯುದ್ಧದಂತೆ – ಪಂಪ
2. ಶಿಕ್ಷೆ – ಘನಶಾಮ್ ಅಗರವಾಲ
3. ಮಹಾಯುದ್ಧ – ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ
4. ಮಧ್ಯಕಾಲೀನ ಕನ್ನಡ ಸಾಹಿತ್ಯದಲ್ಲಿ ಬಹುತ್ವದ ನೆಲೆಗಳು – ನಾಗಭೂಷಣ ಬಗ್ಗನಡು

ಘಟಕ – 2 : ಶಾಂತಿ

1. ಗೋಲ್ಗೋಥಾ – ಗೋವಿಂದ ಪೈ
2. ಐಕ್ಯಗಾನ – ಕಯ್ಯಾರ ಕಿಞ್ಞಣ್ಣ ರೈ
3. ಕನ್ನಡ ಸಾಹಿತ್ಯದಲ್ಲಿ ಯುದ್ಧ ಮತ್ತು ಶಾಂತಿ – ರಂಜಾನ್ ದರ್ಗಾ
4. ಕೇದಾರ ಅಲ್ಲಿಲ್ಲ – ಧನ್ನೂರಿನ ತಾಯಮ್ಮ

ಘಟಕ – 3 : ಕರುಣೆ

1. ಚಂದ್ರಮತಿಯ ಪ್ರಲಾಪ – ರಾಘವಾಂಕ
2. ತಲ್ಲಣಿಸದಿರು ತಾಳು – ಕನಕದಾಸರು
3. ರತ್ನಾಗಿರಿ ಎಂಬ ಮಾಯೆ – ಚನ್ನಪ್ಪ ಕಟ್ಟಿ
4. ಕಸುಬು – ಶಿವರಾಜ ಬ್ಯಾಡರಹಳ್ಳಿ

ಘಟಕ – 4 : ಸಂಕೀರ್ಣ

1. ಸುಳ್ಳಿನ ಸರಮಾಲೆ – ಹಿಂದಿ ಜನಪದ ಕಥೆ
2. ನೀರು ದೇವರು – ಮಾಲತಿ ಪಟ್ಟಣಶೆಟ್ಟಿ
3. ಮಾನವೀಯತೆ ಅಂತಾರಲ್ಲ, ಅದರ ಬಗ್ಗೆ – ದೇವನೂರು ಮಹಾದೇವ
4. ಸಮೂಹ ಮಾಧ್ಯಮ ಮತ್ತು ಮಹಿಳೆ – ಬಾ ಹ ರಮಾಕುಮಾರಿ

ವಿ.ಸೂ : ಸದರಿ ಪಠ್ಯಕ್ರಮವು ಪುಸ್ತಕ ರೂಪದಲ್ಲಿ ಪ್ರಕಟವಾಗುವುದನ್ನು ಕಾಯದೆ, ಅಧ್ಯಾಪಕರುಗಳು ಈ ಮೇಲಿನ ಪಠ್ಯಕ್ರಮ ಸಾಮಗ್ರಿಯನ್ನು ತಮ್ಮ ಮೂಲದಿಂದ ಸಂಗ್ರಹಿಸಿಕೊಂಡು ಪಾಠಬೋಧನೆ ಮಾಡಲು ತಿಳಿಸಲಾಗಿದೆ.

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

RANI CHANNAMMA UNIVERSITY

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ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಮೂರು ಮತ್ತು ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಎಸ್.ಸಿ (Ability Enhancement Compulsory Course)

Language-1

ಕನ್ನಡ ಭಾಷಾ ವಿಷಯದ ಪಠ್ಯಕ್ರಮ ಹಾಗೂ ಆಂತರಿಕ ಮತ್ತು ಥಿಯರಿ ಪರೀಕ್ಷಾ ವಿಧಾನವು ಎರಡನೆಯ ವರ್ಷಕ್ಕಾಗಿ ಅಂದರೆ 2022–23ನೇ ಸಾಲಿನ ಮೂರು ಮತ್ತು ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ಭಾಷಾ ವಿಷಯದ ಪಠ್ಯಕ್ರಮ ಹಾಗೂ ಪರೀಕ್ಷಾ ವಿಧಾನವು ಈ ಮುಂದಿನಂತಿರುತ್ತದೆ.

1. ಆಂತರಿಕ ಅಂಕಗಳ ಮಾದರಿ ಮತ್ತು ನೀಡುವ ವಿಧಾನ : ಸಮಗ್ರ ಮತ್ತು ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಮಾದರಿಯನ್ನು ಅನುಸರಿಸಬೇಕಾಗಿರುತ್ತದೆ. ರಚನಾತ್ಮಕ ಮೌಲ್ಯಮಾಪನ (**Formative Assessment**) ಅಂತಿಮ ಹಂತದಲ್ಲಿ ಸಂಚಿತ ಮೌಲ್ಯಮಾಪನ (**Summative Assessment**) ಕ್ರಮದಂತೆ ಆಂತರಿಕ ಅಂಕಗಳನ್ನು ನಿರಂತರ ಮೌಲ್ಯಮಾಪನದ ವರದಿ ಮತ್ತು ಸಂಚಿತ ಮೌಲ್ಯಮಾಪನದ ವರದಿಯ ಆಧಾರದ ಮೇಲೆ ನೀಡುವುದು.

xiii. ಪತ್ರಿಕೆ ಒಟ್ಟು 100 ಅಂಕಗಳು

xiv. ಘಟಕ 1ರ (**Component 1- C1**) ನಿರಂತರ ಮೌಲ್ಯಮಾಪನಕ್ಕೆ 20 ಆಂತರಿಕ ಅಂಕಗಳು (ಸೆಮಿಸ್ಟರ್‌ನ ಮೊದಲೆರಡು ತಿಂಗಳು)

xv. ಘಟಕ 2ರ (**Component 2- C2**) ನಿರಂತರ ಮೌಲ್ಯಮಾಪನಕ್ಕೆ 20 ಆಂತರಿಕ ಅಂಕಗಳು (ಸೆಮಿಸ್ಟರ್‌ನ ನಂತರದೆರಡು ತಿಂಗಳು)

xvi. ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯದ ಪರೀಕ್ಷೆಗೆ 60 ಅಂಕಗಳು.

2. **Evaluation process of IA marks shall be as follows:**

s) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course/s and within 45 working days of semester program.

t) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of remaining 50 percent of syllabus of the courses of the semester.

u) During the 17th – 19th week of the semester, a semester end examination shall be conducted by the University for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

v) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator / Principal. The Program Coordinator / Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher but before commencement of the concerned semester end examinations.

w) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be stamped by the concerned department using their department seal at the time of conducting tests / assignment / workетс.

x) The outline for continuous assessment activities for Component-1 (C1) and Component -2 (C2) of a course shall be as under

Activities	C1	C2	Total Marks
Session Test	10% marks	10% marks	20%
Seminars/Presentations/Activity	10% marks		10%
Case study /Assignment / Field work / Project work etc.		10% marks	10%
Total	20% marks	20% marks	40%

Conduct of Seminar, Case study / Assignment, etc. can be either in C1 or in C2 component at the convenience of the concerned teacher.

Course Structure of AECC & OEC for B.Com/B.Sc/B.B.A/B.C.A Kannada subject

Semester III								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L + T + P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
1	**B.Com/B.Sc/B.B.A /B.C.A Language-1**	**Language-1**	**AECC**	**04**	**60**	**40**	**100**	**3**
2	B.Com/B.Sc/B.B.A /B.C.A **OEC**	ಸ್ಪರ್ಧಾತ್ಮಕ ಕನ್ನಡ	**OEC**	**03**	**60**	**40**	**100**	**3**

Semester IV								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours perWeek (L + T + P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
1	**B.Com/B.Sc/B.B.A/B.C.A Language-1**	**Language-1**	**AECC**	**04**	**60**	**40**	**100**	**3**
2	B.Com/B.Sc/B.B.A /B.C.A **OEC**	ಭಾಷಾಂತರ ಮತ್ತು ರಂಗಭೂಮಿ	**OEC**	**03**	**60**	**40**	**100**	**3**

Model Question Paper

Max Marks: 60 Max **Time: 2 hrs**

1. ಪ್ರತಿ ಘಟಕದಿಂದ ಎರಡು ಪ್ರಬಂಧ ರೂಪದ ಪ್ರಶ್ನೆ ಕೇಳಿ ಒಂದಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 10X4=40
2. ಪ್ರತಿ ಘಟಕದಿಂದ ಒಂದರಂತೆ ನಾಲ್ಕು ಟಿಪ್ಪಣಿ ರೂಪದ ಪ್ರಶ್ನೆ ಕೇಳಿ ಎರಡಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 5X2=10
3. ಇಡೀ ಪಠ್ಯಕ್ಕೆ ಅನ್ವಯಿಸಿ ಒಂದು ಅಂಕದ ಹತ್ತು ವಸ್ತು ನಿಷ್ಠಪ್ರಶ್ನೆ ಕೇಳುವುದು 1X10=10

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಮೂರನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಎಸ್.ಸಿ

(Ability Enhancement Compulsory Course)

Language-1

(ವಾರಕ್ಕೆ 4 ಗಂಟೆಗಳ ಪಾಠ, 3 ಕ್ರೆಡಿಟ್‌ಗಳ ಪತ್ರಿಕೆ, ಒಟ್ಟು ಅಂಕಗಳು–100, ಥಿಯರಿ ಪರೀಕ್ಷೆಗೆ–60 ಅಂಕಗಳು, ಆಂತರಿಕ ಗುಣಾಂಕಗಳಿಗೆ–40 ಅಂಕಗಳು, ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯಕ್ಕೆ 2 ಗಂಟೆಗಳ ಪರೀಕ್ಷೆ, ಆಂತರಿಕ ಗುಣಾಂಕಗಳ ಕುರಿತು ನೀಡಿದ ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಪದ್ಧತಿಯನ್ನು ಮೇಲೆ ತಿಳಿಸಿರುವಂತೆ ನಡೆಸುವುದು.)

ಘಟಕ – 1 : ಮಾನವೀಯತೆ

5. ಬಸವಣ್ಣನವರ ವಚನಗಳು
   (ಏನ ಬಂದಿರಿ ಹದುಳವಿದ್ದಿರೆ, ದಯವಿಲ್ಲದ ಧರ್ಮ ಅದಾವುದಯ್ಯ, ಕಲ್ಲನಾಗರ ಕಂಡರೆ)
6. ಪುರಂದರದಾಸರ ಕೀರ್ತನೆಗಳು
   (ಮಾನವ ಜನ್ಮ ದೊಡ್ಡದು ಹಾಗೂ ಬೆಲ್ಲದ ಕಟ್ಟೆಯ ಕಟ್ಟಿ)
7. ಮೂರು ತತ್ವಪದಗಳು
   (ಬಿದ್ದಿಯಬೇ ಮುದುಕಿ – ಶಿಶುನಾಳ ಶರೀಫ, ಮುಡಚೆಟ್ಟಲ್ಯಾದ ಹೇಳಣ್ಣ – ಕಡಕೋಳ ಮಡಿವಾಳಪ್ಪ, ಯಾಕೆ ಬಡಿದಾಡತಿ ತಮ್ಮ – ಜನಪದ ತತ್ವಪದ)

ಘಟಕ – 2 : ಪ್ರವಾಸ

1. ಭೀಮಸೇನ ವೃಷಕೇತುವಿನೊಂದಿಗೆ ಭದ್ರವತಿಗೆ ಹೋಗುವುದು – ಲಕ್ಷ್ಮೀಶ
2. ಸೆಲ್‌ನಲ್ಲಿ ಕಳೆದ ಒಂದು ದಿನ – ಗೊರೂರು ರಾಮಸ್ವಾಮಿ ಅಯ್ಯಂಗಾರ್
3. ನಡೆದುಬಂದ ದಾರಿ – ಗೋಪಾಲಕೃಷ್ಣ ಅಡಿಗ
4. ಒಬ್ಬ ನಿಷ್ಠಾವಂತ ಅಧ್ಯಾಪಕ – ಹಾ. ಮಾ. ನಾಯಕ

ಘಟಕ – 3 : ವಿಚಾರ ಕ್ರಾಂತಿ

1. ವೈಚಾರಿಕತೆ – ಹೆಚ್. ನರಸಿಂಹಯ್ಯ
2. ಶ್ರೇಷ್ಠತೆಯ ವ್ಯಸನ – ಕೆ. ವಿ. ಸುಬ್ಬಣ್ಣ
3. ವಚನ ಸಾಹಿತ್ಯ : ಸ್ತ್ರೀ ಸಂವೇದನೆ ಮತ್ತು ಭಾಷೆ – ಎಸ್. ಎಸ್. ಅಂಗಡಿ
4. ದಾರಿಯ ಬುತ್ತಿ – ಶಂಬಾ ಜೋಶಿ

ಘಟಕ – 4 : ಸಂಕೀರ್ಣ

1. ಮಿಲರೇಪ – ಎಚ್. ಎಸ್. ಶಿವಪ್ರಕಾಶ
2. ಅಂಗದೊಳಗ ಅಲಾಂವಿ ಆಡಿನ್ನಾ – ಶಿರಗೂರು ಕಲ್ಮೇಶ
3. ಸೂರ್ಯ ಚಂದ್ರರಿಲ್ಲದ ನಾಡಿನಲ್ಲಿ – ಎಚ್. ಟಿ. ಪೋತೆ
4. ಭಾಷಣ ಕಲೆ ಮತ್ತು ವ್ಯಕ್ತಿತ್ವ ವಿಕಸನ – ವಿಷ್ಣು ಎಂ. ಶಿಂದೆ

ವಿ.ಸೂ : ಸದರಿ ಪಠ್ಯಕ್ರಮವು ಪುಸ್ತಕ ರೂಪದಲ್ಲಿ ಪ್ರಕಟವಾಗುವುದನ್ನು ಕಾಯದೆ, ಅಧ್ಯಾಪಕರುಗಳು ಈ ಮೇಲಿನ ಪಠ್ಯಕ್ರಮ ಸಾಮಗ್ರಿಯನ್ನು ತಮ್ಮ ಮೂಲದಿಂದ ಸಂಗ್ರಹಿಸಿಕೊಂಡು ಪಾಠಬೋಧನೆ ಮಾಡಲು ತಿಳಿಸಲಾಗಿದೆ.

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಎಸ್.ಸಿ

(Ability Enhancement Compulsory Course)

Language-1

(ವಾರಕ್ಕೆ 4 ಗಂಟೆಗಳ ಪಾಠ, 3 ಕ್ರೆಡಿಟ್‌ಗಳ ಪತ್ರಿಕೆ, ಒಟ್ಟು ಅಂಕಗಳು–100, ಥಿಯರಿ ಪರೀಕ್ಷೆಗೆ–60 ಅಂಕಗಳು, ಆಂತರಿಕ ಗುಣಾಂಕಗಳಿಗೆ–40 ಅಂಕಗಳು, ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯಕ್ಕೆ 2 ಗಂಟೆಗಳ ಪರೀಕ್ಷೆ, ಆಂತರಿಕ ಗುಣಾಂಕಗಳ ಕುರಿತು ನೀಡಿದ ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಪದ್ಧತಿಯನ್ನು ಮೇಲೆ ತಿಳಿಸಿರುವಂತೆ ನಡೆಸುವುದು.)

ಘಟಕ – 1 : ದಮನಿತ ಲೋಕ

1. ಪೆಟ್ರೊಮ್ಯಾಕ್ಸ್ ಹೊತ್ತವರು – ಜಂಬಣ್ಣ ಅಮರಚಿಂತ
2. ಮಾರಿಕೊಂಡವರು – ದೇವನೂರು ಮಹಾದೇವ
3. ಅಕ್ಕೈ ಪದ್ಮಶಾಲಿ – ಡಿ. ಡೊಮೆನಿಕ್
4. ನಮ್ಮರೂಪ್ಲಿ – ಬಿ. ಟಿ. ಲಲಿತಾ ನಾಯಕ
5. ವಿಹ್ವಲ – ಬಿ. ಆರ್. ಲಕ್ಷ್ಮಣರಾವ್

ಘಟಕ – 2 : ಸಹಿಷ್ಣುತೆ

1. ಕಸವರಮೆಂಬುದು ನೆರೆಸೈರಿಸಲಾರ್ಪೊಡೆ – ಕವಿರಾಜಮಾರ್ಗ (ನಾಲ್ಕು ಪದ್ಯಗಳು)
2. ಕುಲಕುಲವೆಂದು ಹೊಡೆದಾಡದಿರಿ – ಕನಕದಾಸರು
3. ಶರಣ ದರ್ಮದ ಆಧ್ಯಾತ್ಮಿಕ ನಿಲುವುಗಳು – ಜಿ. ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
4. ನಿಮ್ಮೊಡನಿದ್ದು ನಿಮ್ಮಂತಾಗದೆ – ಕೆ. ಎಸ್. ನಿಸಾರ ಅಹಮ್ಮದ್

ಘಟಕ – 3 : ಶ್ರೀಸಾಮಾನ್ಯನ ಬದುಕು

1. ಉತ್ತರಾದೇವಿ – ಜನಪದ ಗೀತೆ
2. ಎಲುಬಿನ ಹಂದರದೊಳಗೆ – ಮೂಡ್ನಾಕೂಡು ಚಿನ್ನಸ್ವಾಮಿ
3. ಧಣಿಯರ ಬೆಳ್ಳಿಲೋಟ – ಎಚ್. ನಾಗವೇಣಿ
4. ಸಿಂಕ್ರಾಮೇಸ್ತ್ರೀ ಮತ್ತು ಅರಿಸ್ಟಾಟಲ್ – ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿ

ಘಟಕ – 4.4 : ಸಂಕೀರ್ಣ

1. ಯಾವುದು ಒಳ್ಳೆಯ ಕವನ – ಚಂಪಾ
2. ಫ. ಗು. ಹಳಕಟ್ಟಿ – ಬಸವರಾಜ ಜಗಜಂಪಿ
3. ದಲಿತ ಚಳುವಳಿ – ಎಲ್. ಹನುಮಂತಯ್ಯ
4. ಮಹಿಳಾ ವಿಮೋಚನಾ ಚಳುವಳಿ – ಗಾಯತ್ರಿ ನಾವಡ

ವಿ.ಸೂ : ಸದರಿ ಪಠ್ಯಕ್ರಮವು ಪುಸ್ತಕ ರೂಪದಲ್ಲಿ ಪ್ರಕಟವಾಗುವುದನ್ನು ಕಾಯದೆ, ಅಧ್ಯಾಪಕರುಗಳು ಈ ಮೇಲಿನ ಪಠ್ಯಕ್ರಮ ಸಾಮಗ್ರಿಯನ್ನು ತಮ್ಮ ಮೂಲದಿಂದ ಸಂಗ್ರಹಿಸಿಕೊಂಡು ಪಾಠಬೋಧನೆ ಮಾಡಲು ತಿಳಿಸಲಾಗಿದೆ.

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

RANI CHANNAMMA UNIVERSITY

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(ನ್ಯಾಕ್ ಮಾನ್ಯತೆ ಬಿ+ ೨೦೨೧)

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ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಬಿ.ಎ. ಐದು ಮತ್ತು ಆರನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ)

DSC–Discipline Specific Course – 09,10,11,12,13 & 14

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ

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ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ

ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ

ಬಿ.ಎ. ಐದು ಮತ್ತು ಆರನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ) (DSC) ಪತ್ರಿಕೆಯ ಪಠ್ಯಕ್ರಮ

(Discipline Specific Course)

ಕನ್ನಡ ಭಾಷಾ ವಿಷಯದ ಪಠ್ಯಕ್ರಮ ಹಾಗೂ ಆಂತರಿಕ ಮತ್ತು ಥಿಯರಿ ಪರೀಕ್ಷಾ ವಿಧಾನವು ಮೂರನೆಯ ವರ್ಷಕ್ಕಾಗಿ ಅಂದರೆ 2023–24ನೇ ಸಾಲಿನ ಐದು ಮತ್ತು ಆರನೆಯ ಸೆಮಿಸ್ಟರ್ ಕನ್ನಡ ಭಾಷಾ ವಿಷಯದ ಪಠ್ಯಕ್ರಮ ಹಾಗೂ ಪರೀಕ್ಷಾ ವಿಧಾನವು ಈ ಮುಂದಿನಂತಿರುತ್ತದೆ.

1. ಆಂತರಿಕ ಅಂಕಗಳ ಮಾದರಿ ಮತ್ತು ನೀಡುವ ವಿಧಾನ : ಸಮಗ್ರ ಮತ್ತು ನಿರಂತರ ಮೌಲ್ಯಮಾಪನ ಮಾದರಿಯನ್ನು ಅನುಸರಿಸಬೇಕಾಗಿರುತ್ತದೆ. ರಚನಾತ್ಮಕ ಮೌಲ್ಯಮಾಪನ (Formative Assessment) ಅಂತಿಮ ಹಂತದಲ್ಲಿ ಸಂಚಿತ ಮೌಲ್ಯಮಾಪನ (Summative Assessment) ಕ್ರಮದಂತೆ ಆಂತರಿಕ ಅಂಕಗಳನ್ನು ನಿರಂತರ ಮೌಲ್ಯಮಾಪನದ ವರದಿ ಮತ್ತು ಸಂಚಿತ ಮೌಲ್ಯಮಾಪನದ ವರದಿಯ ಆಧಾರದ ಮೇಲೆ ನೀಡುವುದು.

i. ಪತ್ರಿಕೆ ಒಟ್ಟು 100 ಅಂಕಗಳು

ii. ಘಟಕ 1ರ (Component 1- C1) ನಿರಂತರ ಮೌಲ್ಯಮಾಪನಕ್ಕೆ 20 ಆಂತರಿಕ ಅಂಕಗಳು (ಸೆಮಿಸ್ಟರ್‌ನ ಮೊದಲೆರಡು ತಿಂಗಳು)

iii. ಘಟಕ 2ರ (Component 2- C2) ನಿರಂತರ ಮೌಲ್ಯಮಾಪನಕ್ಕೆ 20 ಆಂತರಿಕ ಅಂಕಗಳು (ಸೆಮಿಸ್ಟರ್‌ನ ನಂತರದೆರಡು ತಿಂಗಳು)

iv. ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯದ ಪರೀಕ್ಷೆಗೆ 60 ಅಂಕಗಳು.

2. **Evaluation process of IA marks shall be as follows:**

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course/s and within 45 working days of semester program.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of remaining 50 percent of syllabus of the courses of the semester.

c) During the 17^{th}– 19^{th}week of the semester, a semester end examination shall be conducted by the University for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator / Principal. The Program Coordinator / Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher but before commencement of the concerned semester end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be stamped by the concerned department using their department seal at the time of conducting tests / assignment / work etc.

f) The outline for continuous assessment activities for Component-1 (C1) and Component -2 (C2) of a course shall be as under

Activities	C1	C2	Total Marks
Session Test	10% marks	10% marks	20%
Seminars/Presentations/Activity	10% marks		10%
Case study /Assignment / Field work / Project work etc.		10% marks	10%
Total	20% marks	20% marks	40%

Conduct of Seminar, Case study / Assignment, etc. can be either in C1 or in C2 component at the convenience of the concerned teacher.

Course Structure of DSC for B.A (whichever applicable) Kannada subject

Semester V								
Sl. No.	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L+T +P)	Examination	Internal Assessment	Total Marks	Credits
1	BA.5.1 (C9)	ಕನ್ನಡ ವ್ಯಾಕರಣ ಪರಂಪರೆ ಶಬ್ದಮಣಿದರ್ಪಣ (ಅಕ್ಷರ–ಸಂಧಿ–ನಾಮ ಪ್ರಕರಣಗಳು)	DSC	04	60	40	100	4
2	BA.5.2 (C10)	ಕನ್ನಡ ಭಾಷಾ ವಿಜ್ಞಾನ	DSC	04	60	40	100	4
3	BA. 5.3 (C11)	ಕನ್ನಡ ಛಂದಸ್ಸು	DSC	04	60	40	100	4
4		Employability (Kannada) Skills/Cyber Security/	SEC	2+2=4	60	40	100	3
						ಒಟ್ಟು		15

Semester VI								
Sl. No.	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L+T+P)	Examination	Internal Assessment	Total Marks	Credits
1	BA.6.1 (C12)	ಕನ್ನಡ ವ್ಯಾಕರಣ ಪರಂಪರೆ ಶಬ್ದಮಣಿದರ್ಪಣ (ಸಮಾಸ–ಆಖ್ಯಾತ–ಧಾತು–ಅವ್ಯಯ ಪ್ರಕರಣಗಳು)	DSC	04	60	40	100	4
2	BA.6.2 (C13)	ಸಾಂಸ್ಕೃತಿಕ ಅಧ್ಯಯನಗಳು : ಪಠ್ಯಗಳ ಬಹುಶಿಸ್ತೀಯ ಅಧ್ಯಯನ	DSC	04	60	40	100	4
3	BA. 6.3 (C14)	ಗ್ರಂಥ ಸಂಪಾದನೆ, ಹಸ್ತಪ್ರತಿ ಶಾಸ್ತ್ರ	DSC	04	60	40	100	4
4		Internship/Project (As per the University Common Regulations)		02			50	2
								14

Model Question Paper for DSC 9, 10, 11, 12, 13 and 14

Max Marks: 60 Max **Time: 2 hrs**

1. ಪ್ರತಿ ಘಟಕ ದಿಂದ ಎರಡು ಪ್ರಬಂಧ ರೂಪದ ಪ್ರಶ್ನೆ ಕೇಳಿ ಒಂದಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 10X4=40
2. ಪ್ರತಿ ಘಟಕ ದಿಂದ ಒಂದರಂತೆ ನಾಲ್ಕು ಟಿಪ್ಪಣಿ ರೂಪದ ಪ್ರಶ್ನೆ ಕೇಳಿ ಎರಡಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 5X2=10
3. ಇಡೀ ಪಠ್ಯಕ್ಕೆ ಅನ್ವಯಿಸಿ ಒಂದು ಅಂಕದ ಹತ್ತು ವಸ್ತು ನಿಷ್ಠಪ್ರಶ್ನೆ ಕೇಳುವುದು 1X10=10

Model Question Paper for SEC 5th SEM Only

Max Marks: 60 Max **Time: 2 hrs**

1. ಐದೂ ಘಟಕಗಳಿಂದ ಹತ್ತು ಟಿಪ್ಪಣಿಗಳನ್ನು ಕೇಳಿ ಆರಕ್ಕೆ ಉತ್ತರಿಸಲು ಹೇಳುವುದು. 10X6=60

ರಾಣೆ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ
ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ
ಬಿ.ಎ. ಐದನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ) 2023–24 ರಿಂದ ಅನ್ವಯವಾಗುವಂತೆ

(DSC) 5.1 (C09) ಕನ್ನಡ ವ್ಯಾಕರಣ ಪರಂಪರೆ ಶಬ್ದಮಣಿದರ್ಪಣ (ಅಕ್ಷರ–ಸಂಧಿ–ನಾಮ ಪ್ರಕರಣಗಳು)

ಪಠ್ಯಕ್ರಮ

ಘಟಕ–01 : ಕನ್ನಡ ವ್ಯಾಕರಣ ಪರಂಪರೆ (ಅರ್ಥ, ವ್ಯಾಖ್ಯೆ, ಸ್ವರೂಪ, ಪ್ರಯೋಜನ)

ಘಟಕ–02 : ಅಕ್ಷರ ಪ್ರಕರಣ

ಘಟಕ–03 : ಸಂಧಿ ಪ್ರಕರಣ

ಘಟಕ–04 : ನಾಮ ಪ್ರಕರಣ

ನಿಗದಿತ ಪಠ್ಯ : ಶಬ್ದಮಣಿದರ್ಪಣ ಸಂಗ್ರಹ – ಬಿ.ಡಿ.ಸಾಸನೂರ ಮತ್ತು ಡಾ.ಎಂ.ಎಂ.ಕಲಬುರ್ಗಿ (ಸಂ), ಸಮಾಜ ಪುಸ್ತಕಾಲಯ, ಧಾರವಾಡ

(ಈ ಮೇಲಿನ ಪ್ರಕರಣಗಳ ಸೂತ್ರಗಳನ್ನು ವಿಷಯಕ್ಕನುಗುಣವಾಗಿ ಆಯ್ಕೆ ಮಾಡಿ ಬೋಧಿಸುವುದು)

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು :

1. ಕೇಶಿರಾಜ ವಿರಚಿತ ಶಬ್ದಮಣಿದರ್ಪಣಂ : ಡಿ.ಎಲ್.ನರಸಿಂಹಾಚಾರ್ಯ (ಸಂ)
2. ಕೇಶಿರಾಜ ವಿರಚಿತ ಶಬ್ದಮಣಿದರ್ಪಣಂ : ಎಲ್.ಬಸವರಾಜು (ಸಂ)
3. ಕನ್ನಡ ಭಾಷೆ ಮತ್ತು ವ್ಯಾಕರಣ ಒಂದು ವಿವೇಚನೆ : ಕೆ. ಕುಶಾಲಪ್ಪಗೌಡ
4. ಕನ್ನಡ ವ್ಯಾಕರಣ ಮತ್ತು ಭಾಷೆ : ಡಾ.ವ್ಹಿ.ಜಿ.ಪೂಜಾರ
5. ಕೇಶಿರಾಜನ ಶಬ್ದಮಣಿದರ್ಪಣ ವಿಳಾಸ : ಡಾ. ವಿ. ಶಿವಾನಂದ
6. ಹಳಗನ್ನಡ ವ್ಯಾಕರಣ : ಟಿ. ವಿ. ವೆಂಕಟಾಚಲಾಶಾಸ್ತ್ರೀ
7. ಕನ್ನಡ ಕೈಪಿಡಿ, ಸಂಪುಟ–1 : ಡಾ.ಕೆ.ವಿ.ಪುಟ್ಟಪ್ಪ (ಪ್ರ.ಸಂ.)
8. ಸಂಕ್ಷಿಪ್ತ ಕನ್ನಡ ಭಾಷೆಯ ಚರಿತ್ರೆ : ಎಂ.ಎಚ್.ಕೃಷ್ಣಯ್ಯ
9. ಭಾಷೆ (ವಿಶ್ವಕೋಶ) : ಡಾ.ಕೆ.ವಿ.ನಾರಾಯಣ (ಸಂ)
10. ಪ್ರಾಚೀನ ಕನ್ನಡ ವ್ಯಾಕರಣಗಳು : ಎಂ.ವಿ.ಸೀತಾರಾಮಯ್ಯ
11. ಕನ್ನಡಕ್ಕೆ ಬೇಕು ಕನ್ನಡದ್ದೇ ವ್ಯಾಕರಣ : ಡಾ.ಡಿ.ಎನ್.ಶಂಕರಭಟ್
12. ಕನ್ನಡ ಭಾಷೆಯ ಕಲ್ಪಿತ ಚರಿತ್ರೆ : ಡಾ.ಡಿ.ಎನ್.ಶಂಕರಭಟ್
13. ಕನ್ನಡ ವ್ಯಾಕರಣ ಪರಂಪರೆಯ ಮೇಲೆ ಸಂಸ್ಕೃತದ ಪ್ರಭಾವ : ಡಾ.ಪಿ.ಶ್ರೀಕೃಷ್ಣಭಟ್

(ಈ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟಂತೆ ಇನ್ನಿತರ ಗ್ರಂಥ/ಲೇಖನಗಳನ್ನು ಗಮನಿಸುವುದು)

ರಾಣೆ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ
ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ
ಬಿ.ಎ. ಐದನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ) 2023–24 ರಿಂದ ಅನ್ವಯವಾಗುವಂತೆ
(DSC) 5.2 (C10) ಕನ್ನಡ ಭಾಷಾ ವಿಜ್ಞಾನ

ಪಠ್ಯಕ್ರಮ

ಘಟಕ–01 : ಭಾಷೆ – ಅರ್ಥ, ವ್ಯಾಖ್ಯೆಗಳು, ಸ್ವರೂಪ–ಪ್ರಯೋಜನ

ಘಟಕ–02 : ಭಾಷಾವಿಜ್ಞಾನದ ಮೂಲ ತತ್ವಗಳು – ಉಗಮ–ವಿಕಾಸ ಕುರಿತ ಸಿದ್ಧಾಂತಗಳು

ಘಟಕ–03 : ಭಾಷಾ ಬಳಕೆ – ಆಡಳಿತ ಭಾಷೆ, ವ್ಯವಹಾರಿಕ ಭಾಷೆಯ ಸ್ವರೂಪ, ಲಕ್ಷಣ, ಪ್ರಯೋಜನ

ಘಟಕ–04 : ಭಾಷಾವಿಜ್ಞಾನದ ಸಮಕಾಲೀನ ಬೆಳವಣಿಗೆಗಳು – ಭಾಷಿಕ ಪರಿವರ್ತನೆ, ಧ್ವನಿ ಪರಿವರ್ತನೆ, ಅರ್ಥ ಪರಿವರ್ತನೆ

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು :

1. ಕನ್ನಡ ಭಾಷೆ ಮತ್ತು ವ್ಯಾಕರಣ ಒಂದು ವಿವೇಚನೆ : ಕೆ. ಕುಶಾಲಪ್ಪಗೌಡ
2. ಕನ್ನಡ ಭಾಷಾ ವ್ಯಾಸಂಗ : ಸವದತ್ತಿಮಠ
3. ಸಾಮಾನ್ಯ ಭಾಷಾವಿಜ್ಞಾನ : ಕೆ.ಕೆಂಪೇಗೌಡ
4. ಕನ್ನಡ ವ್ಯಾಕರಣ ಮತ್ತು ಭಾಷೆ : ಡಾ.ಜಿ.ಪೂಜಾರ
5. ಕನ್ನಡ ಕೈಪಿಡಿ ಸಂಪುಟಗಳು : ಡಾ.ಕೆ.ವಿ.ಪುಟ್ಟಪ್ಪ (ಪ್ರ.ಸಂ.)
6. ಭಾಷಾವಿಜ್ಞಾನದ ಮೂಲ ತತ್ವಗಳು : ಡಾ.ಎಂ.ಚಿದಾನಂದಮೂರ್ತಿ
7. ತೌಲನಿಕ ಭಾಷಾವಿಜ್ಞಾನ : ಕೆ.ಕೆಂಪೇಗೌಡ
8. ಕನ್ನಡ ಭಾಷೆಯ ಚರಿತ್ರೆ : ಪ್ರ.ಗೋ.ಕುಲಕರ್ಣಿ
9. ಕನ್ನಡ ಭಾಷೆಯ ಕಲ್ಪಿತ ಚರಿತ್ರೆ : ಡಾ.ಡಿ.ಎನ್.ಶಂಕರಭಟ್
10. ಕನ್ನಡ ಭಾಷಾಶಾಸ್ತ್ರ : ಡಾ.ರಾ.ಯ.ಧಾರವಾಡಕರ
11. ಕನ್ನಡ ಭಾಷಾಶಾಸ್ತ್ರ : ಹಂ.ಪ.ನಾಗರಾಜಯ್ಯ
12. ಭಾಷೆ (ವಿಶ್ವಕೋಶ) : ಕೆ.ವಿ.ನಾರಾಯಣ(ಸಂ)

(ಈ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟಂತೆ ಇನ್ನಿತರ ಗ್ರಂಥ/ಲೇಖನಗಳನ್ನು ಗಮನಿಸುವುದು)

ರಾಣೆ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ
ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ
ಬಿ.ಎ. ಐದನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ) 2023–24 ರಿಂದ ಅನ್ವಯವಾಗುವಂತೆ

(DSC) 5.3 (C11) ಕನ್ನಡ ಛಂದಸ್ಸು

ಪಠ್ಯಕ್ರಮ

ಘಟಕ–01 : ಕನ್ನಡ ಛಂದಸ್ಸು – ಅಧ್ಯಯನ ಪ್ರಯೋಜನ, ಬೆಳೆದು ಬಂದ ದಾರಿ

ಘಟಕ–02 : ಗಣಗಳ ಸ್ವರೂಪ, ಖ್ಯಾತ ಕರ್ನಾಟಕಗಳು

ಘಟಕ–03 : ರಗಳೆ, ಕಂದ, ಷಟ್ಪದಿ, ಸಾಂಗತ್ಯ, ತ್ರಿಪದಿ, ಅಕ್ಕರ, ಪಿರಿಯಕ್ಕರ

ಘಟಕ–04 : ಆಧುನಿಕ ಕನ್ನಡ ಛಂದಸ್ಸು, ಹೊಸ ಪ್ರಯೋಗಗಳು – ಸರಳ ರಗಳೆ. ಸುನೀತ, ಪ್ರಗಾಥ

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು :

1. ಕನ್ನಡ ಛಂದಸ್ವರೂಪ : ಟಿ.ವಿ.ವೆಂಕಟಾಚಲಶಾಸ್ತ್ರೀ
2. ಕನ್ನಡ ಛಂದೋವಿಕಾಸ : ಡಿ.ಎಸ್.ಕರ್ಕಿ
3. ಛಂಧೋಮಿತ್ರ: ಅ.ರಾ.ಮಿತ್ರ
4. ಕನ್ನಡ ಕೈಪಿಡಿ 1–2 : ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
5. ಇಂಗ್ಲೀಷ್ ಗೀತೆಗಳು : ಬಿ.ಎಂ.ಶ್ರೀಕಂಠಯ್ಯ
6. ಸಮಾಲೋಕನ : ತೀ.ನಂ.ಶ್ರೀ .
7. ಛಂದೋನಿಜಗುಣಿ : ಮಧುವನ ಶಂಕರ, ಮೊರಬದ ಮಲ್ಲಿಕಾರ್ಜುನ (ಸಂ)

(ಈ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟಂತೆ ಇನ್ನಿತರ ಗ್ರಂಥ/ಲೇಖನಗಳನ್ನು ಗಮನಿಸುವುದು)

ರಾಣೆ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ
ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ
ಬಿ.ಎ. ಐದನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ) 2023–24 ರಿಂದ ಅನ್ವಯವಾಗುವಂತೆ
(SEC) ಕೌಶಲ್ಯ ಕನ್ನಡ

ಪಠ್ಯಕ್ರಮ

1. ಕನ್ನಡ ಭಾಷೆ ಮತ್ತು ಸಂವಹನ, ಉದ್ಘೋಷಣೆ ಅಥವಾ ಕಾರ್ಯಕ್ರಮ ನಿರೂಪಣೆ, ಮಾತಿನ ಕಲೆ
2. ಇಲೆಕ್ಟ್ರಾನಿಕ್ ಮಾಧ್ಯಮಗಳಿಗೆ ಸುದ್ದಿ ಸಂಗ್ರಹ ಮತ್ತು ವರದಿಗಾರಿಕೆ
3. ಸುದ್ದಿ ಸಂಪಾದನೆ, ಅಂಕಣ ಬರಹ ಹಾಗೂ ಸಂಭಾಷಣೆಗಳ ಬರಹ
4. ವಿಶೇಷ ಅಂಕಣಗಳ ನಿರೂಪಣೆ ಹಾಗೂ ವಾರ್ತಾ ವಾಚನ ಕ್ರಮ, ಸಂಪಾದಕೀಯ ಬರವಣಿಗೆ, ವಿಶೇಷ ಸಂದರ್ಶನ ಕ್ರಮ
5. ಧ್ವನಿ ಸಂಸ್ಕೃತಿ (Voice Culture), ಭಾಷೆ ಮತ್ತು ಸಂಗೀತಜ್ಞಾನ, ಜಾಹೀರಾತು ಪರಿಕಲ್ಪನೆಗಳ ಬರವಣಿಗೆ

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು :

1. ಇಗೋ ಕನ್ನಡ–1: ಜಿ. ವೆಂಕಟಸುಬ್ಬಯ್ಯ
2. ಇಂದಿನ ಕನ್ನಡ– ರಚನೆ ಮತ್ತು ಬಳಕೆ: ಎಸ್.ಎಸ್. ಶ್ರೀಧರ
3. ಕನ್ನಡ ಶೈಲಿ ಕೈಪಿಡಿ: ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ
4. ಕನ್ನಡ ಭಾಷಾಭಿವೃದ್ಧಿ: ಸಾಧನೆ ಮತ್ತು ಮುನ್ನೋಟ– ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ
5. ಸಂವಹನ ಕನ್ನಡ: ಡಿ.ವಿ. ಪರಮಶಿವಮೂರ್ತಿ
6. ಸಮೂಹ ಮಾಧ್ಯಮಗಳು: ಎಸ್. ದಿವಾಕರ
7. ಸಮೂಹ ಮಾಧ್ಯಮಗಳು: ಬಿ. ಎಸ್. ಚಂದ್ರಶೇಖರ
8. ಶೈಲಿ ಶಾಸ್ತ್ರ: ಕೆ. ವಿ. ನಾರಾಯಣ
9. ಸಾಹಿತ್ಯ ಮತ್ತು ಸಮೂಹ ಮಧ್ಯಮಗಳು: ಬಸವರಾಜ ಸಬರದ
10. ಪತ್ರೋದ್ಯಮ: ಎಂ. ಚಲಪತಿರಾವ್
11. ಆಧುನಿಕ ಸಂವಹನ ಮಾಧ್ಯಮಗಳು ಮತ್ತು ಕನ್ನಡದ ಅಭಿವೃದ್ಧಿ: ಡಾ. ಟಿ.ಸಿ. ಪೂರ್ಣಿಮಾ

(ಈ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟಂತೆ ಇನ್ನಿತರ ಗ್ರಂಥ/ಲೇಖನಗಳನ್ನು ಗಮನಿಸುವುದು)

ರಾಣೆ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ
ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ
ಬಿ.ಎ. ಆರನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ) 2023–24 ರಿಂದ ಅನ್ವಯವಾಗುವಂತೆ

(DSC) 6.1 (C12) ಕನ್ನಡ ವ್ಯಾಕರಣ ಪರಂಪರೆ ಶಬ್ದಮಣಿದರ್ಪಣ (ಸಮಾಸ–ಆಖ್ಯಾತ–ಧಾತು–ಅವ್ಯಯ ಪ್ರಕರಣಗಳು)

ಪಠ್ಯಕ್ರಮ

ಘಟಕ–01 : ಕನ್ನಡ ವ್ಯಾಕರಣ ಪರಂಪರೆ : ಆಧುನಿಕ ಚಿಂತನೆಗಳು

ಘಟಕ–02 : ಸಮಾಸ ಪ್ರಕರಣ

ಘಟಕ–03 : ಆಖ್ಯಾತ ಪ್ರಕರಣ

ಘಟಕ–04 : ಧಾತು ಪ್ರಕರಣ

ನಿಗದಿತ ಪಠ್ಯ : ಶಬ್ದಮಣಿದರ್ಪಣ ಸಂಗ್ರಹ – ಬಿ.ಡಿ.ಸಾಸನೂರ ಮತ್ತು ಡಾ.ಎಂ.ಎಂ.ಕಲಬುರ್ಗಿ (ಸಂ), ಸಮಾಜ ಪುಸ್ತಕಾಲಯ, ಧಾರವಾಡ

(ಈ ಮೇಲಿನ ಪ್ರಕರಣಗಳ ಸೂತ್ರಗಳನ್ನು ವಿಷಯಕ್ಕನುಗುಣವಾಗಿ ಆಯ್ಕೆ ಮಾಡಿ ಬೋಧಿಸುವುದು)

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು

1. ಕನ್ನಡ ಭಾಷೆ ಮತ್ತು ವ್ಯಾಕರಣ ಒಂದು ವಿವೇಚನೆ : ಕೆ.ಕುಶಾಲಪ್ಪಗೌಡ
2. ಕನ್ನಡ ವ್ಯಾಕರಣ ಮತ್ತು ಭಾಷೆ : ವಿ.ಜಿ. ಪೂಚಾರ್
3. ಕೇಶಿರಾಜನ ಶಬ್ದಮಣಿದರ್ಪಣ ವಿಳಾಸ : ವಿ.ಶಿವಾನಂದ
4. ಹಳಗನ್ನಡ ವ್ಯಾಕರಣ : ಟಿ.ವಿ.ವೆಂಕಟಾಚಲಶಾಸ್ತ್ರೀ
5. ಕನ್ನಡ ಕೈಪಿಡಿ ಸಂಪುಟಗಳು : ಕೆ.ವಿ.ಪುಟ್ಟಪ್ಪ (ಪ್ರಸಂ)
6. ಪ್ರಾಚೀನ ಕನ್ನಡ ವ್ಯಾಕರಣಗಳು : ಎಂ.ವಿ. ಸೀತಾರಾಮಯ್ಯ
7. ಕನ್ನಡಕ್ಕೆ ಬೇಕು ಕನ್ನಡದ ವ್ಯಾಕರಣ : ಡಿ.ಎನ್. ಶಂಕರಭಟ್ಟ
8. ಕನ್ನಡ ಭಾಷೆಯ ಕಲ್ಪಿತ ಚರಿತ್ರೆ : ಡಿ.ಎನ್ ಶಂಕರಭಟ್ಟ
9. ಕನ್ನಡ ವ್ಯಾಕರಣ ಪರಂಪರೆಯ ಮೇಲೆ ಸಂಸ್ಕೃತದ ಪ್ರಭಾವ : ಪಿ.ಶ್ರೀಕೃಷ್ಣಭಟ್ಟ

(ಈ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟಂತೆ ಇನ್ನಿತರ ಗ್ರಂಥ/ಲೇಖನಗಳನ್ನು ಗಮನಿಸುವುದು)

ರಾಣೆ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ
ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ
ಬಿ.ಎ. ಆರನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ) 2023–24 ರಿಂದ ಅನ್ವಯವಾಗುವಂತೆ

(DSC) 6.2 (C13) ಮಧ್ಯಕಾಲೀನ ಸಾಹಿತ್ಯದ ಸಾಂಸ್ಕೃತಿಕ ಪಠ್ಯದ ಅಧ್ಯಯನ

ಪಠ್ಯಕ್ರಮ

ಘಟಕ–01 : ಬಸವಣ್ಣನವರ ವಚನಗಳಲ್ಲಿ ವೈಚಾರಿಕತೆ

ಘಟಕ–02 : ಬಸವಣ್ಣನವರ ವಚನಗಳಲ್ಲಿ ಅನುಭಾವ

ಘಟಕ–03 : ಬಸವಣ್ಣನವರ ವಚನಗಳಲ್ಲಿ ಸಾಮರಸ್ಯ

ಘಟಕ–04 : ಬಸವಣ್ಣನವರ ವಚನಗಳಲ್ಲಿ ಸಮಸಮಾಜ

ನಿಗದಿಪಡಿಸಿದ ಪಠ್ಯ : ಶ್ರೀ. ಬಸವೇಶ್ವರ ವಚನಾಮೃತ – (ಸಂ) ಡಾ. ಆರ್. ಸಿ. ಹಿರೇಮಠ, ಪ್ರಕಾಶನ–ವಚನ ಅಧ್ಯಯನ ಕೇಂದ್ರ, ನಾಗನೂರು ರುದ್ರಾಕ್ಷಿಮಠ, ಶಿವಬಸವ ನಗರ, ಬೆಳಗಾವಿ–2017)

(ಪ್ರಶ್ನೆಗಳನ್ನು ನಿಗದಿಪಡಿಸಿದ ಪಠ್ಯದಲ್ಲಿ ಮಾತ್ರ ನಾಲ್ಕು ಘಟಕಗಳಲ್ಲಿ ನೀಡಿರುವ ಪರಿಕಲ್ಪನೆಗಳನ್ನು ಆಧರಿಸಿ ತೆಗೆಯುವುದು.)

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು

1. ಸಮಗ್ರ ವಚನ ಸಂಪುಟಗಳು : ಎಂ.ಎಂ. ಕಲಬುರ್ಗಿ(ಪ್ರ.ಸಂ)
2. ವಚನ ಸಾಹಿತ್ಯ – ಒಂದು ಸಾಂಸ್ಕೃತಿಕ ಅಧ್ಯಯನ : ಡಾ.ಪಿ.ವಿ.ನಾರಾಯಣ
3. ಸಮಗ್ರ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ ಸಂಪುಟಗಳು– ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಂಗಳೂರು
4. ಕನ್ನಡ ಅಧ್ಯಯನ ಸಂಸ್ಥೆಯ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ ಸಂಪುಟಗಳು –ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ
5. ಯುಗಧರ್ಮ ಮತ್ತು ಕನ್ನಡ ಸಾಹಿತ್ಯದರ್ಶನ – ಪ್ರೊ. ಕೀರ್ತಿನಾಥ ಕುರ್ತಕೋಟಿ
6. ಸಾಮಾನ್ಯನಿಗೆ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ ಸಂಪುಟಗಳು– ಬೆಂಗಳೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ
7. ಸಾಮಾನ್ಯನಿಗಾಗಿ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ (ಹತ್ತು ಸಂಪುಟಗಳು) – ಬೆಂ.ವಿ.ವಿ. ಬೆಂಗಳೂರು
8. ವಚನ ಸಾಹಿತ್ಯದಲ್ಲಿ ವೈಚಾರಿಕತೆ – ಎಚ್. ತಿಪ್ಪೇರುದ್ರಸ್ವಾಮಿ
9. ಅನುಭಾವ ಸಾಹಿತ್ಯ – ಎಚ್. ತಿಪ್ಪೇರುದ್ರಸ್ವಾಮಿ
10. ಶೂನ್ಯ ಸಂಪಾದನೆ ಮತ್ತು ಆಧುನಿಕ ಮೌಲ್ಯಗಳು – ಸಾ.ಶಿ. ಮರುಳಯ್ಯ
11. ಶೂನ್ಯ ಸಂಪಾದನೆ ಒಂದು ಅಧ್ಯಯನ – ಸಾ.ಶಿ. ಮರುಳಯ್ಯ

(ಈ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟಂತೆ ಇನ್ನಿತರ ಗ್ರಂಥ/ಲೇಖನಗಳನ್ನು ಗಮನಿಸುವುದು)

ರಾಣೆ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ
ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ
ಬಿ.ಎ. ಆರನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ) 2023–24 ರಿಂದ ಅನ್ವಯವಾಗುವಂತೆ

(DSC) 6.3 (C14) ಗ್ರಂಥ ಸಂಪಾದನೆ, ಹಸ್ತಪ್ರತಿ ಶಾಸ್ತ್ರ

ಪಠ್ಯಕ್ರಮ

ಘಟಕ–01 : ಗ್ರಂಥ ಸಂಪಾದನೆಯ ಅರ್ಥ, ಸ್ವರೂಪ, ಇತಿಹಾಸ, ಮಹತ್ವ

ಘಟಕ–02 : ಗ್ರಂಥಸಂಪಾದನೆಗೆ ವಿದ್ವಾಂಸರ ಕೊಡುಗೆ – ಕಿಟ್ಟೆಲ್, ಬಿ.ಎಲ್.ರೈಸ್, ಫ.ಗು.ಹಳಕಟ್ಟಿ, ಡಿ.ಎಲ್.ನರಸಿಂಹಾಚಾರ್ಯ

ಘಟಕ–03 : ಹಸ್ತಪ್ರತಿಗಳ ಅರ್ಥ–ಪ್ರಕಾರ–ಮಹತ್ವ

ಘಟಕ–04 : ಹಸ್ತಪ್ರತಿಗಳ ಲೇಖನ ಸಾಮಗ್ರಿಗಳು ಮತ್ತು ಲಿಪಿಕಾರರು

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು

1. ಕನ್ನಡ ಗ್ರಂಥ ಸಂಪಾದನಾಶಾಸ್ತ್ರ: ಎಂ.ಎಂ.ಕಲಬುರ್ಗಿ
2. ಕನ್ನಡ ಗ್ರಂಥ ಸಂಪಾದನೆ : ಡಿ.ಎಲ್.ನರಸಿಂಹಾಚಾರ್
3. ಗ್ರಂಥ ಸಂಪಾದನಾಶಾಸ್ತ್ರ ಪರಿಚಯ : ಸೀತಾರಾಮ ಜಾಗೀರದಾರ್
4. ಮಣಿಹ : ಎಂ.ವಿ.ಸೀತಾರಾಮಯ್ಯ ಮತ್ತು ಆರ್.ಶೇಷಶಾಸ್ತ್ರೀ(ಸಂ)
5. ಹಸ್ತಪ್ರತಿಶಾಸ್ತ್ರ : ಎಂ.ಎಂ. ಕಲಬುರ್ಗಿ
6. ಹಸ್ತಪ್ರತಿ ಸಂರಕ್ಷಣೆಯ ವಿಧಾನಗಳು : ಬಿ.ಎಸ್.ಸಣ್ಣಯ್ಯ
7. ಕನ್ನಡ ಹಸ್ತಪ್ರತಿಗಳು ಒಂದು ಅಧ್ಯಯನ : ಬಿ.ಕೆ.ಹಿರೇಮಠ
8. ಕನ್ನಡ ಹಸ್ತಪ್ರತಿ ಲಿಪಿಕಾರರು, ಪ್ರಶಸ್ತಿಗಳು : ಬಿ.ಆರ್.ಹಿರೇಮಠ
9. ಭಾರತೀಯ ಗ್ರಂಥ ಸಂಪಾದನಾ ಪರಿಚಯ : ಎನ್.ಎಸ್. ಲಕ್ಷ್ಮೀನಾರಾಯಣ ಭಟ್ಟ (ಅನು)
10. ಮಹಾಮಾರ್ಗ (ಡಾ.ಎಂ.ಎಂ.ಕಲಬುರ್ಗಿ ಅಭಿನಂದನ ಗ್ರಂಥ)
11. ಹಸ್ತಪ್ರತಿ ಲಿಪಿಕಾರರು ಮತ್ತು ಪ್ರಶಸ್ತಿಗಳು : ಡಾ.ಬಿ.ಆರ್.ಹಿರೆಮಠ

(ಈ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟಂತೆ ಇನ್ನಿತರ ಗ್ರಂಥ/ಲೇಖನಗಳನ್ನು ಗಮನಿಸುವುದು)

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ
ಶಾಸ್ತ್ರೀಯ ಕನ್ನಡ ಭಾಷಾ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ
ಬಿ.ಎ. ಆರನೆಯ ಸೆಮಿಸ್ಟರ್ (ಎನ್.ಇ.ಪಿ) 2023–24 ರಿಂದ ಅನ್ವಯವಾಗುವಂತೆ
Internship/Project

ಪಠ್ಯಕ್ರಮ

ಪತ್ರಿಕೆ : ಸಂಶೋಧನೆ ಮತ್ತು ಪ್ರೋಜೆಕ್ಟ್

1. **ಪ್ರೊಜೆಕ್ಟ:** ವಿದ್ಯಾರ್ಥಿಯು ಕನ್ನಡ ನಾಡು, ನುಡಿ, ಭಾಷೆ, ಸಾಹಿತ್ಯ, ಕನ್ನಡ ರಂಗಭೂಮಿ, ಕರ್ನಾಟಕ ಸಂಗೀತ, ಕನ್ನಡ ಚಲನಚಿತ್ರ, ಯಕ್ಷಗಾನ, ಬಯಲಾಟ, ಕನ್ನಡ ಜನಪದ ಸಾಹಿತ್ಯ, ಪ್ರದರ್ಶನ ಕಲೆ, ಕನ್ನಡ ಸಂಸ್ಕೃತಿ, ಪರಂಪರೆ, ಕನ್ನಡಿಗರ ಆಚರಣೆಗಳು, ಕರ್ನಾಟಕದ ಆರ್ಥಿಕ, ಸಾಮಾಜಿಕ, ಭೌಗೋಳಿಕ, ರಾಜಕೀಯ, ವೈಜ್ಞಾನಿಕ ಬೆಳವಣಿಗೆಗಳು, ಸ್ಥಳ ಮಹಾತ್ಮೆ, ಸ್ಥಳ ಪುರಾಣಗಳು, ಜೀವನ ಚರಿತೆ, ಆತ್ಮ ಚರಿತ್ರೆ, ಜನಾಂಗಿಕ/ಬುಡಕಟ್ಟು ಅಧ್ಯಯನಗಳು ಇವುಗಳಲ್ಲಿ ಯಾವುದಾದರೂ ಒಂದು ವಿಷಯದ ಕುರಿತು 40–60 ಪುಟಗಳಷ್ಟು ಸಂಪ್ರಬಂಧವನ್ನು ಅಧ್ಯಾಪಕರ ಮಾರ್ಗದರ್ಶನದಲ್ಲಿ ಬರೆದು, ಯುನಿಕೋಡ್ ತಂತ್ರಾಂಶದಲ್ಲಿ ಟೈಪ್ ಮಾಡಿ, ಎ–4 ಸೈಜಿನಲ್ಲಿ ಹಾರ್ಡ್ ಕಾಪಿಯನ್ನು ಡಿಲಕ್ಸ್ ಬೈಂಡ್ ಮಾಡಿಸಿ 3 ಪ್ರತಿಗಳನ್ನು ಸಾಫ್ಟ್ ಕಾಪಿಯೊಂದಿಗೆ ಲಿಖಿತ ಪರೀಕ್ಷೆಗೆ ಎರಡು ವಾರಗಳಿಗೆ ಮುನ್ನ ಮಹಾವಿದ್ಯಾಲಯ/ವಿಶ್ವವಿದ್ಯಾಲಯಕ್ಕೆ ಸಲ್ಲಿಸುವುದು. ಮಹಾವಿದ್ಯಾಲಯಗಳಲ್ಲಿರುವ ಅಧ್ಯಾಪಕರುಗಳು ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಸಮಸಂಖ್ಯೆಯಲ್ಲಿ ಮಾರ್ಗದರ್ಶನ ಮಾಡುವುದು. ವಿಶ್ವವಿದ್ಯಾಲಯದ ಸೂಚನೆ/ಸುತ್ತೋಲೆ ಹಾಗೂ ನಿಯಮಾವಳಿಗಳಂತೆ ಅಂಕಗಳನ್ನು ತುಂಬುವುದು. (40 ಅಂಕಗಳಿಗೆ ಸಂಪ್ರಬಂಧ ಹಾಗೂ ಹತ್ತು ಅಂಕಗಳಿಗೆ ಮೌಖಿಕ ಪರೀಕ್ಷೆಯನ್ನು ನಡೆಸುವುದು)

VIDYASANGAMA

RANI CHANNAMMA UNIVERSITY, BELAGAVI

Vidyasangama, N.H. 4, Belagavi- 591156. Karnataka State

B. A. SOCIOLOGY SYLLABUS

(First and Second year)

NEP-2020

With Effect from

the Academic Year 2021- 2022

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Board of Studies in Sociology (UG)

Sl. No.	Name of the Members	Designation
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3	**Dr. Ruqqia Hashmi** Assistant Professor Anjuman Arts, Science and Commerce College, Managuli Road, P.B. No. -10 Vijayapur	Member

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NEP 2020 – UG SOCIOLOGY: Syllabus				
SEM	**Paper**		**Title of paper**	**Credits**
1	DSC -1		Understanding Sociology	3
	DSC -2		Changing Social Institutions in India	3
	OE-1		OE 1.1: Indian Society: Continuity and Change **or** OE 1.2: Sociology of Everyday Life **or** OE 1.3: Sociology of Mass Media	3
2	DSC -3		Foundations of Sociological Theory	3
	DSC -4		Sociology of Rural Life in India	3
	OE-2		OE 2.1: Society through Gender Lens **or** OE 2.2: Social Development in India **or** OE 2.3: Sociology of Health Care	3
3	DSC-5		Social Stratification and Mobility	3
	DSC-6		Sociology of Urban Life in India	3
	OE-3		OE 3.1: Sociology of Youth **or** OE 3.2: Sociology of Tourism Management **or** OE 3.3: Social Welfare and Social Policy In India	3
4	DSC-7		Sociology of Marginalized Groups	3
	DSC-8		Population and Society	3
	OE-4		OE 4.1: Sociology of Leisure **or** OE 4.2: Sociology of Food Culture **or** OE 4.3: Current Social Problems	3

DSC: Discipline Specific Core
DSE: Discipline Specific Elective
SEC: Skill Enhancement
OE: Open Elective

Sociology Curriculum

Name of the Degree Program: BA

Discipline Core: Sociology

Year of implementation: 2021-22

Program Objectives:

1. Introduce the students to the basic concepts and processes in sociology to understand thesocial life.
2. Provide different perspectives of understanding the social life of people
3. Update the students with different fields of Sociology and latest developments in the field
4. Develop the skills to analyze, interpret and present today's social situation, developmentsand problems.
5. Critically appreciate the social construction of reality
6. Ability to examine, relate and connect theory with research
7. Equip the students to develop communication skills
8. Prepare the students to enter the professional field with ethical responsibility and knowledge as teachers, researchers, administrators, facilitators etc. by exercising intellectual autonomy

Prepare the students for their research dissertation.

Program Outcomes:

By the end of the program the students will be able to:

1. Think critically by exercising sociological imagination
2. Question common wisdom, raise important questions and examine arguments
3. Collect and analyze data, make conclusions and present arguments
4. Think theoretically and examine the empirical data
5. Skillfully Participate in Research Groups and market Research Firms
6. Serve in Development Agencies, Government Departments and Projects
7. Be a Social Entrepreneur, Community Worker, Survey Designer, Research Analyst, Social Statistician
8. Transfer Skills as a Teacher, Facilitator of Community Development
9. Competent to make a difference in the community

Assessment:

Weightage for assessments (in percentage)

Type of Course	Formative Assessment / IA	Summative Assessment
Theory	**40**	**60**
Practical	**-**	**-**
Projects	**-**	**-**
Experiential Learning (Internships etc.)	**40**	**60**

***Pedagogy:**

Pedagogy for student engagement is predominantly lectures. However, other pedagogies enhancing better student engagement to be recommended for each course. The list includes active learning/ course projects/ problem or project based learning/ case studies/self study like seminar, term paper or MOOC

- Experiential learning (activity- based learning)
- Micro projects Activity based learning
- Role Play Group discussion Micro projects

Assessment:

Every course needs to include assessment for higher order thinking skills (Applying/ Analyzing/ Evaluating/ Creating).

- Oral or written presentations to assess analysing capability, creativity and communication skills
- Presentationof micro projects Questionsasked andanswered
- Ability to analyze a social situation within the framework oftheory Assess the relevance of atheory in contemporaryterms

***For the Activities please refer the following the Books**

- Johnston, Josee and others 2017, Introducing Sociology: Using the Stuff of Everyday Life, Routledge, London
- McKinney, Kathleen and Barbara S Heys (Eds) 2009, Sociology Through Active Learning, 2nd Edition, Pine Forge Press, New Delhi
- White, Shelley K and others (Eds) 2015, Sociologists in Action on Inequalities, Sage, New Delhi

Semester 1

Title of the Course:

DSC 1 Understanding Sociology		DSC 2 Changing Social Institutions inIndia	
Number of Theory Credits	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	**42**	**3**	**42**

DSC 1 Understanding Sociology	
Total Contact Hours: 42	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Understand the nature and role of Sociology in a changing world
2. Comprehend the uniqueness of sociological imagination in the study of real world
3. Recognize different perspectives of perceiving the workings of socialgroups
4. Differentiate between sociology's two purposes - science and social reform
5. Express one's understanding of current social issues in oral and written forms

Semester 1

DSC 1: Understanding Sociology	42 Hrs
Unit – 1 Sociology as Science	**17**
Chapter No. 1 Sociology as a study of Groups and Social Interaction –Definition, Scope and Need; Sociology as Science Vs. Sociology as Social Reform **Chapter No. 2** Foci of Sociology: Social Institutions **Chapter No. 3** Sociological Eye (Randall Collins), Sociological Imagination Charles Wright Mills' distinction between trouble (*i.e. personal innature* and issue, i.e. *public in nature*) **Chapter No. 4.** Sociological Perspectives: Functionalist, Conflict, Symbolic Interactionist, Feminist	

Unit – 2 Culture and Socialization	14
Chapter No. 5. Culture: Definition and Elements of Culture; Comparison between Culture and Civilization; Acculturation: Robert Ezra Park's idea of Melting Pot; Cultural Contact, Cultural Shock, Counter Culture and Contra Culture **Chapter No. 6.** Global Culture: Globalization of Values; Cultural Imperialism **Chapter No. 7.** Emerging Issues in Culture: Consumer Culture, Children as Consumers, Cyber culture, Netiquette in the age of Digital Living and Digital Divide **Chapter No. 8** Socialization: Definition, Stages, Theories of Self: Charles Horton Cooley and George Herbert Mead	
Unit – 3 Social Change	**11**
Chapter No. 9 Meaning, Definitions and Features, Changes due to Industrialization, Rationalization, Globalization, Urbanization and Information Explosion **Chapter No. 10.** Consequences of Change: Changing age Structure of Societies: Technological Impact on Social Life; Changing Environment	

Text Books

- Abraham Francis (2006): Contemporary Sociology, Oxford University Press, New Delhi.
- Berger, P L 1963, Invitation to Sociology: A Humanistic Perspective, Doubleday, Garden City, N.Y
- Bottomore, T.B.: Sociology: A Guide to Problems and Literature. George Allen and Unwin, Bombay, India.
- Bruce, Steve, 2018, Sociology: A Very Short Introduction, 2nd edition, Oxford University Press, New York
- Corrigall-Brown, Catherine 2020, Imagining Sociology: An Introduction withReadings, 2nd Edition, Oxford University Press, Canada
- Davis Kingsley (1982): Human Society, Surfeit Publications, New Delhi.
- Davis, Kingsley 1949, Human Society, Macmillan, Delhi
- Ferrante, Joan 2013, Seeing Sociology: An Introduction, 3rd Edition, CengageLearning, USA
- Ferris, Kerry and Jill Stein, 2018, The Real World: An Introduction to Sociology,6th Edition, W W Norton, New York
- Giddens Anthony (2001): Sociology (4th Ed.), Blackwell Publishers, Cambridge, UK.
- Giddens, Anthony and Philip W Sutton, 2013, Sociology, 7th edition, Wiley IndiaPvt. Ltd. New Delhi
- Gisbert Pascual (1983): Fundamentals of Sociology, Orient Longmans, Bombay.
- Harlambos, M and R M Heald, 1980, Sociology: Themes and Perspectives, Oxford University Press, Delhi
- Ian Robertson (1980): Sociology, Worth Publishers, INC, New York 1980

- Inkeles, Alex 1987, What is Sociology? Prentice-Hall of India, New Delhi
- Jayaram, N 1989, Sociology - Methods and Theories, Macmillan India Ltd.Bangalore
- Jayaram, N. (1988): Introduction to Sociology, MacMilan, India, Madras.
- Johnson Harry M. (1995): Sociology: A Systematic Introduction, New Delhi : Allied Publishers
- Johnson, H M 1995, Sociology: A Systematic Introduction, Allied Publishers, New Delhi
- Lemert, Charles 2012, Social Things: An Introduction to the Sociological Life, Rowman and Littlefield Publishers, Maryland
- Macionis, John 2018, Sociology Global Edition, Pearson, England
- Mulagund, I C 2008 Readings in General Sociology, Srushti Prakashana, Dharwad
- Mulagund, I C 2008 Readings in Indian Sociology, Srushti Prakashana, Dharwad Ritzer, George and W W Murphy, 2020, Introduction to Sociology, 5th edition,
- Mulugund, I. C. (2008): Readings in General Sociology, Shrusti Prakashan, Dharwad.
- Ogburn and Nimkoff (1964): A Handbook of Sociology, Publishing House, Pvt. Ltd, Ram Nagar, New Delhi.
- Sage Publications, New Delhi
- Samuel Koenig (1960): Sociology- An Introduction to the Science of Society. Barnes and Noble, INC, New York
- Shankar Rao (2004): Sociology. S. Chand & Co. New Delhi.
- Sharma R. N. (1976): Principles of Sociology. Media Publishers and Promoters Ltd, Bombay.
- ಇಂದಿರಾ, ಆರ್ ೨೦೧೨ (ಪ್ರಧಾನ ಸಂಪಾದಕರು) ಸಮಾಜಶಾಸ್ತ್ರ(ವಿಷಯವಾರು ವಿಶ್ವಕೋಶ) ಕುವೆಂಪು ಕನ್ನಡ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ, ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ, ಮೈಸೂರು
- ಶ್ರೀನಿವಾಸ್ ಎಂ ಎನ್ (೨೦೧೮) ಆಧುನಿಕ ,ಭಾರತದಲ್ಲಿ ಸಾಮಾಜಿಕ ಬದಲಾವಣೆ, ಅನುವಾದ – ಇಂದಿರ, ಆರ್ (ಸಂ) ರಾಷ್ಟ್ರೀಯ ,ಭಾಷಾಂತರ ಪ್ರಾಧಿಕಾರ, ಮೈಸೂರು

References

Unit 1

- https://www.drrandallcollins.com/sociologicaleye A blog maintained by Randall Collins which gives the definition for Sociological Eye and many posts on examples
- http://sociological-eye.blogspot.com Another blog by Randall Collins
- https://us.sagepub.com/sites/default/Giles/upm-assets/109310_book_item_109310.pdf First chapter of a book published by SagePublications - available free on this website
- https://sites.middlebury.edu/utopias/files/2013/02/The-Promise.pdf First chapter of The Sociological Imagination
- https://www.imprs-demogr.mpg.de/courses/01ws/tsi.pdf On Intellectual Craftsmanship - Appendix to The Sociological Imagination, by C Wright Mills
- https://www.pearsonhighered.com/assets/samplechapter/1/4/0/8/1408269546.pdf Chapter 1 of Pearson book - good introduction to Sociological Imagination, Origins of Sociology, along with case studies. Contains useful reference and weblinks
- https://www.researchgate.net/publication/8332089_Imagining_The_Sociological_Imagination_The_biographical_context_of_a_sociological_classic This article from British Journal of Sociology is useful to contextualize the concept of sociological imagination

Unit 2

- https://www.britannica.com/topic/culture
- 3.2 The Elements of Culture– Sociology - Publishing Services https:// open.lib.umn.edu › sociology › chapter › 3-2-th…
- Elements of Culture | Introduction to Sociology - Lumen ... https:// courses.lumenlearning.com › sociology › chapter
- Acculturation | anthropology | Britannicahttps://www.britannica.com › ... › Sociology & Society
- Acculturation - Cambridge University Presshttps://www.cambridge.org › core › elements › acculturati…
- RobertE .P a r k-N e wWorldEncyclopediahttps://www.newworldencyclopedia.org › entry › Robert_E
- What Is Culture? | Introduction to Sociology – Brown-Weinstockhttps:// courses.lumenlearning.com › chapter › what-is-cult… https://courses.lumenlearning.com/boundless-sociology/chapter/theories-of-socialization/
- https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwix4ciCu9XyAhUQYysKHQP7BTEQFnoECCYQAQ&url=https%3A%2F%2Fopen.lib.umn.edu%2Fsociology%2Fchapter%2F4-2-explaining-socialization%2F&usg=AOvVaw16am_XfXgptAgUS04sdOUN
- https://www.newworldencyclopedia.org/entry/Information_explosion https://edisciplinas.usp.br/pluginfile.php/4408475/mod_resource/content/1/Lupton-Digital%20Sociology%282014%29.pdf https://www.grin.com/document/453828 An article on the impact of digital lifeon society from sociological perspective
- https://www.pewresearch.org/internet/2019/10/28/5-leading-concerns- about-the-future-of-digital-life/ https://blogs.ed.ac.uk/keywordsindigitalsociology/2020/01/09/the-digital- divide/
- https://www.webroot.com/in/en/resources/tips-articles/netiquette-and-online-ethics-what-are-they
- https://www.britannica.com/topic/netiquette https://blog.citl.mun.ca/instructionalresources/netiquette https://www.rasmussen.edu/student-experience/college-life/netiquette-guidelines-every-online-student-needs-to-know

Unit 3

- https://www.britannica.com/topic/social-change
- https://www.cpp.edu/~ddwills/courses/ant352/readings352/McDonaldization.htm
- http://web.simmons.edu/~chen/nit/NIT%2796/96-171-Larney.html On McDonaldization of Information
- https://www.encyclopedia.com/social-sciences/dictionaries-thesauruses-pictures-and-press-releases/mcdonaldization
- https://www.un.org/development/desa/undesavoice/feature/2017/04/32476.html
- https://www.unescap.org/our-work/social-development/ageing-societies

- https://www.who.int/news-room/fact-sheets/detail/ageing-and-health
- https://www.who.int/westernpaci6ic/news/q-a-detail/ageing-ageism
- https://academic.oup.com/gerontologist/article/41/5/576/596571
- https://saylordotorg.github.io/text_sociology-understanding-and-changing-the-social-world-comprehensive-edition/s23-social-change-and-the-environm.html
- https://courses.lumenlearning.com/sociology/chapter/social-change/
- https://www.britannica.com/topic/social-change/Conclusion
- http://philosociology.com/UPLOADS/_PHILOSOCIOLOGY.ir_Blackwell%20Encyclopedia%20of%20Sociology_George% 20Ritzer.pdf Blackwell Encyclopedia of Sociology, edited by George H Ritzer

Pedagogy: Group discussions, Role play, micro project, field visit

Suggested Activities

Unit 1: Sociology as a Science

1. A discussion can be conducted on Common sense explanation Vs Sociological Explanation on topics like reasons for poverty, literacy level, health status, divorce, arranged or love marriage and students can present their ideas.
2. Students can be asked to identify the differences between methods of study adopted in subjects like Physics or Chemistry in comparison with Sociology, list them and present
3. Students can be asked to Find the common methods of study adopted in subjects like Botany or Zoology and Sociology and Find commonalities or differences
4. Issues like social status, economic inequality, sharing of natural resources, language issues etc. can be assigned to group of students for discussion and presentation on how they can be analyzed from different sociological perspectives (Functional vs Conflict, Functional Vs Symbolic Interaction, Feminist Vs Functional for example)
5. Students can be encouraged to share their views on ideal qualities of a woman or man in India and it can lead to a discussion on how these qualities are socially constructed rather than inborn/natural/god given

Unit 2: Culture and Socialization

1. Students can be encouraged to observe social norms in two different social environments - one familiar and another unfamiliar. It is necessary that the social environments should be sufficiently public in nature and they can spend time observing and noting how people act, behave, how social space is maintained etc. They can note down different types of norms like obedient behaviour, authority, friendly behaviour etc. and write down the basis for their conclusion. Observation should be of at least 45-60 minutes duration

6. A discussion/assignment can be given to compare and contrast the ideas of melting pot principle of the USA and unity in diversity principle of India.
7. An exercise can be conducted to stimulate thinking and discussion among

students about the relationship between the way they dress and acculturation. For example, they can identify the changes in how men and women dress since last 75 years and differences in the level of acculturation and possible reasons for these differences.

8. Drama or role play can be enacted to illustrate the changing social values in the areas of social interaction (breakdown of caste barriers, for example), changes in relationship between women and men, or increasing importance of values like liberty, equality, fraternity and such other issues
9. Students can discuss in small groups about the use of cell phones among the youth and relate it to consumer culture. They can focus on issues like - increasing use of cell phones, increasing dependence on them, frequent exchange of old phones to new and the reasons for such behavior. Other commodities like branded dress, computers, fashion products etc. can be taken up depending on the situation. It can also be used introduce concepts like conspicuous consumption, traditional culture, anti-consumers, brand indifference etc to encourage further studies
10. Issues like gaming, online community, social media usage - their impact on identity and privacy in the life of modern youth can be taken up for discussion and presentation. Students can share their experiences related to the above topics and how it define their personality
11. Is there any difference between online world and real world? Should one use same set of rules and norms while interacting with friends, elders, younger ones in the online/real world? Can one be rude, harassing in the online world? Does the violence in online gaming, for example, a mirror of our real life expectations? Is there any difference between writing an Email/ paper application to ask for job interview? These are some examples for discussing about Netiquette.
12. To understand the theories of socialization, students can share their experiences related to - how they choose a new dress? Criteria used to buy a

    Vehicle or consumer goods like cell phone, write a report by observing and reporting on differences in expected behaviour of a six months child and one year old child.

Unit 3: Social Change

1. A comparative report writing can be assigned on why handloom cotton saris etc are costlier than industry produced clothes (both cotton and synthetic) by way of collecting opinion of the dealers, producers and consumers
2. Assign groups of students to observe, discuss and report on the working of a Darshini cafe, big restaurant/hotel and a street side tea shop in the context of rationalization and McDonaldization.
3. Make the students to express their dreams and aspirations about the type of place/community in which they wish to live when they grow up and ask them to identify the urban/rural elements that are absolutely essential
4. A project on loss of green/lung spaces in the normal area of residence of students

- like loss of Gomalas, parks, forests etc.

5. A project on crop pattern, tools used including fertilizers and pesticides, preferred crop, problems faced by the agriculturists in the students' place of residence or nearby village
6. A project in nearby village on how many elderly persons are living alone or with their partners but children have moved to urban areas and how they experience social life

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentation by students

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

Semester 1

DSC 2 Changing Social Institutions in India	
Total Contact Hours: 42	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Identify the new forms taken by institutions of family and marriage
2. Understand the role played by religion in modern world
3. Sensitize the students to the conflicting norms of secularism and living by one's religious beliefs
4. Appreciate the role of education and challenges in making educationaccessible to all
5. Recognize the social nature of economy and work
6. Grasp the opportunities offered by democracy and the threats it faces
7. Undertake micro research work and communicate the knowledge effectively

DSC 2: Changing Social Institutions in India	42 Hrs
Unit – 1 Family and Marriage	**16**
Chapter No. 1 Family - Definitions of Family and Household; Changing structure of family; changes in size and composition **Chapter No. 2** Weakening of Gender and Age Stratification - democratization of relationships: between spouses, parent-children; step-parenting **Chapter No. 3** Changes in care giving of children and elderly **Chapter No. 4** Marriage – Definition, changing patterns of marital relations- cohabitation, separation, divorce and remarriage. **Chapter No. 5** Changes in Age of Marriage, Marriage Decision Making and Regional Variations **Chapter No. 6** Decrease in number of Children and Voluntary Childlessness	
Unit – 2 Religion and Education	**13**
Chapter No. 7. Religion:- Definition; Secularization vs Resurgence of Religion in Modern World	

Chapter No. 8. Challenge of Diversity - Religious Freedom vs State Laws **Chapter No. 9.** Education: Definition; Education as Socialization; types of Education - formal and informal **Chapter No. 10.** Functional view - Manifest and Latent Functions; Conflict view- Education as tool for Perpetuating Inequality **Chapter No. 11.** Schooling and Life Chances (Max Weber's views) – increasing Enrolment Ratio **Chapter No.12.** Education and Employability - Technology and Digital Divide	
Unit – 3 Economic and Political Institutions	**13**
Chapter No. 13. Definitions of Economy and Work **Chapter No. 14.** Gender Stratification in work and its Feminization **Chapter No. 15** Job insecurity, Unemployment; Outsourcing – opportunities and threats **Chapter No. 16** Definitions of Political Institution, Government, Governance and State **Chapter No. 17** Status of Democracy in India : Social Reality **Chapter No. 18** Challenges: Militancy, Fundamentalism, Regionalism	

Text Books

- Ahuja Ram (1993): Indian Social System, Rawat pub. Jaipur.
- Ambedkhar B.R Annihilation of Caste
- Berger, P L 1963, Invitation to Sociology: A Humanistic Perspective, Doubleday, Garden City, N.Y
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- Beteille Andre (1992): Backward Classes in Contemporary India, New Delhi: OUP
- Bose, N.K. (1967): Culture and Society in India .Bombay: Asia Publishing House.
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- Chaudhuri Buddhadeb (1991): Tribal Development in India. New Delhi: Inter India Publications.
- Davis, Kingsley 1949, Human Society, Macmillan, Delhi
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- Dube. S.C (1990): Indian Society, nation book trust, New Delhi. Inequality. Meerut: Folklore Institute.
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- Gouda, M Sateesh, Khan, A G and Hiremath, S L 2019, Spouse Abusal in India: A Regional Scenario, GRIN Publishing, Munich
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- Indira R 2011, Themes in Sociology of Indian Education, Sage Publications, Delhi Inkeles, Alex 1987, What is Sociology? Prentice-Hall of India, New Delhi
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- Karve, Irawati. (1961): Hindu Society: An Interpretation. Poona: Deccan College.
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- Mandelbaum (1970): Society in India Bombay. Popular Prakashan.
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- Ritzer, George and W W Murphy, 2020, Introduction to Sociology, 5th edition,Sage Publications, New Delhi
- Satya Murthy T.V. (1996): Religion, Caste, Gender, and Culture Contemporary India. New Delhi: OUP
- ಇಂದಿರಾ, ಆರ್ ೧೯೯೫ ,ಭಾರತೀಯ ಸಮಾಜ, ಕನ್ನಡ ಪುಸ್ತಕ ಪ್ರಾಧಿಕಾರ, ಬೆಂಗಳೂರು
- ನಾಗೇಶ್, ಹೆಚ್ ವಿ ೧೯೯೪, ಕುಟುಂಬ, ಕನ್ನಡ ಪುಸ್ತಕ ಪ್ರಾಧಿಕಾರ, ಬೆಂಗಳೂರು
- ನಾಗೇಶ್, ಹೆಚ್ ವಿ ೨೦೦೦ (ಪರಿಷ್ಕೃತ ಮುದ್ರಣ) ಗ್ರಾಮಾಂತರ, ಕನ್ನಡ ಪುಸ್ತಕ ಪ್ರಾಧಿಕಾರ, ಬೆಂಗಳೂರು
- ಮುಳುಗುಂದ, ಐ ಸಿ ೨೦೧೭ ,ಭಾರತೀಯ ಸಮಾಜದ ಅಧ್ಯಯನ, ಸೃಷ್ಟಿ ಪ್ರಕಾಶನ, ಧಾರವಾಡ
- ಶಂಕರ ರಾವ್, ಚ ನ ೨೦೧೨ (ಪರಿಷ್ಕೃತ ಆವೃತ್ತಿ) ,ಭಾರತೀಯ ಸಮಾಜ, ಜಯ,ಭಾರತ ಪ್ರಕಾಶನ, ಮಂಗಳೂರ

References

Unit 1: Family and Marriage

- https://courses.lumenlearning.com/wmopen-introtosociology/chapter/marriage-and-family/
- https://courses.lumenlearning.com/boundless-sociology/chapter/recent- changes-in-family-structure/
- https://www.thehindu.com/news/national/how-the-nature-of-indian-families-is-changing/article28281107.ece
- https://www.bbc.com/news/world-asia-india-54053091 Why Indians Continue to Live in Joint Families
- https://opentextbc.ca/introductiontosociology/chapter/chapter14-marriage- and-family/
- https://www.asanet.org/sites/default/Giles/savvy/introtosociology/Documents/ActivitiesForExploringFamilyBobGreene.html This site by American Sociological Association provides many examples for conducting activities relatedto family and marriage
- http://rchiips.org/nGhs/factsheet_NFHS-5.shtml Data of National Family and Health Survey-5 is available for every district in this website

Unit 2: Religion and Education

- https://www.pewresearch.org/fact-tank/2018/06/29/5-facts-about-religion-in-india/
- https://www.pewresearch.org/fact-tank/2015/04/21/by-2050-india-to-have- worlds-largest-populations-of-hindus-and-muslims/
- https://www.pewresearch.org/fact-tank/2018/06/29/5-facts-about-religion-in-india/
- https://www.pewresearch.org/fact-tank/2015/04/02/7-key-changes-in-the-global-religious-landscape/
- https://www.pewresearch.org/search/secular Women in many countries face problem about their dress by religious groups/secular groups
- https://en.unesco.org/news/unesco-launches-2020-state-education-report- india-vocational-education-Girst Link to the complete report available along with resources like video etc.

Unit 3: Economic and Political Institutions

- https://courses.lumenlearning.com/cochise-sociology-os/chapter/women-in- the-workplace/
- https://www.orfonline.org/research/rewriting-the-rules-women-and-work-in-india-47584/
- https://www.bbc.com/worklife/article/20210712-paternity-leave-the-hidden-barriers-keeping-men-at-work
- https://www.nytimes.com/2020/02/19/parenting/why-dads-dont-take- parental-leave.html
- https://askanydifference.com/difference-between-government-and-governance/ https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1468-2397.2008.00575.x How does economic globalisation affects the welfare state?
- https://www.bertelsmann-stiftung.de/Gileadmin/Giles/BSt/Publikationen/GrauePublikationen/NW_Globalisation_and_the_Welfare_State.pdf

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentation by students

Suggested Activities

Unit 1: Family and Marriage

1. NFHS data related to Karnataka can be used to illustrate the change in family size over a period of time. Similarly, reports cited in Suggested Internet Resources can be used to involve students in analysis of secondary data
2. Students can interview a small sample of 10-15 persons, in the neighborhood of their residence and elicit answers for two questions:

   (a) Between arranged and love marriages, which do they prefer? (b) Reason for their answer to (a). Different groups of students are assigned to interview people of different age groups. Students should collate the data they have collected and present it as a small project report. Size of the report can vary from 750-2000 words, depending on the number of students involved and they should use appropriate tables and charts to present their data.
3. Activity 1 can be carried out with by varying questions related to respondents' opinions on age of marriage, divorce, separation and cohabitation etc. associated with the institution of family

Unit 2: Religion and Education

1. Students can be made to collect information about the level of participation in religious organizations and programmes among 15-20 young persons (as an individual or group activity) and submit their data as a report that can vary from 750-2000 words with appropriate tables and charts
2. Debates about State interfering in religious beliefs associated with social institutions like family, marriage, divorce, property rights are seen since many decades in India. Students can conduct a micro-study on common people's opinion about these issues, present their data in the class room along with a report
3. In the Suggested Internet Links, UNESCO Report on Education in India 2020 is provided. Summary/data sheets can be used to cover topics like literacy level, enrolment ratio, gender and education etc. Similarly State of Education - India

can be fruitfully utilized by students to present their understanding of issues and reasons for lack of quality education in India

4. A survey of students/youth of college can be conducted to understand their concerns about their opportunities in employment market by asking four-Jive questions - sex, age, education level and opinion, for example.
5. A report can be prepared by students about the problems faced by special children at different levels of schools/college and present it in the context of inclusive education policy
6. Movies like Sarkari hiriya prathamika shaale can be screened/viewed and students can participate in discussion or present in writing their opinions

Unit 3: Economic and Political Institutions

1. Indian amended the Maternity Benefit Act in 2017 extending many benefits to women workers, including 6 months maternity leave. How has this amendment benefited women in private sector, can be examined by students and discuss whether this act is beneficial to women's employment opportunities in the long run
2. https://www.nytimes.com/2020/02/19/parenting/why-dads-dont- take-parental-leave.html This article in New York Times reports various reasons for fathers not opting for paternal leave while it is "mandatorily" expected that mothers should utilise the facility. A discussion can be held in the class room to understand the sociological roots of this behaviour difference in men and women, pressure of expectations, gender division of labour. Teachers can present the news report as a summary or reading sheet to facilitate the discussion. One more article which can be used is: https://www.bbc.com/worklife/ article/20210712-paternity-leave-the-hidden-barriers-keeping-men- at-work
3. BPOs provide ample opportunities for young women and men to work in India. It is a growing market and onsite training are given for new recruits. It is also an area where job insecurity is very high. Students can interview a few employees to understand the opportunities and threats they face in this area of work.
4. Seasonal unemployment is very common for agricultural laborers. How do laborers cope with this situation and the problems they encounter can be documented by students
5. Migration from rural to urban areas is increasing. Experience of these migrant laborers can be reported as case study
6. https://supplychaindigital.com/supply-chain-2/indias-bpo-market-could-reach-dollar250-billion
7. Every rural/urban area has its own elected local body. Students can find out the difference between government and governance by documenting how people's representatives are elected (government) and the level of adherence to rules and regulations by these representatives and bureaucrats (governance) by doing social audit of public infrastructure like roads, availability/supply of water, response to complaints by publicetc.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

Title of the Course: Any one open elective paper

Semester 1

Title of the Course:

OE 1.1 Indian Society: Continuity and Change		OE 1.2 Sociology of Everyday Life		OE 1.3 Sociology of Mass Media	
Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester
3	39	3	39	3	39

B.A. Semester I - Open Elective 1.1

OE 1.1 Indian Society: Continuity and Change	
Total Contact Hours: 39	Course Credits: 3
Formative Assessment Marks: 40	Summative Assessment Marks: 60
Duration of ESA/Exam: 2 hours	

Course Outcomes:

1. Analyze the nature and direction of change in Indian society, basically from traditional to modernity of Social Institutions.
2. Understand the Indicators of change and participation in democratic process.
3. Examine the changing conditions of socially excluded groups through movement for social justice.
4. Critically look at the two way street of globalization and its impact on Indian society and communicate in clear terms
5. Communicate critical observations with clarity.
6. The students familiar with characteristics of Indian Society.
7. Know the changing face of Indian system of Marriage & Family.
8. Highlight the process of Social Change and Impact of Globalization.

OE 1.1- Indian Society: Continuity and Change	39 Hrs
Unit – 1 Traditions in Transition	13
Chapter 1: The Nature and Direction of Change in Indian Society	
Chapter 2: The Changing Face of Indian Social Institutions: Family, Caste, Polity and Economy	
Chapter 3: The Rural-Urban Divide: Infrastructure, Education, Health and Local Governance	

Unit – 2 Movements for Social Justice	13
Chapter No. 4: A Background View: Role of the Constitution of India and Legislation **Chapter No. 5:** Backward Classes and Dalit Movements **Chapter No. 6:** New Social Movements: LGBTQ, Civil Rights, Ecological, Anticorruption Movements **Chapter No. 7:** Opportunities for Social Mobility for Scheduled Castes, Scheduled Tribes and Women	
Unit – 3 India in the Globalisation Era	**13**
Chapter No. 8: Globalization and Indian Culture: Impact on Food Habits, Language, Ideas and Life Styles **Chapter No. 9:** Globalization and Social Values: Impact on Youth and their World View, Changing Landscape of Love and Marriage, Impact on Familial Relationships and Understanding Others	

Note: This OE Papers Shall be taught by Sociology Teachers

Text Books

- Ahuja, Ram 1993, Indian Social System, Rawat Publications, Jaipur
- Ambedkar, B R 1948, The Untouchable: Who are they and Why they become Untouchable? Amrith Book Co., New Delhi
- Beteille, Andre 1965, Caste, Class and Power, University of California Press,Berkeley
- Das, Veena 2004, Handbook of Indian Sociology, Oxford University Press, New Delhi
- Dube, S C 1991, Indian Society, National Book Trust, New Delhi
- Gouda, M Sateesh, Khan, A G and Hiremath, S L 2019, Spouse Abusal in India: A Regional Scenario, GRIN Publishing, Munich
- Mandelbaum, D G 1970, Society in India, University of California Press, Berkeley Mulagund, I C 2008 Readings in Indian Sociology, Srushti Prakashana, Dharwad Shah, A M 1973, The Household Dimension of Family in India, Orient Longman, New Delhi
- Singh, Yogendra 1984, Moodernisation of Indian Tradition, Rawat Publications,Jaipur
- Srinivas, M N 1992, Social Change in Modern India, Orient Longman, New Delhi Srinivas, M N 1962, Caste in Modern India and Other Essays, Asia Publishing House, Bombay
- ಇಂದಿರಾ, ಆರ್ ೧೯೯೫ ,ಭಾರತೀಯ ಸಮಾಜ, ಕನ್ನಡ ಪುಸ್ತಕ ಪ್ರಾಧಿಕಾರ, ಬೆಂಗಳೂರು
- ಶಂಕರ ರಾವ್, ಚ ನ ೨೦೧೨ (ಪರಿಷ್ಕೃತ ಆವೃತ್ತಿ) ,&ರತೀಯ ಸಮಾಜ, ಜಯ,&ರತ ಪ್ರಕಾಶನ, ಮಂಗಳೂರು
- ಶ್ರೀನಿವಾಸ್ ಎಂ ಎನ್ (೨೦೧೮) ಆಧುನಿಕ ,ಭಾರತದಲ್ಲಿ ಸಾಮಾಜಿಕ ಬದಲಾವಣೆ, ಅನುವಾದ –

Reference Works:

- https://www.un.org/development/desa/youth/wp-content/uploads/sites/21/2019/08/WYP2019_10-Key-Messages_GZ_8AUG19.pdf https://www.intechopen.com/chapters/38348 Globalisation and Culture: TheThree H Scenarios
- https://www.business-standard.com/article/education/india-s-gross- enrolment-in-higher-education-rose-marginally -in-2019-20-121061001249_1.html
- https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/04/Indigenous-Languages.pdf
- http://employmentnews.gov.in/newemp/MoreContentNew.aspx?n=SpecialContent&k=53 An article on Yoga and its world wide popularity https://www.wionews.com/south-asia/yoga-indias-new-cultural-tool-of-global-dominance-17104
- https://theprint.in/world/indian-food-fourth-most-popular-in-the-world-a- study-of-cuisine-trade-Ginds/283119/

Pedagogy: Field work, micro projects, group discussion, role play, written/oral presentation by students

Suggested Activities

Unit 1: Traditions in Transition

1. Students can be made to interview their grandparents, elderly people in their family/neighborhood to map the changes in social norms and values.
2. A project on dynamics of decision making in family related to spending money, marriage, education etc can be done and presented in the class room. Students should support their conclusions by way of instances they observed in theirfamilies and highlight the change and continuity
3. Data sheets can be used to discuss about the rural-urban divide and identify the reasons for the gap
4. Students can narrate/document their own experiences with respect to availability of infrastructure, health facilities, educational facilities etc. in their own villages or places of residence
5. A project on participation of common people in the local governance

Unit 2: Movements for Social Justice

1. "10th AISHE results for 2019-20 show that Gross Enrolment Ratio in the age group of 18-23 years as 27.1%. At Undergraduate level, the highest number of students at 32.7% is enrolled in Arts/Humanities/Social Sciences courses followed by Science (16 per cent), Commerce (14.9) and Engineeringand Technology (12.6). Whereas, at Ph.D. level, maximum number of students are enrolled in Engineering and Technology stream followed by Science." Students can discuss about - How can we understand this data in terms of social justice and accessibility to higher education? Does this mean that 27.1% are privileged? Or, can we say that there is differential privilege among the students of arts/humanities, Science and Commerce?

6. Students can be assigned to write a report of about 500-750 words on any one

social movement like LGBTQ activists, environmentalists, Dalit activists etc. with emphasis on objectives and social impact

Unit 3: India in the Globalization Era

1. Preferences and changes in food habits of people belonging to different age groups can be mapped to identify the factors responsible for changing food Habits or dressing styles and presented for discussion in the class room by students
2. Yoga has become very popular across regions, communities and religions. Students can discuss and present their conclusions on, whether the spread of yoga can be called as globalization? Also they can discuss about the nature of this phenomena (spiritual or physical exercise or choice of healthy life style) and its impact on Yoga as originally taught by ancient Indians. Similar exercises can be conducted on Ayurveda, Indian music, Indian food etc.
3. Students can discuss, note and present their reasons for extent and intensity of influence of English, Hindi, Tamil and Telugu languages on Kannada by way of analyzing their usage in day to day language, in television programs etc. and its impact on Kannada as a language
4. "Family as an institution is changing towards more equalitarian relationships" - students can be asked to assess this statement in the background of their personal experience, write and present their report
5. According to a study by 2050, India's elderly population will rise to 13% and will not be a young nation. In this context, teacher can elicit students' opinion about what social values should govern our behaviour towards elderly and aged, to understand their world view
6. We are living in an era of internet - physically distant yet socially connected. A group discussion can be conducted to understand the extent of acceptance/non-acceptance of Others (not belonging to one's group)

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

Semester I

Open Elective 1.2

OE: 1.2 Sociology of Everyday Life	
Total Contact Hours: 39	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Look at the familiar world from a new perspective
2. Understand the social Life and Experiences
3. Able to appreciate how our social world is constructed
4. Able to communicate effectively in written and oral formats

OE 1.2: Sociology of Everyday Life	39 Hrs
Unit – 1 Introduction	**14**
Chapter No. 1: Sociology as a study of Social Interactions and its Need Social processes:- Nature, types: Cooperation, Competition, accommodation, assimilation. **Chapter No. 2:** Everyday Life - Meaning; Why Study Everyday Life? (Contributions of Erving Goffman and Anthony Giddens); Role of Socialization in establishing habits and practices- action, thinking and feeling **Chapter No. 3:** Social Institutions as Established Practices and Customs - Definition and Elements **Chapter No. 4:** Challenges and Problems of Everyday Life	
Unit – 2 Self and Society	**13**
Chapter No. 5: Definition of Situation (William Isaac Thomas' Principle) **Chapter No. 6:** The Looking-Glass Self; Relation between Individual and Society **Chapter No. 7:** Role of Social Media in Constructing Self and Identity	

Unit – 3 Culture in Everyday Life	12
Chapter No. 8: Definition of Culture; Types of Culture: High Culture, Popular Culture, Recorded Culture and Lived Culture	
Chapter No. 9: Mass Media and Everyday Life	
Chapter No. 10: Globalisation and Cultural Diffusion	

Note: This OE Papers Shall be taught by Sociology Teachers

Text Books:

- Berger, P L 1963, Invitation to Sociology: A Humanistic Perspective, Doubleday, Garden City, N.Y
- Bruce, Steve, 2018, Sociology: A Very Short Introduction, 2nd edition, Oxford University Press, New York
- Corrigall-Brown, Catherine 2020, Imagining Sociology: An Introduction with Readings, 2nd Edition, Oxford University Press, Canada
- Coser, Lewis 1977 Masters of Sociological Thought, Harcourt BraceJovanovich,New York
- Davis, Kingsley 1949, Human Society, Macmillan, Delhi
- Ferrante, Joan 2013, Seeing Sociology: An Introduction, 3rd Edition, CengageLearning, USA
- Ferris, Kerry and Jill Stein, 2018, The Real World: An Introduction to Sociology,6th Edition, W W Norton, New York
- Giddens, Anthony and Philip W Sutton, 2013, Sociology, 7th edition, Wiley India Pvt. Ltd. New Delhi
- Harlambos, M and R M Heald, 1980, Sociology: Themes and Perspectives, Oxford University Press, Delhi
- Inkeles, Alex 1987, What is Sociology? Prentice-Hall of India, New Delhi
- Jayaram, N 1989, Sociology - Methods and Theories, Macmillan India Ltd. Bangalore
- Johnson, H M 1995, Sociology: A Systematic Introduction, Allied Publishers, New Delhi
- Lemert, Charles 2012, Social Things: An Introduction to the Sociological Life, Rowman and Littlefield Publishers, Maryland
- MacIver R M and Page C M 1974, Society: An Introductory Analysis, Macmillan India Ltd, New Delhi
- Macionis, John 2018, Sociology Global Edition, Pearson, England
- Merton, R K 1968, Social Theory and Social Structure, The Free Press, Glencoe Mulagund, I C 2008 Readings in General Sociology, Srushti Prakashana, Dharwad Mulagund, I C 2008 Readings in Indian Sociology, Srushti Prakashana, Dharwad Ritzer, George and W W Murphy, 2020, Introduction to Sociology, 5th edition, Sage Publications, New Delhi
- ಮುಳುಗುಂದ, ಐ ಸಿ ೨೦೧೭ ಪಾಶ್ಚಾತ್ಯ ಸಾಮಾಜಿಕ ಚಿಂತನೆ, ಸೃಷ್ಟಿ ಪ್ರಕಾಶನ, ಧಾರವಾಡ
- ಮುಳುಗುಂದ, ಐ ಸಿ ೨೦೧೮ ,&ರತದಲ್ಲಿ ಗ್ರಾಮೀಣ ಅಽ$ವೃದ್ಧಿ, ಸೃಷ್ಟಿ ಪ್ರಕಾಶನ, ಧಾರವಾಡ
- ಶಂಕರ ರಾವ್, ಚ ನ ೨೦೧೨ ಸಮಾಜಶಾಸ್ತ್ರ, ದರ್ಶ ನ ,&ಗ ೨, ಜಯ,&ರತ ಪ್ರಕಾಶನ, ಮಂಗಳೂರು
- ಶಂಕರ ರಾವ್, ಚ ನ ೨೦೧೨ (ಪರಿಷ್ಕೃತ ಆವೃತ್ತಿ) ,ಭಾರತೀಯ ಸಮಾಜ, ಜಯ,ಭರತ ಪ್ರಕಾಶನ, ಮಂಗಳೂರು

Reference Works:

Suggested Internet Resources

http://www.csun.edu/~hbsoc126/soc1/Charles%20Horton%20Cooley.pdf
https://www.khanacademy.org/test-prep/mcat/individuals-and-society/self- identity/v/charles-cooley-looking-glass-self https://www.oxfordbibliographies.com/view/document/obo-9780199756384/ obo-9780199756384-0186.xml An article on Habit
https://courses.lumenlearning.com/alamo-sociology/chapter/reading-pop- culture-subculture-and-cultural-change/ https://en.wikisource.org/wiki/Body_Ritual_among_the_Nacirema This is an excellent article on how a group of people take care of their body everyday oftheir life.

Pedagogy: Field work, micro projects, group discussion, role play, written/oral presentation by students

Suggested Activities

Unit 1: Introduction

1. Students can be asked to answer a simple question - Who am I? They have to write describe themselves in 20 words/sentences. Students can write in any order, logic or importance. Their answers can be utilized to demonstrate how we are socialized by our interaction with others, mass media, family and educational system. Privacy of students has to be respected, however.
2. Students can be sent to a book store and asked to browse through children's books and identify how those stories depict different roles - description of the hero/heroine, villain/vamp, beggar or king
3. Students can visit a kids clothing store and record gender classification of dresses based on - colour, design, style and fabric.

Unit 2: Perception is Reality

1. Think of a Self Fulfilling Prophecy you have experienced. Does it confirm Thomas' theorem? Illustrate with current examples
4. Students can share their thoughts about how they feel and become conscious about oneself when they (a) wear a new dress, (b) dress out of their way, (c) dress outrageously
5. Students can list the reasons for choosing their display picture in their social media accounts (any one or two accounts) and a discussion can follow about the need for validation by others, especially strangers

Unit 3: Culture in Everyday Life

1. This is an activity for group discussion. Students are given few statements and they have to discuss among themselves and arrive at unanimous opinionabout whether following can be called as culture or not:
   a. Classical dance and music constitutes culture
   b. Folk literature is a part of culture
   c. Pick pocketing is part of culture
   d. Newspapers and magazines are part of culture
   e. Killing is an art; therefore it is part of culture

Please note: Students should be clearly cautioned that, if they do not arrive at unanimous decision, then the whole group will stand to lose points in evaluation. (This is an exercise which demonstrates the leadership, ability to adjust to the group's opinion, convincing capacity of students apart from reasoning, logic and presentation skills. This can also be used as an example to illustrate the concept of Over-socialization given by Durkheim).

2. Can we call the popularity of tandoori chicken or vada pav an example for globalization? Students should be encouraged to give their reasons for their answer (https://www.timesnownews.com/the-buzz/article/this-dish-has-topped-the-global-list-of-most-searched-indian-food/548297 This news item can be used to generate discussion)

3. In the theatre actors routinely perform different roles. Do pubic Figures, celebrities, political parties, or corporate bodies, in the media, alter their role playing according to the context or audience?

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of Five principles for both activities and written test

Semester I

Open Elective 1.3

OE 1.3 SOCIOLOGY OF MASS MEDIA	
Total Contact Hours: 39	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes (COs):

At the end of the course the student should be able to:

- Analyze the relationship between mass media and society and role of Mass Media in the Development of Society.
- The learner will be familiarize with nature, characteristics and functions of mass media in modern society and able to develop analytical capacity.
- Students will be provided Sociological Perspective on the role of Mass Media in Indian Society.
- The course seeks to improve the employability of students who are willing to make career as Journalists, Reporters editors and Freelance Writers

OE 1.3: Sociology of Mass Media	39 Hrs
Unit – 1 Introduction to Mass Media	**13**
Chap 1 Meaning**.** Definitions, Characteristics and functions of mass media **Chap 2.** Evolution of mass media and digital revolution in India **Chap 3.**Importance of Mass media and communication	
Unit – 2 Types of Mass media	**13**
Chap 4. Typology of Media **Chap 5**. Print Media: Merits and demerits **Chap 6.** Electronic Media: Merits and demerits, digital divide **Chap 7.** Social Media: Types and Implications	
Unit- III Mass Media and society	**13**
Chap 8: Impact of media on culture, education, consumer behaviour and politics Chap 9: Impact of Globalization and Mass Media **Chap 9:** Abuse of Media, commercialization of news & media imperialism **Chap 10**: Ethics and Social Responsibility of Mass media, Media, technology and culture	

Note: This OE Papers Shall be taught by Sociology Teachers

Suggested Internet Resources

Unit 1 : Introduction to Mass Media

- https://sendpulse.com/support/glossary/mass-media
- http://indiannewsmediawatch.blogspot.com/2015/11/mass-media-definition-types-and-nature.html
- https://www.crises-control.com/blogs/the-evolution-of-mass-communication/
- https://www.virtualkollage.com/2019/03/the-advantages-or-importance-of-massmedia.html
- http://www.universityofcalicut.info/cuonline/exnotif/ex4235.pdf

Unit 2 : Types of Mass Media

- https://sendpulse.com/support/glossary/mass-media
- https://www.ssim.ac.in/blog/role-of-media-in-society/
- http://csjournals.com/IJITKM/PDF%208-1/3.%20Manvi.pdf
- https://journals.sagepub.com/doi/full/10.1177/0263276418808592
- https://en.wikipedia.org/wiki/John_Thompson_(sociologist)

Unit 3 : Media and Society

- https://www.profseema.com/social-media-marketing/what-is-the-impact-of-media-on-society/
- https://www.simplilearn.com/real-impact-social-media-article
- https://www.ssim.ac.in/blog/role-of-media-in-society/
- https://www.researchgate.net/publication/322676918_ROLE_AND_IMPACT_OF_MEDIA_ON_SOCIETY_A_SOCIOLOGICAL_APPROACH_WITH_RESPECT_TO_DEMONETISATION
- https://reports.weforum.org/human-implications-of-digital-media-2016/section-3-impact-of-digital-media-on-individuals-organizations-and-society/

Reference Books

- Allan, Wells. (1979), Mass Media and Society. Mayfield, California.
- Aveseh, Asough. (2012). Social Media And Ethics - The Impact of Social Media on Journalism Ethics,. Center for International Media Ethics (CIME).
- Bausinger, H. (1984). Media, technology and daily life. Media, Culture and Society, 6, 343-351.
- Berger, Asa Authur (1998). Media Analysis Techniques. Sage Publication
- Brandtzaeg, P. B. (2012). Social networking sites: Their users and social implications—A longitudinal study. Journal of Computer-Mediated Communication, 17(4), 467–488.
- Chatterjee. R.K. (1978), Mass Communication. NBT, New Delhi.
- Donner, J. (2015). After access: Inclusion, development, and a more mobile Internet. Cambridge, MA: MIT Press.
- Downing, John, Mohammadi Ali and Srebemy-Mohammadi (1992). Questioning the Media: A Critical Introduction. New Delhi, Sage
- Evans, Lewis and hall, Staurt (2000). Visual Culture: The Reader. Sage Publications
- Grossberg, Lawrence et al (1998). Media-Making: Mass Median in a Popular Culture. Sage Publications
- Hamelink, C. and Nordenstreng, K. (2007) 'Towards Democratic Media Governance'. In E. de Bens (ed.), Media Between Culture and Commerce. Bristol: Intellect.
- Johnson, K. (2000), Television and Social Change in Rural India, London: Sage.
- Linz, D., Penrod, S., &Donnerstein, E. (1986). Issues bearing on the legal regulation of violent and sexually violent media. Journal of Social Issues, 42(3), 171-193. [52]
- Murthy, D. (2013). Twitter: Social Communication in the Twitter Age. Cambridge: Polity Press
- Potter, James W (1998). Media Literacy. Sage Publications
- Pradip N. Thomas (eds.) (2004). Who Owns the Media? Zed Books, London.
- Shabnoor, S. Tajinder. (2016).Social Media its Impact with Positive and Silverstone, Rogers (1999). Why Study Media? Sage Publications

- Willis, S. and Tranter, B. (2006). Beyond the 'digital divide': Internet diffusion and inequality in Australia. Journal of Sociology
- Yigit, F. &Tarman, B. (2013). The Impact of Social Media on Globalization, Democratization and Participative Citizenship, Journal of Social Science Education, vol. 12, No 1, 75-80.

Suggested Activities

Unit 1: Introduction to Mass Media

1. Students can be encouraged to prepare a profile of news papers being published in their district
2. Group Discussion can be conducted on nature and functions of mass media
3. Group Discussion can be conducted on importance of mass media and communication
4. Students can be asked to find out and introspect the negative impact of mass media
5. Students can be asked to present a synoptic view on emergence of media houses and globalization
6. Students can be asked to discuss how media influences voting behavior and formation of public opinion

Unit 2: Types of Mass Media

1. Students can be encouraged to visit News Paper printing press/ Radio Stations to gain firsthand knowledge regarding the operation of Mass media
2. Group Discussion can be organized on types and usage of electronic media
3. Themes like relative merits of electronic and print media can be assigned to group of students for discussion
4. Students can be encouraged to present seminar on demerits of electronic and print media
5. Students can be asked to discuss the impact of digital divide
6. Students can be encouraged to present seminar on evolution of mass media and digital revolution in India
7. Students can be encouraged to write a Report on the college /local events, functions and activities

Unit 3: Media and Society

1. Students can be encouraged to discuss the impact of media on culture and education
2. Discussion can be conducted on issues like abuse of media and commercialization of mass media
3. Students can be encouraged to present seminar on role of mass media in promoting consumerism
4. Students can be asked to discuss how media influences voting behavior and formation of public opinion
5. A group discussion can be arranged on how media influences online purchases and virtual marketing.
6. Issues like role of media in echoing the grievances and demands of people can be assigned to students
7. Preparing a video/Advertisement page for a new product

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of Five principles for both activities and written test

Semester 2

Title of the Course:

DSC 3 Foundations of Sociological Theory		DSC 4 Sociology of Rural Life in India	
Number of Theory Credits	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/ semester**
3	**42**	**3**	**42**

DSC 3 Foundations of Sociological Theory	
Total Contact Hours: 42	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Contextualize the social and intellectual background of ClassicalSociologists
2. Appreciate the Contemporaneity of Classical Sociological Thought
3. Appreciate the need for thinking in theoretical terms and concepts
4. Demonstrate Basic Understanding of Theory and Research

DSC 3: Foundations of Sociological Theory	Hrs 42
Unit – 1 August Comte and Herbert Spencer	**12**
Chapter 1: Auguste Comte: Intellectual context, Positivism, Law of Three Stages, Classification of Sciences **Chapter 2:** Herbert Spencer: Theory of Social Evolution, Organic Analogy,Types of Society	
Unit – 2 Karl Marx and Georg Simmel	**14**
Chapter 3: Karl Marx: Dialectical Materialism, Economic Determinism, Class Struggle, Alienation **Chapter 4:** Georg Simmel: Formal Sociology, Theory of Sociation, Theory of Conflict	
Unit - 3. Emile Durkheim and Max Weber	**16**
Chapter 5: Emile Durkheim: Social Facts, Division of Labour in Society,Suicide, Sociology of Religion **Chapter 6:** Max Weber: Social Action, Ideal Types, Bureaucracy, Types of Authority, Protestant Ethics and Spirit of Capitalism	

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- ಮುಳುಗುಂದ, ಐ ಸಿ ೨೦೧೭ ಪಾಶ್ಚಾತ್ಯ ಸಾಮಾಜಿಕ ಚಿಂತನೆ, ಸೃಷ್ಟಿ ಪ್ರಕಾಶನ, ಧಾರವಾಡ
- ಸೋಮಯ್ಯ , ಕೆ ಎನ್ ೧೯೮೯, ಸಮಾಜಶಾಸ್ತ್ರದ ಆಚಾರ್ಯ ರು, ಸರಸ್ವತಿ ಪುರಂ, ಮೈಸೂರ

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Unit 1 Aguste Comte and Herbert Spencer

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- https://iep.utm.edu/spencer https://anthropology.ua.edu/theory/social-evolutionism

Unit 2 Karl Marx and George Simmel

- https://scholar.harvard.edu/files/michaelrosen/files/karl_marx.pdf https://www.britannica.com/biography/Karl-Marx/Character-and-significance https://www.encyclopedia.com/social-sciences/applied-and-social-sciences-magazines/marx-karl-impact-sociology https://plato.stanford.edu/entries/alienation/ https://www.openculture.com/2021/05/what-karl-marx-meant-by-alienation- two-animated-videos-explain.html https://www.encyclopedia.com/people/social-sciences-and-law/sociology- biographies/georg-simmel
- http://enpuir.npu.edu.ua/bitstream/handle/123456789/9425/Pet%27ko%2C%20Borisyuk%2C%202014.pdf?sequence=1&isAllowed=y https://brocku.ca/MeadProject/Simmel/Simmel_1904a.html

Unit 3 Emile Durkheim and Max Weber

- https://www.britannica.com/biography/Emile-Durkheimhttps://iep.utm.edu/durkheim/ http://uregina.ca/~gingrich/250j1503.htm
- https://opentextbc.ca/introductiontosociology/chapter/chapter-15-religion/ http://home.dsoc.uevora.pt/~eje/weber.html https://plato.stanford.edu/entries/weber/ http://uregina.ca/~gingrich/wqw03.htm https://www.britannica.com/topic/bureaucracy https://archive.law.upenn.edu/institutes/cerl/conferences/ethicsofsecrecy/ papers/reading/Weber.pdf
- https://ccsuniversity.ac.in/bridge-library/pdf/Sociological_Theory%20Ritzer.pdf

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentation by students

Suggested Activities

Unit 1

1. Students can be made to sit in groups and discuss about the hierarchy of sciences that is seen in today's India - importance attached to Science, Technology, Engineering and Medicine (STEM) courses vis a vis social sciences and humanities using data from Ministry of Education (AISHE Survey results)
2. Group discussion/role play on the coexistence of religion and science of modern Indian by way of students' identifying such instances in their daily life
3. Presentation by students on consequences of accepting social evolution theory and its implication on welfare schemes
4. Group discussion on how modern societies can be categorised in comparison with Spencer's typology.
5. Teachers may help the students through preparation and distribution of a handout (limited to one typed page) or a brief introductory lecture before group discussion or presentation by students and encourage them to actively discuss, take notes and

present group's ideas by rotation. It is preferable to form separate groups frequently so that students will have a chance to interact with as many as possible.

Unit 2

1. Students can be encouraged to interact with a cross section of workers like industrial labourers, artisans, folk artists etc. and present their life experience to understand the relevance of economic determinism and alienation and present it as an assignment/presentation before their friends
5. Students can be shown/encouraged to see movies which help in the understanding of concepts of alienation and struggle like Puttakkana Highway and present their ideas in the form of presentation/written assignments within 500-750 words
6. Students can be shown/encouraged to see movies which help in the understanding of group dynamics. Movies having very common themes of one male lead actor-two female lead actors or vice versa, entry of third person in the life of couple or friends etc. can be used present their ideas inthe form of presentation/written assignments within 500-750 words

Unit 3

1. Ask the students to imagine themselves as one of the above thinkers and write an application to the post of professor in a university by giving brief bio-data, contributions to the field of sociology, their strengths, criticism of their work and answer to their critics. This can either be an individual activity or group activity.
2. Students can discuss and write a report about primary values of their own religion and how those values have impacted the economic activities in their own community.
3. Movies like Tabarana Kathe can be screened and discussed to understand the principle of iron cage of bureaucracy which was explained by Max Weber
4. Mapping of types of authority over the Indian political system can be discussed to understand the dynamics of tradition and change.

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities andwritten test

Semester II

DSC 4 Sociology of Rural Life in India	
Total Contact Hours: 42	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Understand the myths and realities of village India constructed by Western scholars
2. Understand the changes in agricultural system and its consequences
3. Appreciate the role of traditional social institutions and how they haveresponded to forces of change
4. Make an informed analysis of various development programmes and challenges encountered

DSC 4: Sociology of Rural Life in India	42 Hrs
Unit – 1 Rural and Agrarian Social Structure	**16**
Chapter No. 1: Social Construction of Rural Societies: Myth and Reality (Mysore Narasimhachar Srinivas) **Chapter No. 2:** Agrarian Social Structure: Land Tenure Systems (Colonial Period); Post-Independence Indian Land Reform Laws **Chapter No. 3:** Commercialization of Agriculture **Chapter No. 4:** Commoditization of Land	
Unit - 2. Themes of Rural Society in India	**14**
Chapter No. 5: Rural Caste and Class Structure **Chapter No 6:** Gender and Agrarian Relations **Chapter No. 7:** Impact of Panchayat Raj System and Rural Politics **Chapter No. 8:** Actors in Market - Weekly Fairs, Trading Castes, Emerging Trading Classes and Key Role of Intermediaries **Chapter No. 9:** Emergence of Online and Virtual CommodityMarkets - Features and Impact on Traditional Sellers and Buyers	
Unit – 3 Rural Development	**12**
Chapter No. 10: Objectives of Rural Development**:-** Induced Intervention: PURA, MGNREGA, Swach Bharat Abhiyan, Akshara	

Dasoha, Water and Land Development Efforts **Chapter No. 11:** Challenges to Sustainable Rural Development: Casteism, Factional Politics, Natural Calamities (Droughts and Floods), Utilization of Water, Fertilizers and Pesticides	

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- https://www.india.gov.in/topics/rural Government of India portal on Rural areas
- https://www.epw.in/system/files/pdf/1954_6/22/village_studies.pdf An Article by M N Srinivas on Village Studies
- https://www.epw.in/system/files/pdf/1960_12/37/the_myth_of_selfsufficiency_of_the_indian_village.pdf An Article by Srinivas M N and A M Shah on The Myth of the Self-Sufficiency of Indian Village
- https://economics.mit.edu/files/511 An Article by Abhijit Banerjee and Lakshmi Iyer on - History, Institutions and Economic Performance: The Legacy of Land Tenure Systems in India
- http://www.isec.ac.in/Social%20Change-2015-Vaddiraju-605-12.pdf Agricultural Labour and Gender Dimension: A Note
- http://agropedia.iitk.ac.in/content/panchayati-raj-rural-development-perspective
- https://niti.gov.in/planningcommission.gov.in/docs/plans/stateplan/sdr_punjab/ sdrpun_ch5.pdf A Niti Aayog Report

Pedagogy : Field work, micro projects, group discussion, role play, written/oral presentation by students

Suggested Activities

Unit 1: Rural Agrarian Structure

1. Students can write a note on the social history of their village or nearby village by talking to the elders and compare notes to discuss about M N Shrinivas' argument on social construction of village communities
2. A report on presence or absence of beneficiaries of land to tiller programme can be prepared to understand the success of land reform laws
3. Opinion of villagers can be collected on the impact of converting agricultural land to residential layouts or other commercial purposes. This can be in the form of case study or taking a small purposive sample. Students can assess the impact of dreaming (sell land and become rich) and the reality (becoming rich or end losing one's livelihood)

Unit 2: Themes of Rural Society in India

1. A visit or two to the nearest weekly market and document the diversity and local flavour in terms of goods sold, traders and buyers' place of origin etc. can be documented systematically
4. Impact of online markets on the life of villagers - selling their products like fish or agricultural commodity, economic benefits and social advantage etc. can be collected and presented
5. Big retailers like Jiomart, Big Basket, Amazon Pantry have entered both rural and urban markets to supply vegetables, fruits, milk etc. What are the possible results of this entry of corporate retailers on neighborhood vendors? How does it affect both the seller and buyer?

Unit 3: Rural Development

1. Students can be asked to collect data on - why do people opt to work under the MGNREGA scheme? Did they have any choice? How this scheme has helped them?

When the program is not in operation, how do they manage their livelihood? A systematic presentation will help themin understanding the harsh realities of life

2. We know that the level of participation among villagers is very high when elections to local bodies take place when compared to assembly or parliamentary elections. Students can find out the reasons for this asymmetrical participation and understand the role of casteism, factionalism, bonds of kinship etc.
3. Political actors raise issues to get votes, gain following and attract the public. Students can do an exercise to list all those issues and categorize them under different headings like - Issues that bring about real change in people's lives, give people a sense of their own power, emotional appeal, issues that affect their existence etc. and provide reasons for their categorization.
4. How people rebuild their life when they are affected by droughts/floods or relocated or displaced? Case studies or small sample surveys can be conducted and report presented in the class room along with their impressions and suggestions.

Apart from the above

1. Students may be asked to assess Self help groups, Sthree Shakti units, or to assess women's participation in rural administration
2. Information on village sanitation, water facilities, irrigation, etc may becollected.
3. An assessment of recent programmes, policies, and developments took placein the villages may be done by the students.
4. Resource mapping, Problem identification, problem solving activities may be assigned to the students.
5. Comparative of analysis of villages and urban areas, enumeration of ruralcustoms and practices may be advised.

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

Open Elective Papers
Semester 2: Open Electives

Title of the Course:

OE 2.1 Society Through Gender Lens		OE 2.2 Social Development in India		OE 2.3 Sociology of Health Care	
Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester
3	39	3	39	3	39

B.A. Semester II - Open Elective 2.1

OE 2.1 Society Through Gender Lens	
Total Contact Hours: 39	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Understand the role of socialization as a constructor of gender roles and status
2. Appreciate the role of defining one's self identity in terms of gender
3. Identify the gender bias and discrimination present in everyday socialstructure
4. Understand the challenges to gender equality.
5. Take informed decisions about addressing gender justice issues

OE 2.1: Society Through Gender Lens	39 Hrs
Unit – 1 Social Construction of Gender	**14**
Chapter 1: Gender and Sex, Patriarchy, Gender Relations, Gender Discrimination, Gender Division of Labour **Chapter 2:** Gender Equality, Gender Neutrality, Androgyny andGender Sensitivity **Chapter 3:** Gender Representation of Women and Transgender in Indian Social Institutions	
Unit – 2 Gender Representation and Violence	**14**
Chapter 4: Mass Media and Politics **Chapter 5: Education, Employment and Health** **Chapter 6:** Domestic Violence, Sexual Harassment at Work Place, Dowry and Rape, Dishonour Killing	

Unit-3 Addressing Gender Justice	11
Chapter 7: The Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) **Chapter 8**: 73rd and 74th Constitutional Amendment and Women's Empowerment **Chapter 9:** Right to self determination of gender - Supreme Court of India's Judgment in NLSA Vs Union of India and others (Writ Petition (Civil) No 400 of 2012)	

Note: This OE Papers Shall be taught by Sociology Teachers

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- https://opentextbc.ca/introductiontosociology/chapter/chapter12-gender- sex-and-sexuality/

Unit 2: Gender Representation and Violence

- https://hbr.org/2019/06/tackling-the-underrepresentation-of-women-in-media https://gsdrc.org/topic-guides/gender/gender-and-media/ https://www.unwomen.org/en/digital-library/multimedia/2020/2/infographic- visualizing-the-data-womens-representation
- https://www.unwomen.org/en/what-we-do/leadership-and-political-participation/facts-and-Gigures https://www.cambridge.org/core/journals/government-and-opposition/information/gender-and-political-representation
- https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199751457.001.0001/oxfordhb-9780199751457-e-34

Unit 3: Addressing Gender Justice

- https://en.wikipedia.org /wiki/ National_Legal_Services_Authority_v._Union_of_India
- https://web.archive.org/web/20140527105348/http://supremecourtoGindia.nic.in/outtoday/wc40012.pdf https://www.equalrightstrust.org/news/indian-supreme-court-recognises- right-self-identify-third-gender
- https://core.ac.uk/download/pdf/236436832.pdf Third Gender Rights: Right to Equality
- https://legislative.gov.in/sites/default/Giles/A2013-14.pdf THE SEXUAL HARASSMENT OF WOMEN AT WORKPLACE (PREVENTION, PROHIBITION AND REDRESSAL) ACT, 2013
- https://www.mondaq.com/india/employee-rights-labour-relations/876830/ sexual-harassment-of-women-at-workplace-a-brief-analysis-of-the-posh- act-2013
- https://vikaspedia.in/social-welfare/women-and-child-development/women- development-1/meera-didi-se-poocho/sexual-harassment-at-work-place https://www.education.gov.in/sites/upload_Giles/mhrd/Giles/upload_document/ 74amend.pdf

Pedagogy : Field work, micro projects, group discussion, role play, written/oral presentation by students

Suggested Activities

Unit 1: Social Construction of Gender

1. Ask the students to answer the question - Why am I a boy or girl? Their answers lead to the question or discussion on - Do I identify myself as boy or girl because of physical features or social behaviour? What moulds our social behaviour? Finally the role of socialization and social construction of gender can be explained
2. Movies like Naanu avanalla, avalu can be screened/discussed to understand the social construction of reality

Unit 2: Gender Representation and Violence

1. Students can be asked to write a report on portrayal of women, men and third gender in

- print media, television, cinema and magazines.

https://theprint.in/features/art-life-and-bollywoods-role-in-violence-against- women/331977/ This article can be used to generate a discussion on role of Bollywood in violence against women
https://www.deccanherald.com/entertainment/where-are-kannada-cinemas- strong-women-762811.html State of Sandalwood and women - such articlescan be used to generate discussion and sensitise
Students can prepare a survey report about the composition of their political representatives at different levels, assess the political representation of differentgenders and the reasons behind such representation or absence
Prepare case studies about personally experienced instances of domestic violence, sexual harassment, and dowry. Can also collate data about dishonour killing in various parts of the country for last few years or so

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

Semester II

Open Elective 2.2

OE 2.2 Social Development in India	
Total Contact Hours: 39	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Distinguish between growth and development
2. Appreciate the importance of social component of development
3. Appreciate the need for sustainable and inclusive human development
4. Recognize the necessity for focus on changing social values to realize thefull potential of growth

OE 2.2: Social Development in India	39 Hrs
Unit – 1 Social Change and Development	**13**
Chapter No. 1: Rethinking Development: From economic development to social development and Human Development Index (HDI) **Chapter No. 2:** Development: Concept - changes in values and social relations as development; Shama Charan Dube's(S C Dube) contributions; Importance of Social Development **Chapter No. 3:** Indian thinking about Social Development - Swami Vivekananda, Rabindranath Tagore, M K Gandhi and Dr BR. Ambedkar	
Unit - 2. Components of Social Development	**13**
Chapter No. 4: Political Freedom, Economic Facilities **Chapter No 5:** Social Opportunities, Transparency, Security	
Unit – 3 Challenges to Social Development	**13**
Chapter No. 6: Sustainable and Inclusive Development, Environmental Sustainability **Chapter No. 7:** Responsible Private Corporations, Redressing Regional Imbalance, Harnessing Demographic Dividend	

Note: This OE Papers Should be taught by Sociology Teachers

Text Books

- So, Alvin Y 1990 Social Change and Development. Sage Publication.
- Sen, Amartya 1999 Development as Freedom, Oxford University Press, Delhi
- Rai, Hirendranath 2013 Economic Thinking of Swami Vivekananda, Mahatma Gandhi and Ravindranath Tagore : Advaita Ashrama Calcutta

- Dayal, P 2006 Gandhian Theory of Reconstruction. Atlantic
- Pearson, P W 1996 Post –Development Theory. Sage Publication
- Srivatsava S P 1998 The Development Debate. Rawat Publication

Reference Works

- https://blogs.lse.ac.uk/southasia/2016/01/13/5689/ Top 100 economic and development challenges for India 220016 http://dotcue.net/swtn/upload_newGiles/2.SocialDevelopment-TheConcept.pdf https://uk.sagepub.com/sites/default/Giles/upm-assets/57961_book_item_57961.pdf DeGining Social Development http://www.gsdrc.org/wp-content/uploads/2015/10/SD_HD.pdf Social Development and Human Development
- http://csdindia.org/wp-content/uploads/2017/10/Working-Paper-Impact-of-Economic-Growth-on-Social-Development-2017.pdf
- https://documents.worldbank.org/en/publication/documents-reports/documentdetail/200011468764675475/social-development-is-economic- development
- https://www.oecd-ilibrary.org/sites/c1265e4f-en/index.html?itemId=/content/component/c1265e4f-en https://www.asiancenturyinstitute.com/development/333-amartya-sen-on- developmentas-freedom https://www.adb.org/sites/default/Giles/publication/29778/social-exclusion.pdf
- https://www.adb.org/sites/default/Giles/evaluation-document/35886/Giles/ op7-conceptualizing-inclusive-development.pdf

Pedagogy : Field work, micro projects, group discussion, role play, written/oral presentation by students

Suggested Activities

Unit 1: Social Change and Development

- https://www.indiaspend.com/fewer-girls-born-in-northern-western-and- richer-indian-states-79517/ The link is a news item about economically rich states of India having fewer girls born. Provides useful data to show that economic growth is not development
- https://www.statista.com/statistics/633011/reported-dowry-death-cases- by-state-india/ This link provides data for dowry deaths in different states of India for the year 2019. This can be used to demonstrate the gap between growth and desired change in social values
- https:// censusindia.gov.in/ 2011- prov- results/ data_Jiles/india/ Final_PPT_2011_chapter6.pdf State of Literacy Report by Census of Indiaauthority. Once again, data in this document can be used for different purposes to generate discussion on need for social development andinadequacy of economic growth

Unit 2: Components of Social Development

1. A project on life chances and social opportunities can be conducted within the college or across colleges to understand its influence on educational attainments
2. Micro projects can be assigned to understand the Sustainable Development Goals
3. Filing RTI application: to help students to learn how to file an application, procedure involved and problems they may face can be experienced and presented in the class room

Unit 3: Social Development: Challenges and Crisis

1. Students can be asked to visit a slum, nearby village or tribal area and collect data about lack or presence of social infrastructure and their quality to assess the inclusive/exclusive nature of development. Teachers can assign this to

individual/group of students and ask them to present their Findings. Students can also be encouraged to take photos or make videos and an exhibition can be arranged in the college

2. Different Development Reports can be used to present a write-up on regional imbalances at different levels (international, national, statewide or even within one's city/town/village). Students' write-up can contain - indicators uses, graphs and explanations apart from photos/videos.
3. Activity (2) can be combined with those listed under Unit 1

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

Semester II

Open Elective 2. 3

OE 2.3 **Sociology of Health Care**	
Total Contact Hours: 39	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

By the end of the course the learners are able to:

- Explain health and illness and health inequities, social constructions of illness and need for health care, interventions and institutional responses
- Understand social processes across lines of gender, socio-economic status, age and how these are implicated in health and illness.
- The learner acquires knowledge of how social organization in the form of institutions impacts the prevention and treatment of health and illness.
- Relate medical and health issues to the social structure of a society
- Understand the net-work of health administration and their roles at various levels learning.

OE 2.3- Sociology of Health Care	Hrs
Unit-I Health as a Social System	**13**
Chapter 1 Definitions, Concept of Health and Wellbeing, Illness, sickness, diseases, hygiene; Significance of Sociology of Health Care **Chapter 2** Sociological Perspective on Health, The determinants of Health: The Social Basis of Health, Class, Gender and Health Inequalities **Chapter 3** Diseases: Chronic and Other Diseases, Communicable and Non Communicable Diseases, Health and Sanitation, Measures to Control Diseases	
Unit-II Health Care Institutions	**13**
Chapter 4. Significance of institutions in Context of health care and Illness: Family and Health care, The elderly and Gender, **Chapter 5**. Hospitals and Health Care: Hospital as a social organization (Doctors, Nurses and Patients); Community Health Care **Chapter 6**. State and health Care: Health for all, maternal and child health **Chapter 7**. NGOs and Health Care	
Unit-III Health Care System in India	**13**
Chapter 8: Indigenous Knowledge systems of medicine in India, Systems of Medicine and alternative practices **Chapter 9** Community Health Care; Rural Health Programs; Commercialization of health care services **Chapter 10:**; Health as a fundamental right. Health policy of the Government of India	

Note: This OE Papers Should be taught by Sociology Teachers

Reference:

- Albert, Gary. L., and R. Fitzpatrick. (1994). Quality of Life in Health Care: Advance in Medical
- Albrecht Gary L. and Fitzpatrick R, Quality of life in Health Care: Advances in Medical Sociology, Jai Press Mumbai, 1994
- Arnold, 1994. Colonising the Body: State, Medicine and the Epidemic Disease in Nineteenth Century India, Oxford University Press, Delhi,
- Banerjee 1982. Poverty, Class and Health Culture in India, Vol. 1, New Delhi: Prachi Prakasan
- Bird, Chloe E. and Patricia P. Rieker. 2008. Gender and Health: The Effects of Constrained Choices and Social Policies. Cambridge, UK: Cambridge University Press ("Gender Differences in Health" 16-45, "Gender Barriers to Health" 62-68).
- Chloe Bird, Peter Conrad & Alan Fremont (2000) Handbook of Medical Sociology. New York
- Cockerham, William C. 1997. Medical Sociology. New Jersey: Prentice Hall. Michael Bury, Jonathan Gabe , 2004. The Sociology of Health and Illness: A Reader, London: Routledge
- Coe, Rodney M. (1970). Sociology of Medicine. New York: Mac Graw Hill.
- Conard P. 2007. Medicalisation of Society: On the Transformations of Human Conditions into Treatable Disorders, Baltimore, John Hopkins University Press David.
- Dak, T.M. Ed. 1991. Sociology of Health, Rawat Publications, New Delhi,
- Dalal, Ajit, Ray Shubha, 2005. (Ed). Social Dimensions of Health, Rawat.
- Das Gupa, Monica et.al. ed.1996. Women's Health in India: Risk and Vulnerability New Delhi: Oxford University Press Turner,
- Dingwali, R. (1976). Aspects of Illness. Martin Robertson, London.
- Dittap, R. (1955). Rural Health and Medical Care in India. Army Educaition Press, Ambala.
- Govt. of Karnataka: Health Development Reports, 1990 to 2005.
- Gupta V.R Ed. 1981. The Social and Cultural Context of Medicine in India, New Delhi, Vikas Publications
- Madhulika Banerji, 2000. 'Wither Indian System of Medicine' www.india-seminar.com
- Nagla Madhu 1988. Medical Sociology, Printwell Publishers, Jaipur Sontag Susan 1990. Illness and its Metaphors, London: Penguin pp 1-86
- Nagla, Madhu. 2013. Gender and Health, Jaipur Rawat Publications
- Rothman, Kenneth 2002. Epidemiology. An introduction, Oxford: Oxford University Press
- Routledge Gunatillake, G. 1984. Inter-sectoral Linkages and Health Development: Case Studies in India (Kerala), Jamaica, Norway, Sri Lanka and Thailand (WHO Offset Series) Geneva: WHO
- Somashekharappa, C. A. (2013). Sociology of Health and Wellness. (In Kannada), Prasaranga, Vikas Publishing House.
- Sujatha V and Leena Abraham. 2009. 'Medicine State and Society' Economic and Political Weekly XLIV No 16 April
- Surbrigg 1984.Rekku Story: Structures of Illhealth and Source of Change, New Delhi
- Turner Bryan , 1987. Medical Power and Social Knowledge, London; Sage Annandale, Ellen 1998. The Sociology of Health and Medicine: A Critical Introduction London: Polity Press
- Venkataratnam, R. 1979.Medical sociology in an Indian setting, Madras: Macmillan.
- Wilson Caroline 2009. Dis-embedding Health Care: Marketisation and the Rising Cost of Medicine in Kerala, South India Journal of South Asian Development April 4: 83-101,
- Young Allan Anthropologies of Illness and Sickness. 1982. Annual Review of Anthropology, 11, pp 257-285

Suggested Activities

- Students can be encouraged to prepare a profile on Health status of Indian Population
- Group Discussion can be conducted on Health disparities in terms of Gender, Class,

Caste, Religion and Age.

- Group Discussion can be conducted on importance of Health care in Families.
- Students can be encouraged to present seminar on determinants of Health.
- Students can be encouraged to prepare a list and write a Report on the health problems/conditions of students of their own college/locality /village
- Students can be encouraged to present seminar on commercialization of Health care in India.
- Student can be asked to prepare a list of rural Health programmes and to conduct a survey on the utilization of those programmes by conducting interview.
- Preparing a list of NGO's and the other voluntary organization involved in health care of aged/children/women/persons with disability.
- Students can be asked prepare the list of indigenous medicines used in their family/locality/community/village
- Students can be assigned to list out and explained to hygiene practices in home/institution/colleges/public places

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test.

Semester III

DSC 5 Social Stratification and Mobility		DSC 6 Sociology of Urban Life in India	
Number of Theory Credits	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	**42**	**3**	**42**

DSC 5 Social Stratification and Mobility	
Total Contact Hours: 42	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Understand the nature and role of social stratification
2. Recognize different types of stratification and mobility
3. Critically understand and analyze different theories of social stratification
4. Able to analyze and understand the role of Education and family in promoting Social mobility.

DSC 5: Social Stratification and Mobility	**42 Hrs**
Unit – 1 Stratification - Features and Forms	**14**
Chapter No. 1. Basic characteristics of Stratification. **Chapter No.2.** Forms of Social Stratification - Slavery, Estate, Caste, Class. **Chapter No.3.** Dimensions of Social Stratification - Income, Wealth, Power,Occupational Prestige, Schooling.	
Unit – 2 Perspectives on Stratification	**14**
Chapter No. 4. Functional Theory: Kingsley Davis and W E Moore's perspective and critique by Melvin M Tumin. **Chapter No.5.** Marxian Theory: Class and Social Change. **Chapter No.6.** Weber's Theory: Class, Status and Group Power.	
Unit – 3 Social Mobility	**14**
Chapter No.7. Meaning and Determinants of Social Mobility, Forms of Social Mobility: Horizontal and Vertical, Intergenerational and Intragenerational Mobility **Chapter No.8.** Rise of Middle Class - Role of Education and Profession	

Suggested Internet Resources

Unit **1**

https://courses.lumenlearning.com/atd-bmcc-sociology/chapter/theoretical-perspectives-on-social-stratification
https://www.britannica.com/topic/sociology/Social-stratification https://stanford.edu/~grusky/article files/social_stratification.pdf https://stanford.edu/~grusky/article files/social_stratification.pdf

Unit 2

https://openstax.org/books/introduction-sociology-3e/pages/9-4-theoretical-perspectives- on-social-stratification
https://courses.lumenlearning.com/sociology/chapter/theoretical-perspectives-on-social- stratification/
https://www.faculty.rsu.edu/users/f/felwell/www/Theorists/Essays/Mills2.htm
https://www.epw.in/system/files/pdf/1964_16/34 wright_mills_and_the_power_elite.pdf

Unit 3

https://www.encyclopedia.com/history/encyclopedias-almanacs-transcripts-and-maps/rise-middle-class
https://www.financialexpress.com/opinion/the-rising-importance-of-the-middle-class-in- india/2223544/
https://www.caixabankresearch.com/en/economics-markets/labour-market-demographics/ emergence-middle-class-emerging-country-phenomenon https://www.brookings.edu/research/education-and-the-dynamics-of-middle-class-status/ https://www.theguardian.com/education/2017/nov/21/english-class-system-shaped-in- schools
https://www.livemint.com/Opinion/DuRPMPSqaaqCDLoNMgRAbL/The-class-divide-in-Indian-education-system.html
https://www.encyclopedia.com/history/encyclopedias-almanacs-transcripts-and-maps/ middle-class-occupations
https://www.sav.sk/journals/uploads/05281234AAS_20-1_Gundemeda.pdf Caste in TwentyFirst Century India
https://sci-hub.se/10.1146/annurev-soc-071913-043303 Caste in Contemporary India: Flexibility and Persistence
https://mittalsouthasiainstitute.harvard.edu/wp-content/uploads/2018/11/Ascriptive- Hierarchies-Caste-and-its-Reproductions.pdf https://www.mcgill.ca/iris/files/iris/Panel8.2Vaid.pdf

Reference Books

- Beteille, Andre. (1969). Caste Class & Power: Changing Patterns of Stratification in a Tanjore Village,
- Dirks, Nicholas B 2001, Castes of Mind: Colonialism and the Making of Modern India,Princeton University Press, Princeton
- Dumont, Louis. (1970). Homo Hierarchicus. OUP. Oxford.
- Grusky, Nicholas B and Jasmine Hill, 2018 Inequality in the 21st Century, Routledge, New YorkHess, Andreas, 2001, Concepts of Social Stratification, Palgrave, New York
- Jodhka, Surnider S, 2018, Caste in Contemporary India, 2nd Edition, Routledge, London
- KeganPaual
- Lipset S. M. &Bendix R. (Ed.) (1954). Class,StatusandPower: ReadingsinSocial Stratification.
- Mills C. Wright, 1956 The Power Elite, Oxford University Press
- Pitirim Sorokin. (1959). Social and Cultural Mobility. NewYork: The Free Press.
- Sarkar, Sumit and Tanika Sarkar (Eds) 2014, Caste in Modern India, Vol.1, Permanent Black,Ranikhet
- Sharma, K L 2201, Caste, Social Inequality and Mobility in Rural India, Sage, New Delhi Tumin, Melvin M Social Stratification, Prentice-Hall India, New Delhi
- Sharma, K.L. (1997). Social Stratification in India. New Delhi: Sage.
- Sharma, K.L. (2010). Social Stratification and Social Mobility. Jaipur: Rawat Publication.
- Singh, Yogendra. (1989). Social Stratification and Change in India. Manohar, New Delhi. University of California Press.
- Wright, Erik Olin 2000 Class Counts, Cambridge University Press, Cambridge

Suggested Activities
Unit-1

- After understanding the different strata of society. Students can discuss about the existing stratification system of society with examples.
- A discussion can be conducted on the old slavery system and other stratification system which exist in different countries.
- Students can be try to know the role of Caste in present society. They can able to compare the caste and class system with their own ideas.
- Students can be encouraged to do open discussion on how Income, Power, Schooling etc., help to acquire position and power in society.

Unit-2

- Group discussion can be done on inequalities practiced in society, in background of the theories of stratification and various types of inequalities and differentiations in society.
- Students can write and discuss how talented and expert individuals occupy higher position in social stratified society.
- Ask the students to write how to acquire prestige, position, power in society, how individuals increases their strengths to enjoy above all in their life.
- Students can try to judge how individuals efforts, ability and needs remove the traditional capitalist system.

Unit-3

- Encourage the students to participate in extra-economic activities like sports, community service, arts, hobbies,etc.
- Students can discuss about the role of Education in present scenario and how it helps to enhance their knowledge, skills and abilities.
- To arrange post-game discussion to help students to analyses how the game reflects social stratification.
- A report can be prepared by students about role of Caste in modern changing society and how the upper Caste groups have higher levels of land ownership, income followed by the other backward classes in India.
- Students can arrange a rally either by marching on streets or by vehicle to promote education in rural areas

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentationby students

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

Semester III

DSC 6 Sociology of Urban Life in India	
Total Contact Hours: 42	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Define the basic concepts of Urban Sociology
2. Identify and describe different types of city
3. Analytically understand theoretical issues related to Urban Society
4. Able to understand and recognize urban problems.
5. Critically evaluate Urban issues, Policies and Planning and Development

DSC 6: Sociology of Urban Life in India	42 Hrs
Unit – 1 Introducing Urban Sociology	**17**
Chapter No. 1. Meaning of Urban Sociology and its importance; characteristics of Urban Society. **Chapter No.2.** Meaning of Urban, Urbanism and the City; Types of City: Metropolitan, Megacity, Smart City and Global City. **Chapter No.3.** Urbanization, Rural-Urban Continuum, Suburbs , Urban Sprawl, Edge Cities.	
Unit – 2 Perspectives on Urban Society	**9**
Chapter No. 4. Ecological Theory (Chicago School). **Chapter No.5.** World and Global Cities (Saskia Sassen). **Chapter No.6** Spaces of Flows (Manuel Castells), Cities in the South.	
Unit – 3 Urban Policy	**16**
Chapter No.7. Inequalities: Caste, Class, Gated Communities and Social Exclusion. **Chapter No.8.** Culture and Leisure, Elite and Popular Culture. **Chapter No.9**. Urban Governance: Urbanization and Environmental Concerns, Recent Urban Development Programmes in India.	

Suggested Internet Resources

Unit 1

https://www.sociologylens.in/2021/07/urban.html
https://www.oxfordbibliographies.com/view/document/obo-9780190922481/obo-9780190922481-0016.xml
https://www.sciencedirect.com/topics/social-sciences/urban-sociology
https://metropolitics.org/Thirty-Years-of-Urban-Sociology.html
https://www.tandfonline.com/doi/pdf/10.1080/03585522.1958.10411404
https://www.oxfordreference.com/view/10.1093/oi/authority.20110803114909357
https://www.britannica.com/topic/urban-culture https://www.britannica.com/topic/urbanization
http://sociology.iresearchnet.com/urban-sociology/city/

https://www.sociologydiscussion.com/rural-sociology/rural-urban-continuum-study-notes-rural-sociology/2625
https://planningtank.com/settlement-geography/rural-urban-continuum
https://www.britannica.com/topic/urban-sprawl
https://www.nature.com/scitable/knowledge/library/the-characteristics-causes-and- consequences-of-sprawling-103014747/
https://www.sciencedirect.com/science/article/pii/B978008097086874061X
https://www.thoughtco.com/edge-city-1435778 Edge City
https://www.sciencedirect.com/topics/earth-and-planetary-sciences/edge-city
https://www.encyclopedia.com/reference/encyclopedias-almanacs-transcripts-and-maps/edge-cities
Indianeconomy.net

Unit 2

https://www.yorku.ca/lfoster/2006-07/sosi3830/lectures/URBAN_SOCIOLOGY_THEORIES.html
http://sociology.iresearchnet.com/urban-sociology/chicago-school-of-sociology/
http://www.saskiasassen.com/pdfs/publications/the-global-city-brown.pdf
http://felix.openflows.com/html/space_of_flows.html
https://educationmuseum.wordpress.com/2013/03/08/manuel-castells-space-of-flows-and- timeless-time/
https://www.dhi.ac.uk/san/waysofbeing/data/communities-murphy-castells-1999b.pdf Grassrooting the Space of Flows
https://www.radicalphilosophy.com/article/the-space-of-flows-and-timeless-time
https://www.britannica.com/topic/urban-culture https://www.britannica.com/topic/urban-culture/Types-of-urban-cultures
https://www.researchgate.net/publication/305936766_Urban_Culture_Definition_and_Contextualization
https://www.lincolninst.edu/publications/articles/urban-spatial-segregation
https://journals.sagepub.com/doi/abs/10.1177/0975425317749657?journalCode=euaa
https://www.journals.uchicago.edu/doi/10.1086/682199 Social-spatial Segregation: Concepts, Processes and Outcomes
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjoxL-g1Pb1AhWdsFYBHZAsD2cQFnoECAQQAQ&url=https%3A%2F%2Fzenodo.org%2Frecord%2F1131243%2Files%2F10007443.pdf&usg=AOvVaw0mPjYK-waEhB77BCkCYinO A Review on the Social Features of Gated Communities
https://pure.uva.nl/ws/files/3679113/18875_Albers_Gated_Communities.pdf
https://www.stirworld.com/think-opinions-gated-communities-in-india-social-integration- or-exclusion2
https://journals.openedition.org/belgeo/23832 Perspectives of Gated Communities' Socio-spatial Integration
https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1061.4083&rep=rep1&type=pdf Gated Communities: Institutionalising Social Strati=ication

Unit 3

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7124478/ Urban Inequalities in 21stCentury Economy
https://www.hks.harvard.edu/sites/default/files/centers/taubman/files/urban_inequality_final.pdf
https://www.orfonline.org/research/rising-inequality-and-urban-exclusion/
https://gsdrc.org/topic-guides/urban-governance/concepts-and-debates/what-is-urban- governance/
https://www.sciencedirect.com/topics/social-sciences/urban-governance
https://www.nagrika.org/nagrikalarticles/urbangovernance
https://www.encyclopedia.com/history/encyclopedias-almanacs-transcripts-and-maps/ popular-and-elite-culture
https://jag.journalagent.com/itujfa/pdfs/ITUJFA-38233-THEORY_ARTICLES-DENER.pdf
https://www.encyclopedia.com/humanities/encyclopedias-almanacs-transcripts-and-maps/ urbanization-leisure
https://www.urbanfoundry.co.uk/wp-content/uploads/Env-Planning-C-article.pdf
https://www.researchgate.net/publication/23731534_The_contribution_of_leisure_and_entertainment_to_the_evolving_polycentric_urban_network_on_regional_scale_-_towards_a_new_research_agenda https://=iles.eric.ed.gov/fulltext/EJ1271868.pdf Youth Leisure in Cultural Space of Modern City
https://www.researchgate.net/publication/287749933_India%27s_Middle_Class_New_Forms_of_Urban_Leisure_Consumption_and_Prosperity
https://www.livemint.com/Opinion/VpWzSdVCKazbdi0B52iPaM/The-changing-face-of-the- urban-leisure-

economy.html
https://www.prb.org/resources/urbanization-an-environmental-force-to-be-reckoned-with/
https://www.iied.org/urbanisation-environment
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwizqcGg2Pb1AhUYsFYBHeuLA2QQFnoECCUQAQ&url=https%3A%2F%2Fwww.mdpi.com%2F2071-1050%2F12%2F24%2F10402%2Fpdf&usg=AOvVaw1Zuq50RVdp3csiMTc1YCR2 Environmental Concerna and Urbanisationin India
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4824703/ Urbanisation and Greening of Indian Cities
https://www.niti.gov.in/sites/default/=iles/2021-09/UrbanPlanningCapacity-in-India-16092021.pdf
https://cprindia.org/bookchapters/urban-india-and-climate-change/ in the book Indian in aWarming World (whole book can be downloaded)

Reference Books

- Flanagan, William G 2010, Urban Sociology: Images and Structures, 5th Edition, bowman and Littlefield Publishers Inc, New York
- Gottdiener, Mark H & Others, 2015, The Urban Sociology, Routledge, New York
- Hannigan, John and Grey Richards (Ed) 2017 The Sage Handbook of New Urban Studies, Sage London
- Karp, David A & others, 2015, Being Urban: A Sociology of City Life, 3rd Edition, Praeger, California
- LeGates, T R & Frederic Stout (Eds) 2016 The City Reader, 6th Edition, Routledge, New York
  Lin, Jan & C Mele (Eds) 2013, The Urban Sociology Reader, Routledge, New York
- Miles, Malcolm & Tim Hall 2004 The City Cultural Reader, 2nd Edition, Rout ledge, New York
- Saskia Sassen, 2001The Global city 2nd edition, Princeton University New York, London

Suggested Activities:

Unit-1

- Students can try to study city in terms of social organization. They can analyze the forms of urban life, urbanization and bureaucratic system etc.
- Conduct open discussion among students about the various types of cities and its importance with historical background of cities.
- Students can visit the cities and prepare the report on Metropolitan, Mega cities and Global cities and can answer the questions like how these cities populated with facilities and why industrialist prefer to open production activities in cities only.
- Ask the students to analyze why most of the people prefer to stay in cities, how they enjoy, utilize and accommodated with facilities.
- Ask the students to prepare the list about different causes and consequences of migration, cultural traits of cities in comparison with rural areas.

Unit-2

- Encourage the students to discuss the problems, changes, processes of urban areas, tell them to give solutions to overcome the problems with remedies.
- Teachers can help the students to list out the global cities and prepare the note how global cities technologically advanced with engaged in high economic activities.
- Group discussion can be conducted about information system, telecommunication and transportation etc., to acquired good knowledge about development of urban society.

Unit-3

- Students can discuss about the comparison of leisure activities among poor and rich class people.

- Students can evaluate the urban planning and e-governance, city sanitation plan, city mobility plan etc.
- Prepare report on future plans about the development of urban areas which includes all basic facilities?
- Students can conduct a mini survey on studying the migration of families to metro cities in search of jobs and better facilities.
- Students can arrange a discussion with rural and urban families for exchanging their ethnical differences and life practices.

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentationby students

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

Semester III
Open Elective

OE 3.1 Sociology of Youth		OE 3.2 Sociology of Tourism Management		OE 3.3 Social Welfare and Social Policy In India	
Number of Theory Credits	**Number of lecture hours/ semester**	**Number of Theory Credits**	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	**39**	**3**	**39**	**3**	**39**

OE 3.1 Sociology of Youth	
Total Contact Hours: 39	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Recognize and explain how sociologists conceptualize and study youth and youth hood
2. Understand how youth evolve in the context of social, economic and cultural settings
3. Understand concerns and problems of youth
4. To articulate the position of youth in society and the participation of youth in Nation building.
5. Apply relevant sociological theory to critically examine young people's positions and experiences in society.
6. Articulate your own position on key debates on the position of young people in society.
7. Know the role of youth at global and Indian context and the influence of different groups on youths.

OE 3.1: Sociology of Youth	**39 Hrs**
Unit – 1 Age Groups and Social Structure	**13**
Chapter No. 1. Age Differentiation, Age Groups. Age Sets; Problem of Generations; Cultural Lag (W F Ogburn); Structural Lag (Riley)	
Chapter No.2. Youth Cultures, Subcultures, Counter Culture, Contra Culture	
Chapter No.3. Youth Vs Caste; Youth Vs Class	

Unit – 2 Youth and Society	**13**
Chapter No. 4. Youth, Music and Leisure **Chapter No.5.** Globalization of Youth Culture; Marketing Youth Culture **Chapter No.6.** Youth, Media and Technology	
Unit – 3 Youth and Social Concerns	**13**
Chapter No.7. Youth, Protest and Violence: Social, Political and Economic **Chapter No.8.** Youth, Peer groups and Drug Culture **Chapter No.9.** Youth, Nationalism and Globalization	

Note: This OE Papers Shall be taught by Sociology Teachers

Suggested Internet Resources

Unit 1

https://www.encyclopedia.com/social-sciences/applied-and-social-sciences-magazines/age- differentiation
https://www.weforum.org/agenda/2015/09/how-different-age-groups-identify-with-their-generational-labels/
https://censusindia.gov.in/census_and_you/age_structure_and_marital_status.aspx
https://www.collinsdictionary.com/dictionary/english/age-group
https://ourworldindata.org/age-structure
https://1989after1989.exeter.ac.uk/wp-content/uploads/ 2014/03/01_The_Sociological_Problem.pdf Problem of Generations
https://www.style-research.eu/resource-centre/glossary/generation-intergenerational-relationships/
https://socialsci.libretexts.org/Bookshelves/Sociology/Introduction_to_Sociology/Book%3A_Sociology_(Boundless)/03%3A_Culture/3.03%3A_Culture_and_Adaptation/3.3C%3A_Cultural_Lag
https://www.encyclopedia.com/science/encyclopedias-almanacs-transcripts-and-maps/ cultural-lag
https://www.encyclopedia.com/social-sciences/encyclopedias-almanacs-transcripts-and-maps/structural-lag
https://www.sciencedirect.com/topics/social-sciences/youth-culture
https://www.encyclopedia.com/social-sciences-and-law/sociology-and-social-reform/ sociology-general-terms-and-concepts/youth-culture
https://www.sciencedirect.com/topics/social-sciences/subcultures
https://haencler.sites.grinnell.edu/subcultural-theory-and-theorists/what-is-a-subculture/

Unit 2

https://www.un.org/youthenvoy/leisure-time-activities/
https://www.un.org/development/desa/youth/world-youth-report.html
https://www.un.org/esa/socdev/unyin/documents/ydiCarlesFeixa_Leisure.pdf
https://en.unesco.org/creativity/policy-monitoring-platform/youth-culture-leisure-time
https://www.mapsocindia.com/my-india/lifestyle/what-is-the-impact-of-music-on-youth
https://www.lutherwood.ca/mentalhealth/blog/2016/popular-music-youth
https://student.cc.uoc.gr/uploadFiles/181-ΕΛΕΚ316/ Researching%20%20youth%20culture.pdf
https://www.scirp.org/pdf/AA_2016111018100081.pdf
https://www.cambridgescholars.com/resources/pdfs/978-1-4438-5945-5-sample.pdf
https://www.researchgate.net/publication/ 333405140_Cosmopolitanism_Glocalization_and_Youth_Cultures
https://www.academia.edu/1583989/The_Glocalization_of_Youth_Culture_The_Global_Youth_Segment_as_Structures_of_Common_Difference
https://academic.oup.com/jcr/article-abstract/33/2/231/1849563?redirectedFrom=PDF The Glocalization of Youth Culture
https://www.jstor.org/stable/30095737?seq=1#metadata_info_tab_contents
https://www.forbes.com/sites/marketshare/2011/07/01/marketing-to-youth-globally-its-childs-play/?sh=94e1bb0f6100
https://www.acrwebsite.org/volumes/8682
https://hedgehogreview.com/issues/youth-culture/articles/the-internet-and-youth-culture

https://www.pewresearch.org/internet/2018/05/31/teens-social-media-technology-2018/
https://cyber.harvard.edu/research/youthandmedia

Unit 3

https://www.loc.gov/collections/civil-rights-history-project/articles-and-essays/youth-in-the-civil-rights-movement/
https://news.un.org/en/story/2021/11/1105042 Thousands of youth take over Glasgowstreets
https://www.hindustantimes.com/india-news/a-brief-history-of-student-protests-in-india/ story-zYvk2GeblUVBtzjOzcLA1N.html
https://www.who.int/news-room/fact-sheets/detail/youth-violence

Reference Books

- Dannie Kjeldgaard, Søren Askegaard, The Glocalization of Youth Culture: The Global Youth Segment as Structures of Common Difference, *Journal of Consumer Research*, Volume 33, Issue 2, September 2006, Pages 231–247, https://doi.org/10.1086/506304
- Edmunds, June; Turner, Bryan S. (2005). "Global Generations: Social Change in the TwentiethCentury". *British Journal of Sociology*. 56 (4): 559–577. doi:10.1111/j.1468-4446.2005.00083
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- Jeffrey, Craig 2010, Timepass: Youth, class and time among unemployed young men in India, *American Ethnologist*, Vol.37, No.3, pp.465-481
- Katzenstein, Mary F 1977, Mobilisation of Indian Youth in the Shiv Sena, *PaciIic Affairs,* Vol.50.No.2, pp.231-248
- Lukose, Ritty 2005, Consuming Globalisation: Youth and Gender in Kerala, India, *Journal ofSocial History*, Vol.38, No.4, pp.915-935
- Mannheim, Karl (1952) "The Problem of Generations". In Kecskemeti, Paul (ed.). Essays on theSociology of Knowledge: Collected Works, Volume 5. New York: Routledge. p. 276–322
- Mathur, Charu & others 2014, Change in Tobacco Use Over Time in Urban Indian Youth: TheModernity Role of Socioeconomic Status, *Health, Education & Behaviour*, Vol.41, No.2, pp.121-126
- Riley, Matilda White 1987, On the Signicicance of Age in Sociology, *American Sociological Review*, Vol.52, No.1, pp.1-14

Suggested Activities:

- Ask the students to communicate their ideas in written and verbal form, using appropriate sociological language and concepts.
- Organizing debates between student's local authorities to debate on local and national social policies such as drug abuse, alcohol consumption, illegal gambling in urban and rural areas, domestic violence, religious and violence, social inequality etc.
- Students can be encouraged to reach virtual community on Social media and Applications effectively for creating awareness about drug abuse by creating Flyers, Banners, Posters advertisements and Social slogans on OTT Platform.
- Students be asked to reach youths in the society to organize charity events for homeless and poor people in the community.
- Students can arrange discussion session with a youth leaders and entrepreneurs and youths from defiance and police to exchange idea about nation building initiatives and the role of youth.

- Students can be asked to arrange a youth junction event to collaborate with youths of other academic disciplines such as engineering medical and humanities to discuss on the impact of cinemas and web series on youth and the positive and negative effects on youth life style.

Refer the following books for other activities:

- Johnston, Josee and others 2017, Introducing Sociology: Using the Stuff of Everyday Life,Routledge, London
- McKinney, Kathleen and Barbara S Heys (Eds) 2009, Sociology Through Active Learning, 2nd Edition, Pine Forge Press, New Delhi
- White, Shelley K and others (Eds) 2015, Sociologists in Action on Inequalities, Sage, New Delhi

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentationby students

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

Semester III

Open Elective 3.2

OE 3.2 **Sociology of Tourism and Management**	
Total Contact Hours: 39	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Explain the relationship between tourism, culture and cultural heritage
2. Explain the social, cultural and economic impacts of tourism on local communities
3. Understand the relationship between tourism and consumption
4. Understand the principles of tourism management
5. Able to discover the travel patterns with changing life corrector sticks and Social Class.
6. Explain the relationships between tourism, culture and cultural heritage
7. Able to discover that travel patterns change with changing life characteristics and social class

OE 3.2: Sociology of Tourism and Management	**39 Hrs**
Unit – 1 Sociology, Tourism, Tourists	**14**
Chapter No. 1. Definitions of Sociology, Culture, Tourism, Tourists, TouristGaze; Relation between Tourism, Leisure and Recreation; Sociology of Tourism its Significance.	
Chapter No.2. Types of Tourism: Cultural, Heritage, Health, Food, SportsReligious , Educational and Eco Tourism	
Chapter No.3. Tourism and Locals; Hosts and Guests: Mutual Impact, Cultural Impact of Tourism	
Unit – 2 Tourism System	**10**
Chapter No. 4. Development and Structure of the Tourist System -Motivation and Role of Tourist	
Chapter No.5. Impact of Tourism on Host Place: Social, Economic, Climateand Environmental	
Chapter No.6. Sustainable Tourism and Sustainability of Tourism	
Unit – 3 Tourism Management	**15**
Chapter No.7. Demand for Tourism at Individual and Market level; Tourism Consumer Behaviour: Roles and Decision Making Process; Accommodation: Definition and Management of Commercial Accommodation; Transportation as Tourist Product; Role of	

Intermediaries **Chapter No.8.** Marketing for Tourism: Definition; Difference between Marketing and Selling; Tourism as a Service Industry: Product, Price, Promotion and Place **Chapter No.9.** Information Technology and Tourism: ICT as a Business Tool: e-Tourism	

Note: This OE Papers Shall be taught by Sociology Teachers

Suggested Internet Resources:

Unit 1

https://medcraveonline.com/SIJ/emerging-trends-in-sociology-of-tourism.html
https://www.uvm.edu/rsenr/rm230/urry.pdf Tourist Gaze
https://www.lancaster.ac.uk/fass/resources/sociology-online-papers/papers/urry-globalising-the-tourist-gaze.pdf
https://iarconsortium.org/articles/ 861_The_Relationship_between_Leisure_Tourism_and_Events
https://wedocs.unep.org/bitstream/handle/20.500.11822/11349/
rsocr_printedition.compressed_Part28.pdf?sequence=29&isAllowed=y Tourism andRecreation
https://tourismnotes.com/travel-tourism/ Tourism and types
http://www.ijcrar.com/vol-1/T.Arunmozhi%20and%20A.%20Panneerselvam.pdf Types ofTourism in India
https://www.researchgate.net/publication/ 269412018_Tourism_and_Local_Society_and_Culture
https://eujournalfuturesresearch.springeropen.com/articles/10.1007/s40309-015-0078-5
https://www.researchgate.net/publication/
330877530_Anthropology_of_Tourism_Researching_Interactions_between_Hosts_and_Guests
https://sciendo.com/pdf/10.1515/cjot-2018-0004 Researching Interaction between Hostsand Guests
https://scholars.wlu.ca/cgi/viewcontent.cgi?article=1948&context=etd Understanding Tourist-Host Interaction and their Influence on Quality Tourism Experience

Unit 2

https://www.owlgen.in/what-do-you-understand-by-tourism-system/
https://www.tourismbeast.com/tourism-system/
http://www.drbrambedkarcollege.ac.in/sites/default/ciles/ Impact%20of%20Tourism_pdf.pdf
https://www.skylineuniversity.ac.ae/pdf/tourism/Tourism%20Impacts.pdf
https://www.eajournals.org/wp-content/uploads/THE-IMPACTS-OF-TOURISM-INDUSTRY-ON-HOST-COMMUNITY.pdf
https://www.gstcouncil.org/what-is-sustainable-tourism/
https://sustainabledevelopment.un.org/topics/sustainabletourism
https://tourismnotes.com/sustainable-tourism/

Unit 3

https://repository.up.ac.za/bitstream/handle/2263/24684/02chapters3-4.pdf?sequence=3
https://blog.datumize.com/determinants-of-demand-in-the-tourism-and-travel-industries
https://opentextbc.ca/introtourism/chapter/chapter-3-accommodation/
https://ncert.nic.in/textbook/pdf/lehe207.pdf Hospitality Management
http://cbseacademic.nic.in/web_material/Curriculum/Vocational/2018/Tourism/XII/Introduction%20to%20Hospitality%20.pdf
https://tourismnotes.com/tourism-transportation/
https://www.tourismbeast.com/transport-as-a-component-of-tourism/
https://onlinecourses.swayam2.ac.in/cec19_mg26/preview
https://tourismnotes.com/tourism-marketing/
https://www.marketing91.com/what-is-tourism-marketing/ https://www.igi-global.com/dictionary/e-tourism/42775
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2289872
https://www.laguardia.edu/uploadedciles/ce/content/english_language_learning/center_for_immigrant_education_and_training/gp-hotel_t.e.a.c.h/unit5.pdf

Reference Books

- Andrew Holden, 2005.*Tourism studies and the social sciences,* London: Routledge
- Apostolopoulos, y., Leivadi, S & Yiannakis, A., (eds.) 2000, *The Sociology of Tourism: Theoretical and Empirical Investigations*, London: Routledge.
- Basawaraj, Gulshetty. 2016.Sociology of Leisure and Tourism Study Lambert publication
- Bezbaruah, M.P., 1999. "Tourism - Current Scenario and Future Prospects", Yojana, Vol.43.
- Bhatia, A.K., 2003. Tourism Development, Principles and Practices, New Delhi: Sterling
- Brahmankan, E.B., 1998. Travel and Tourism as a Career, Vol.37, .11.
- Burns, Peter M 1999, An Introduction to Tourism and Anthropology, Routledge, London Fletcher, John & others, 2018, Tourism: Principles and Practice, 6th Edition, Pearson, UK
- Chib, S.N., 1981. Perspectives on Indian Tourism-I, Vol.77, .19. -11, Vol.77, .20
- Chile, Som, N., 1981. Perspectives of Tourism in India, Sarder Patel Memorial Lectures,
- Cohen, Erik 1984. The sociology of tourism: approaches, issues, and findings. Annual
- Dharma Rajan, S., 1999. "Tourism - An Instrument for Development", Yojana, Vol.43, .8.
- Kaul, R.N., 1987. Dynamics of Tourism, New Delhi: a Trilogy K. Publication Pvt., Ltd.
- LajipathiRai, H., 1993. Development of Tourism in India, Rupa Books Pvt., Ltd.Publications Division, Government of India, Publishers Pvt. Ltd.
- Nash, Dennis 2007, The Study of Tourism: Anthropological and Sociological Beginnings, Elsevier, Amsterdam
- Phalaksha, ಪ್ರವಾಸೋದ್ಯಮ
- Selvafri, M., 1989. Tourism Industry in India, Bombay. Himalaya Publishing House.
- Shivarudraswamy, ಭಾರತದ ಪ್ರವಾಸೋದ್ಯಮ
- Swain, S K. and Mishra, J. M. 2011. *Tourism: Principles and Practices*, New Delhi: OUP
- Urry, John 1998, The Tourist Gaze: Leisure and Travel in Contemporary Societies, Sage, NewDelhi
- Veena Das (Ed.), 2006. *Handbook of Indian Sociology*, Oxford University Press, New Delhi
- Vijayalkshmi K.S., ಇತಿಹಾಸ ಮತ್ತು ಪ್ರವಾಸೋದ್ಯಮ

Suggested Activities:

- Ask the students to link Social issues with tourism and Development
- Ask the student to the write on the impact of travel experiences of the individual family, group and Society as a whole-especially the host Society.
- Students can be asked to assess the tourism places which are prone to the violent crimes
- Students can conduct a mini research on a indigenous communities found living in tourism places to understand their cultural and socio- anthropological history .
- Students can conduct fest, expo in tourism spots to promote the social harmony and peace.
- Students in team can be assigned tasks to shoot vlogs videos on famous tourism locations to share their travelling experiences and educate the audiences about the social importance of that tourism place.
- A social symposium can be held where students can display their findings on age old cultural practices followed up by some indigenous tribe communities living in island, deserted and some dry land.
- Taking students on tour to places which where once witnessed social evil and now completely reformed.

Refer to the following books for other activities

- Johnston, José and others 2017, Introducing Sociology: Using the Stuff of Everyday Life,Routledge, London
- McKinney, Kathleen and Barbara S Heys (Eds) 2009, Sociology Through Active Learning, 2nd Edition, Pine Forge Press, New Delhi
- White, Shelley K and others (Eds) 2015, Sociologists in Action on Inequalities, Sage, New Delhi

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentation by students

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

Semester III

Open Elective 3.3

OE 3.3 **Social Welfare and Social Policy In India**	
Total Contact Hours: 39	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Understand the Basic Concepts in Social Welfare
2. Have knowledge about the different Welfare Programmes and Policies in India
3. Understand the process of Social Change and Development through Social Welfare.

OE 3.3: Social Welfare and Social Policy In India	**39 Hrs**
Unit – 1 Social Welfare and Social	**15**
Chapter No. 1. Definitions of Social Welfare, Social Policy, Democracy- Importance of Social Welfare- Compulsory Primary Education; employment; Health Care	
Chapter No.2. Welfare of disadvantaged groups: Scheduled Castes, Scheduled Tribe,	
Chapter No.3. Other Backward Classes and Minorities	
Unit – 2 Women Child, Youth and Labour Welfare	**10**
Chapter No. 4. National Health Policy and Programmes for Women	
Chapter No.5. Welfare Policy for Children and Elderly	
Chapter No.6. Youth Welfare(Empowerment) Programmes: National Youth Policy	
Chapter No.7. Labour Welfare Programmes	
Unit – 3 Social Welfare and Development	**14**
Chapter No.8. Social Welfare and Social Legislations	
Chapter No.9. Barriers to Social Welfare in India	
Chapter No.10. Agencies of Social Welfare – Role of Government and Non-government Organizations	
Chapter No.11. Central Social Welfare Board and State Social Welfare Board	

Note: This OE Papers Shall be taught by Sociology Teachers

References:

- Ahuja, Ram. 2001. *Social Problems in India*. Jaipur: Rawat Publications.
- Chowdhry, P.D. 1983. Social Welfare Administration. Delhi: Atma Ram Sons.
- Chaudhary D.P. (1966). *A Handbook of Social Welfare*, Delhi: Atma Ram & Sons.
- Desai, A.R. 1979. *Rural India in Transition*. Bombay: Popular Prakashan.
- Devi, R. and Parkash R. (1998), "*Social Work and Social Welfare Administration, Methods and Practices*", Vol. I, Jaipur
- Dummett, M. 2013. *Breaking the silence: Child sexual abuse in India*. New York, NY: Human Rights Watch.
- Dwivedi, R. M. 2005. *Poverty and development programmes in India*. New Delhi: New Century Publications.
- Friedlander, Walter.A.1961. *Introduction to Social Welfare*. New York: Prentice Hall
- Goel, S.L. & Jain, R.K. 1988. Social Welfare Administration: Theory and Practice, Vol. I &New Delhi: Deep and Deep Publications.
- Jayal, N. G. 2002. *Democracy and the state: Welfare, Secularism and Development in Contemporary India*. New Delhi: Oxford Univ. Press.
- Madan, G.R. 1990. *Indian Social Problems.* Vol.2. New Delhi: Allied Publishers
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- Pandya, R. 2008. *Women welfare and empowerment in India: Vision for 21st century*. New Delhi: New Century Publications.
- Patti, R.J. 2000. The Handbook of Social Welfare Management. Sage Publications.
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- Sachidev, D.R. 2003. *Social Welfare Administration in India*. Allahabad: KitabMahal.
- Seth, M. 2001. *Women and development: The Indian experience*. New Delhi: Sage.
- Sharma, R.N.1993. *Urban Sociology* Delhi: Surjeet Publications.
- Sivaramakrishnan, K.C. et al.1996. *Urbanisation in India. Basic services &* People's
- *Participation.* New Delhi: Institute of Social Sciences and Concept publishing co.
- Talwar, P. P., & Goel, O. P. 1990. *Non-Governmental Organisations for Greater Involvement in Health and Family Welfare Programmes in India*. New Delhi: National Institute of Health& Family Welfare.
- Tribhuvan, Robin.D. (Ed).2000.*Studies in Tribal, Rural and Urban Development*. vol.1&2. New Delhi: DPH

Suggested Activities:

- Ask the students to write the objectives and important of democracy
- Ask the students to make a list of health care programmes and policies in India
- Have discussion on the horizontal and vertical reservation of SC's ST's OBC, Minorities, Women, Physically Handicapped, Economically Poor, Transgender and Defiance
- Encourage the students to visit elderly homes and slums to create awareness on the welfare programs available for them by the government
- Encourage the students to provide the information to the SC's ST's OBC, Minorities, Women, Physically Handicapped, Economically Poor and Transgender regarding welfare Programs. Collect the Reports
- Conduct Seminar and interaction classes on briars and challenges in the welfare of society

Refer the following books for other activities

- Johnston, Josee and others 2017, Introducing Sociology: Using the Stuff of Everyday Life, Routledge, London
- McKinney, Kathleen and Barbara S Heys (Eds) 2009, Sociology Through Active Learning, 2nd Edition, Pine Forge Press, New Delhi
- White, Shelley K and others (Eds) 2015, Sociologists in Action on Inequalities, Sage, New Delhi

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentationby students

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

Semester IV

Title of the Course:

DSE 7 Sociology of MarginalizedGroups		DSE 8 Population and Society	
Number of Theory Credits	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	**42**	**3**	**42**

DSE 7 Sociology of MarginalizedGroups	
Total Contact Hours: 42	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Have knowledge of Marginalization and Marginalized groups in India
2. Understand the impact of powerlessness in social life
3. Have knowledge of inequalities on the basis of cast, class and gender.
4. Ability to participate and critically view efforts undertaken to address inequalities
5. Know the constitutional provisions for the marginalized groups.
6. Consciousness about social reality characterized by marginalization.
7. Knowledge of social protests organized by the marginalized sections against injustices meted out to them.

DSE 7: Sociology of Marginalized Groups	**42 Hrs**
Unit – 1 Introduction	**16**
Chapter No. 1. Marginalization: Meaning and Nature; Types of Marginalization: Social, Political, Economic; Relationship between Marginalization and Social Exclusion	
Chapter No.2. Causes of Marginalization; Marginalized Groups: Caste, Gender, People with Disabilities, Ethnic Minority, Tribes and Elderly	
Chapter No.3. Socio-economic Indices of Marginalization: Poverty, RelativeDeprivation, Exploitation, Discrimination, Educational Backwardness, Inequality and Untouchability	
Unit – 2 Marginalization and Affirmative Action	**13**
Chapter No. 4. Views of Dr B R Ambedkar and Affirmative Principle in theConstitution of India (Constitutional Provisions)	
Chapter No.5. Scheduled Castes, Scheduled Tribes and Status of Women inthese groups	
Chapter No.6. Status of Landless Agricultural Labourers, Transgenders, LGBTQ	

Unit – 3 Social Change and Marginalized Groups	13
Chapter No.7. Social Mobility among Marginalized Groups: Education,Employment, Political Participation, Conversion, Migration	
Chapter No.8. Challenges of Privatization and Response by Marginalized Groups	
Chapter No.9. Social Justice in the context of Globalization	

Suggested Internet Resources

Unit 1

https://medium.com/@jacobthanni/theories-and-practices-of-exclusion-1-43904f64e26b
https://journals.sagepub.com/doi/full/10.1177/2158244012471957 Sociology of SocialExclusion
https://www.researchgate.net/figure/Underlying-causes-of-marginalization-and-its-manifestations_=ig1_254229902
https://elliott.gwu.edu/sites/g/files/zaxdzs2141/f/World%20Fair%20Trade%20Organization.pdf
https://www.poverty.ac.uk/sites/default/=iles/attachments/Relative%20Deprivation%20Theory_David%20Gordon_15th.pdf
https://old.amu.ac.in/emp/studym/100018864.4.pdf Socioeconomic Indicators of Marginalised Communities

Unit 2

https://www.researchgate.net/publication/312495996_Dr_BR_Ambedkar_and_his_interpretations_on_Social_Exclusion_as_a_Historian
https://www.legalserviceindia.com/legal/article-3825-ambedkar-s-idea-of-social-justice- some-re=lections.html
https://www.ijser.org/paper/Ambedkars-Notion-of-Social-Justice-A-Different-Perspective.html
https://www.downtoearth.org.in/blog/toolkit/providing-the-poorest-landless-agricultural- labourers-with-farm-tools-can-ameliorate-their-lot-77919

Unit 3

https://www.orfonline.org/research/social-mobility-in-india-63480/
https://www.livemint.com/Opinion/DwEs4I3fddUBwBViuxMNZI/Can-Dalit-capitalism-be-a- vehicle-for-social-mobility-in-Ind.html
https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/genericdocument/wcms_371208.pdf
https://www.un.org/esa/socdev/documents/ifsd/SocialJustice.pdf
https://www.jstor.org/stable/40204335 Emergent India: Globalisation, Democracy and SocialJustice
https://clpr.org.in/wp-content/uploads/2019/09/Bangalore-Initiative.pdf
https://www.researchgate.net/publication/323028143_Impact_of_Privatization_on_Access_to_Higher_Education_Among_Social_and_Income_Groups_in_India
http://research.economics.unsw.edu.au/scho/WEE/papers/Ashwini%20Deshpande1.pdf
https://www.india-seminar.com/2005/549/549%20sukhadeo%20thorat.htm
https://niti.gov.in/planningcommission.gov.in/docs/plans/planrel/=iveyr/10th/volume2/ v2_ch4_1.pdf

Reference Books

- Beteille, Andre 19922, The Backward Classes in Contemporary India, Oxford University Press, Delhi
- Charley, S R and G K Karanth 1998 (Eds) Challenging Untouchability, Sage India, Delhi
- Gore, M S 1993 The Social Context of an Ideology: Ambedkar's Political and Social Thought,

Sage, New Delhi

- Judge, Paramjit S (Ed) 2013 Towards Sociology of Dalits, Sage, New Delhi Gupta, Dipankar 1991, Social Strati=ication, Oxford University Press, Delhi
- Jodhka, Surnider S, 2018, Caste in Contemporary India, 2nd Edition, Routledge, LondonOmvedt, Gail 2013 Dalits and the Democratic Revolution, Sage, New Delhi
- Thorat, Sukhdeo 2009 Dalits in India, Sage, New Delhi
- Thorat, Sukhdeo and Katherine Newman 2009 Blocked by Caste: Economic Discrimination in Modern India, Oxford University Press, New Delhi

Suggested Activities:
Unit-1

- Students can judge the society by class interaction, why marginalization brings inequalities. They can understand the process where something or someone is pushed to the edge of a group.
- Students can prepare the notes about the marginalized groups like women and girls, rural dwellers, minorities, people with disabilities, migrants, LGBT, Refugees etc.
- Students can find out the various reasons of marginalization like Gender, religion or ethnicity , less representation in political activities etc.
- Arrange discussions about Deprivation, Exploitation, Discrimination, Untouchability. Students can openly express their views regarding these.
- List out the measures to overcome different types of marginalization in present situation.

Unit-2

- After knowing the role of Dr B.R. Ambedkar for the upliftment of marginalized through constitutional safeguards and provisions, have discussions on access to opportunities in society closer to the ideal equalities to everyone.
- Encourage the students to use affirmative actions in day today life. It helps them to develop positive personality. Ask them to list out the experiences.
- Conduct the discussions on marginalized groups like scheduled caste and scheduled tribes and women. Ask them to gives suggestions.
- Encourage the students to conduct surveys about beneficiaries of government policies and programs among marginalized.

Unit-3

- Students can be list out the opportunities provided by Government and analyze why marginalized groups unable to utilize the opportunities.
- Make report on role of education and migration among marginalized groups and to explain the positive and negative impact of migration,
- Collect the information regarding responses among marginalized groups, how privatization brings income inequality and larger privatization correlates with lower individual income.
- Encourage the students for discussion on how globalization helps to bring social justice. These groups make use of equal facilities to uplift their position in society with equal social justices. Students should be asked to gather information about the current socio economic status of marginalized people and suggest some welfare programs to the local authorities.

- Students can be encouraged to educate the marginalized communities about their rights and remedies as per constitution of India.
- Students can be asked to participate in outreach programs conducted by various educational and NGO's for poor and marginalized group of people by visiting Hospitals, Old age Homes, and Orphanages.

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentationby students

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

Semester IV

DSE 8 **Population and Society**	
Total Contact Hours: 42	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Students can understand the concept of population, Density of population, Distribution of population, they come to realize how the population play important role in society.
2. Understand the dynamics of population from sociological perspectives
3. Understand problems around India's population
4. Able to demonstrate knowledge and understand the factors which influence fertility, Mortility, migration and its consequences.
5. Critically analyze population policies of India

DSE 8: Population and Society	**42 Hrs**
Unit – 1 Introduction	**14**
Chapter No. 1. Relationship between society and population.	
Chapter No.2. Global Population Trends: Fertility, Mortality and Migration; Power of Doubling; Demographic Profile of India and differentstates	
Chapter No.3. Age and Sex Structure: Defining Age and Sex, Sex Ratio and Sex Ratio at Birth; Socio-economic Impact of Age and Sex Structure; Demographic Dividend	
Unit – 2 Sources of Demographic Data	**14**
Chapter No. 4. Population Census: Uses and Limitations; Indian Censuses	
Chapter No.5. Vital Registration System	
Chapter No.6. National Sample Survey; Sample Registration System;National Family Health Surveys (NFHS)	
Unit – 3 Population Theories and Policy	**14**
Chapter No.7. Population Theories: Malthusian Theory, Optimum Theoryof Population and Demographic Transition Theory	
Chapter No.8. Population Policy: Millennium Development Goals(MDG), Sustainable Development Goals(SDG)	
Chapter No.9.; Population Policy of India; Programmes and theirEvaluation	

Suggested Internet Resources

Unit 1

https://www.nap.edu/read/9543/chapter/6
https://www.cartercenter.org/resources/pdfs/health/ephti/library/lecture_notes/health_science_students/population_development.pdf
https://courses.lumenlearning.com/boundless-sociology/chapter/population-growth/
https://www.un.org/en/global-issues/population
https://ourworldindata.org/world-population-growth https://zenodo.org/record/1131471#.YgrjuS8RqTc
Power of Doubling

Unit 2

https://www.sociologydiscussion.com/demography/3-main-sources-of-demographic-data- in-india/3054
http://www.demographie.net/demographicdata/
https://unstats.un.org/unsd/demog/docs/symposium_03.htm https://censusindia.gov.in

Unit 3

https://courses.lumenlearning.com/alamo-sociology/chapter/reading-demographic- theories/
Lutz, Wolfgang. "A Population Policy Rationale for the Twenty-First Century." Population and Development Review, vol. 40, no. 3, Population Council, 2014, pp. 527–44, http://www.jstor.org/stable/24027903
https://www.encyclopedia.com/social-sciences/encyclopedias-almanacs-transcripts-and-maps/population-policy
https://www.un.org/en/development/desa/population/publications/pdf/policy/WPP2015/WPP2015_Highlights.pdf
https://www.cairn-int.info/article-E_ETU_4175_0441--the-role-of-population-policies.htm

Text Books

- Agarwal, S.N. (1989) Population Studies with Special Reference to India. New Delhi, Lok Surjeet Publication.
- Bhende, A. A., and Kanitkar, T. (2019) Principles of population studies. Bombay, Himalaya Pub.House.
- Bogue, D. J. (1969) Principles of demography. New York: Wiley.
- Bose, Ashish (1991) Demographic Diversity in India, B.R. Publishing Corporation Delhi
- Bose, Ashish. 2001. Population of India, 2001 Census Results and Methodology, B.R. PublishingCorporation. Delhi.
- Census of India Report, GOI, New Delhi.
- Kingsley Davis. (1951) The Population of India and Pakistan. Princeton, N. J.: Princeton Univ. Press.
- Kirk, Dudley. 1968. 'The Field of Demography', in Sills, David. ed. International Encyclopaedia of the Social Sciences. The Free Press and Macmillan. New York.
- Ram Ahuja. (1992) Social problems in India. Jaipur, Rawat Publications.
- Visaria, Pravin and Visaria, Leela. 2003. 'India's Population: Its Growth and Key Characteristics', in Das, V. ed. The Oxford India Companion to Sociology and Social Anthropology. Oxford University Press. Delhi.

Suggested Activities:

UNIT-1

- Encourage the students to prepare the note about global population. They can able to understand the fertility differences in various countries.
- Arrange the group discussion influence on mortality rate, postponement of death etc
- Inform the students to list out the causes of migration, types of migration and its consequences.

- Explain the students about age, sex structure of a population, how the number of females and male in different age groups. Through this they can understand the population pyramid and projection
- Students can able to understand the distribution of people in various age groups. How the age and sex structure influence of growth of population. They know how policy makers can prepare the population trends at the time of policy making.

UNIT-2

- Encourage the students to discuss about the advantages of census, how the statically analysis, how it helps to policy makers to adopt policy about child-wellbeing, health, safety, family and community and development.
- Students can be made an effort to collect information regarding National Sample Survey, how to do this survey , Advantages and Disadvantages of this Survey, MSSO conducts nationwide Sample Survey.
- Students can discuss about NSSO and it's functions like- Socio-economic Statistical Data, Employment and Unemployment, condition, Domestic tourism, Drinking Water, Sanitation, Social Consumption, Health, Domestic Tourism etc.., that helps to get good knowledge about Population Survey.
- NFHS Survey regarding large scale multi-round survey, house-hold survey can be collected and analyzed.
- A report can be prepared by students about the National Family Health Survey and it's importance to understand it's necessity in the society.

Unit-3

- Students can be encouraged to understand various theories regarding population. Try to know importance of Malthusian theory in the development of population in society.
- A discussion can be conducted on optimum theory, how it helps to improve the knowledge, skill, capital equipment etc. in production, these all increases the knowledge of students regarding optimum theory.
- An exercise can be conducted among students to do survey in their locality, to collect the information regarding adoption of family planning policy.
- Drama or Role play can be conducted by students about the problems of over population, adoption of family planning, attitude towards the government policies and programmes.
- A discussion/Assignment can be given to collect the information regarding national and International agencies in population policy, how they have controlling mechanisms to control population in their countries.
- Students can be encouraged to share their views on world population conferences. How conferences provides information and knowledge about population policies etc.
- Encourage the students to visit villages and communities to collect the information regarding population policies of government and programmes and facilities for adoption of policies. Bring awareness about population controlling among illiterates.

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentation by students

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

Semester IV
Open Elective

Title of the Course:

OE 4.1: Sociology of Leisure		OE 4.2: Sociology of Food Culture		OE 4.3: Current Social Problems	
Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester
3	39	3	39	3	39

OE 4.1: Sociology of Leisure	
Total Contact Hours: 39	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. Describe the concept of leisure, associated terms and types
2. Understand the relationship between leisure and stratification
3. Analyze the impact of commodification of leisure

OE 4.1: Sociology of Leisure	39 Hrs
Unit – 1 Introduction	**13**
Chapter No. 1. Definition of Leisure and its attributes; need for the study of leisure as social activity	
Chapter No.2. Leisure, Recreation, Play, Pleasure and Leisure Identity; Leisure, Work and Post work	
Chapter No.3. Types of Leisure: Serious, Casual, Postmodern, Therapeutic	
Unit – 2 Constraints on Leisure Participation	**13**
Chapter No. 4. Class Inequality and Exclusion from Leisure Participation	
Chapter No.5. Leisure Participation and Gender Relations - Leisure and Beauty System	
Chapter No.6. Leisure Participation, Age and Disability	
Unit – 3 Commodification of Leisure	**13**
Chapter No.7. Cinemas, OTTs and Reality T V	
Chapter No.8. Leisure and Sports - Adding Leisure Value like branded goods (Sony Walkman, iPod, Nike, Coke etc.); Malls as areas of leisure	
Chapter No.9. Social Media as Leisure Activity - Role in Identity Building	

Note: This OE Papers Shall be taught by Sociology Teachers

Suggested Internet Resources

Unit 1

https://www.encyclopedia.com/social-sciences/dictionaries-thesauruses-pictures-and-press-releases/leisure-sociological-studies
J Wilson Sociology of Leisure Annual Review of Sociology 1980 6:1, 21-40, https://www.annualreviews.org/doi/abs/10.1146/annurev.so.06.080180.000321?journalCode=soc
https://digital.lib.washington.edu/researchworks/handle/1773/5584 A Revised Sociology ofLeisure
https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1468-232X.1962.tb00658.x The Sociology ofLeisure: Some Suggestions
https://www.cambridge.org/core/services/aop-cambridge-core/content/view/BEFB7723CC9F9D737FD9FB97C743DFD0/S1834490913000068a.pdf/div-class-title-leisure-type-leisure-satisfaction-and-adolescents-psychological-wellbeing-div.pdf
http://samples.jbpub.com/9781284034103/9781449689568_CH01_Secure.pdf Recreation and Leisure

Unit 2

https://www.acrwebsite.org/volumes/9547 Social Class Determinants of Leisure Activity
https://www.tandfonline.com/doi/abs/10.1080/01490407809512889?journalCode=ulsc20 Social Differences in Leisure Behaviour
https://inequalitiesblog.wordpress.com/2011/07/07/leisure-inequality---what-do-the-poor-and-non-poor-do-for-fun/
https://www.researchgate.net/publication/286355204_Gender_Identity_Leisure_Identity_and_Leisure_Participation
https://core.ac.uk/download/pdf/345078391.pdf Gender differences in leisure-need activitypatterns
https://www.researchgate.net/publication/233269125_Leisure_Participation_and_Enjoyment_Among_the_Elderly_Individual_Characteristics_and_Sociability
https://www.researchgate.net/publication/348667192_Leisure_and_recreation_for_disabilities

Unit 3

https://www.researchgate.net/publication/240709477_Cinema_halls_locality_and_urban_life
https://www.researchgate.net/publication/343473867_A_Study_OTT_Viewership_in_Lockdown_and_Viewer%27s_Dynamic_Watching_Experience
http://164.100.47.193/Reciput/New_Reference_Notes/English/16072021_150800_102120526.pdf Emergence of OTT platforms in India
https://www.ijrar.org/papers/IJRAR2001475.pdf
http://gmj.manipal.edu/issues/june2020/2%20Cinema%20viewing%20in%20the%20time%20of%20OTT.pdf
https://www.researchgate.net/publication/326809710_Leisure_Sport_Activities_and_Their_Importance_in_Living_a_Healthy_Physical_and_Psycho-Social_Lifestyle
https://www.researchgate.net/publication/292799133_The_effects_of_social_media_on_leisure
https://dergipark.org.tr/tr/download/article-cile/230009 The Role of Social Media on Leisure Preferences
Lin C.A., Atkin D. (2014) Social Media and Leisure. In: Michalos A.C. (eds) Encyclopedia of Quality of Life and Well-Being Research. Springer, Dordrecht. https://doi.org/10.1007/978-94-007-0753-5_1623
https://www.tandfonline.com/doi/full/10.1080/10941665.2020.1859057 Social media, space and leisure in small cities

Reference Books

- Best, Shaun 2010, Leisure Studies: Themes and Perspectives, Sage, New Delhi
- Harris, David 2005, Key Concepts in Leisure Studies, Sage, New Delhi
- Rojek, Chris 2000 Leisure and Culture, Palgrame Macmillan, New York
- Rojek, Chris and others 2006, A Handbook of Leisure Studies, Palgrave Macmillan, NewYork
- Spracklen, Karl 2015 Digital Leisure, the Internet and Popular Culture, PalgraveMacmillan, New York

Suggested Activities:

- Conduct discussion in the class room on the concept of leisure from individual perspective
- Ask them note down varies types of Leisure in Indian Society.
- Make the students to write about the relationship between religion and leisure, Cast and Leisure, Class and Leisure, Women and Leisure and Elderly and Leisure.
- Have discussions on Impact of globalization on Leisure activity
- Students can prepare report on how urban and rural people engage in leisure activities, how much time, money spent for leisure activities.

Refer the following books for the other activities

- Johnston, Josee and others 2017, Introducing Sociology: Using the Stuff of Everyday Life, Routledge, London
- McKinney, Kathleen and Barbara S Heys (Eds) 2009, Sociology Through Active Learning, 2nd Edition, Pine Forge Press, New Delhi
- White, Shelley K and others (Eds) 2015, Sociologists in Action on Inequalities, Sage, New Delhi

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentation by students

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

B.A.
Semester IV

OE 4.2: Sociology of Food Culture	
Total Contact Hours: 39	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:
At the end of the course the student should be able to:

1. Appreciate the complex relations between food, individual and society
2. Understand the evolution of food production and consumption from household toindustry
3. Demonstrate knowledge of Food and Culture from Sociological perspectives.
4. Understand the production, distribution and Consumption of Food and its reflection in Social Patterns and inequalities.
5. Critically understand the relationship between food and risk society
6. Demonstrate a general knowledge and comprehension of food and culture from a sociological perspective, and understand food through the sociological imagination. Learning outcome:

OE 4.2: Sociology of Food Culture	**39 Hrs**
Unit – 1 Introduction	**13**
Chapter No. 1. Sociological Nature of Food and Eating; Sacred and Taboo Foods; Food, Sociality and Social Change	
Chapter No.2. Determinants of Food Consumption - Types of Food:Vegetarian, Non-vegetarian, Omnivore and Vegan	
Chapter No.3. Local Food Cultures and Taste for Exotic food	
Unit – 2 Food from Domestic to Industry	**13**
Chapter No. 4. Industrialization of Food Production and Distribution	
Chapter No.5. Hotels, Restaurants and Catering Sector	
Chapter No.6. Cooking for self-pleasure	
Unit – 3 Food and Risk Society	**13**
Chapter No.7. Diet and Body: Social Appearance and Beauty	
Chapter No.8. Global Overview: Consumption: Patterns and Reasons;Overeating, Undereting and Hunger	
Chapter No.10. Genetically modified Foods(GM), Organic Foods and Modern Food Practices as Risk Factor	

Note: This OE Papers Shall be taught by Sociology Teachers

Suggested Internet Resources

Unit 1

https://www.researchgate.net/publication/313215444_The_Sociology_of_Food_Eating_and_Place_of_Food_in_Society
https://apps.who.int/iris/bitstream/handle/10665/330447/WH-1996-Mar-Apr-p10-12-eng.pdf?sequence1 Food Beliefs and Taboos
https://journals.sagepub.com/doi/pdf/10.1177/1440783310384448 An article on : ASociology of Food and Eating: Why Now?
Gofton, L. (1989), "Sociology and Food Consumption", British Food Journal, Vol. 91 No. 1,pp. 25-31. https://doi.org/10.1108/00070709010133766
https://www.e3s-conferences.org/articles/e3sconf/pdf/2021/30/e3sconf_farba2021_10027.pdf An article on Sociology of Nutrition
Sylvia Sherwood, Sociology of food and eating: implications for action for the elderly, TheAmerican Journal of Clinical Nutrition, Volume 26, Issue 10, October 1973, Pages 1108–1110, https://doi.org/10.1093/ajcn/26.10.1108
https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1467-9566.2008.01128.x Food andEating as Social Practice
https://doi.org/10.1186/2044-7248-4-6
https://www.aabri.com/manuscripts/141797.pdf Food and identity: Food studies,cultural, and personal identity

Unit 2

https://www.foodsystemprimer.org/food-production/industrialization-of-agriculture/
https://www.alimentarium.org/en/magazine/society/industrialisation-food-creates- unease
https://pubs.iied.org/sites/default/ciles/pdfs/migrate/9338IIED.pdf Food Industrialisation and Food Power: Implications for Food Governance
https://www.oxfordreference.com/view/10.1093/oi/authority.20110803095827139
Wood, R.C. (1990), "Sociology, Gender, Food Consumption and the Hospitality Industry",British Food Journal, Vol. 92 No. 6, pp. 3-5. https://doi.org/ 10.1108/00070709010001861
sci-hub.se/10.1111/j.1470-6431.1991.tb00672.x The Shock of the New: A Sociology ofNouvelle Cuisine

Meike Brückner, Sandra Grajić & Christine Bauhardt (2021) Reclection: Food as pleasure or pressure? The care politics of the pandemic, Food and Foodways, 29:3, 289-298, DOI: 10.1080/07409710.2021.1943612; https://www.tandfonline.com/doi/pdf/10.1080/07409710.2021.1943612
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8071848/ Well-Being and Cooking Behaviour

Unit 3

Wood, R.C. (1990), "Sociology, Gender, Food Consumption and the Hospitality Industry",British Food Journal, Vol. 92 No. 6, pp. 3-5. https://doi.org/ 10.1108/00070709010001861
https://research-information.bris.ac.uk/ws/portalciles/portal/133940034/Sociology_cinal_published1039.full.pdf Positioning Food Cultures: Alternative Food as Distinctive Consumer Practice
https://www.uakron.edu/sociology/faculty-staff/rp/Thinking%20Sociologically%20about%20Sources%20of%20Obesity%20in%20the%20United%20States.pdf Thinking Sociologically about Sources of Obesity in America
https://www.fao.org/3/i7846e/i7846e.pdf Nutrition and Food Systems:A Report by HighLevel Panel of Experts

Reference Books

- Beardsworth, Alan and Teresa Keil, 1997, Sociology on the Menu: An invitation to the study offood and society, Routledge, London
- Beck, Ulrich 1992, Risk Society: Towards a New Modernity, Sage Publications Carolan, Michael, 2012, The Sociology of Food and Agriculture, Routledge, LondonFood Marketing to Children and Youth, 2006, Institute of

Medicine, USA
- German, John and Lauren Williams (Eds) 2017, A Sociology of Food and Nutrition: The socialappetite, Oxford University Press, Australia
- McIntosh, Wm.Alex, 1996, Sociologies of Food and Nutrition, Springer, New YorkMurcott, Anne (Ed) 1983, The Sociology of Food and Eating, Digitised by Google
- Poulain, Jean-Pierrre, 2017, The Sociology of Food: eating and the place of food in society, Trby Augusta Dorr, Bloomsbury, UK
- Rastogi, Sanjeev (Ed) 2014, Ayurvedic Science of Food and Nutrition, Springer, New York

Suggested Activities:

- Conduct discussions on the Food patterns in the context of culture – religion, cast, class and region.
- Ask the students to make a note on vegan and exotic Food.
- Conduct discussion and seminar on balance diet, beauty and diet, Food and obesity.
- Students can be asked to arrange a food fest expo for the various communities living in surrounding for making people understand one another cultural relevance of food practice.
- Students be asked to Arrange a discussions with a officials of school and other institutions to understand the quality of food distributed and healthy practices to be inculcated .
- Students can be asked Arrange a sessions on food hygiene, healthy practices and its impact on social development .
- Have critical discussions on the relationship between social institutions, food practices and identities.

Refer the following books for other activities

- Johnston, Josee and others 2017, Introducing Sociology: Using the Stuff of Everyday Life,Routledge, London
- McKinney, Kathleen and Barbara S Heys (Eds) 2009, Sociology Through Active Learning, 2nd Edition, Pine Forge Press, New Delhi
- White, Shelley K and others (Eds) 2015, Sociologists in Action on Inequalities, Sage, New Delhi

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentationby students

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

Semester IV

OE 4.3: Current Social Problems	
Total Contact Hours: 39	**Course Credits: 3**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60**
Duration of ESA/Exam: 2 hours	

Course Outcomes:

At the end of the course the student should be able to:

1. To understand about the Nature of Social Problems.
2. Critically examine Social problems with Sociological Perspectives and understand how problems or Socially constructed
3. Explain the Social issues and solutions for the current Social problems.
4. To understand the Causes and consequences of the Crimes in India.
5. To understand the Nature of Vulnerable Problems of Life.
6. Prepare for the National and State level competitive examinations

OE 4.3: Current Social Problems	39 Hrs
Unit – 1 Social Problems	**13**
Chapter No. 1. Definition and Nature of Social Problems, Causes and Consequences of Social Problems	
Chapter No.2. Social Organization and Disorganization	
Chapter No.3. Crime and Delinquency- Types of Crime, Causes and Consequences	
Chapter No.4. Changing Aspects of Crime and Criminals: White Collar Crime, Criminalization of Politics and Communalism	
Chapter No.5. Measures to Control Crime	
Unit – 2 Problems of Disadvantaged groups	**13**
Chapter No.6. Atrocities on Untouchables	
Chapter No.7. Domestic Violence, Dowry , Rape and Sexual Abuse of Female, Female Foeticide and Infanticide	
Chapter No.8. Juvenile Delinquency, Child Abuse and Child Labour	
Chapter No.9. Youth Unrest, Youth and Drug Addiction	
Chapter No.10. Problems of Aged	
Unit – 3 Corruption and Terrorism	**13**
Chapter No.11. Corruption: Definition, Types of Corruption	
Chapter No.12. Causes and Consequences of Corruption	
Chapter No.13. Terrorism: Meaning, Causes and Effects: Measures to Control Corruption and Terrorism	

Note: This OE Papers Shall be taught by Sociology Teachers

References:

- Ahuja Ram (1998): Social Problems in India. Rawat Publication, Jaipur.
- Davis James (1970): Social Problems Enduring Major Issues and Change, New York: Free Press.
- Elliot and Merril (1950): Social Disorganization. New York: Harper and Brothers.
- Gill SS (1998): The Pathology of Corruption. New Delhi: Harper Collin Publishers.
- Karavala Perin C (1959): A Study in Indian Crime. Bombay Popular Book Depot.
- Madan G.R. (1994): Indian Social Problems. New Delhi Allied Publishers.
- Memoria C.B. (1999): Social Problems and Social Disorganization New Delhi: Kitab Mahal.
- Ministary of Home Affairs (1998): Crime in India. New Delhi: Govt. of India.
- Medon Robert K and Robert Nisbert (1976): Contemporary Social Problems. New York: Harcourt Brace, Jovavich Ink.
- Reid Suetitus (1976): Crime and Criminology. Illinois: Deyden Press.
- Sutherland Edwin H and Donald R Cressey (1968): Principles of Criminology Bombay Times of India Press.
- Thomas G (1994): AIDS in India Myth and Reality. Jaipur: Rawat Publications.

Suggested Activities:

- Students can be asked to create awareness about social evil and menace in common people by demonstrating street act.
- Students should be directed to Educate Children's women and old age and marginalized groups about their Rights and Remedies granted under Constitution of India.
- Organizing Marathon on themes related to social issues relevant to the respective demography.
- Arranging Social fest in college by the students preparing posters, models, crafts, paintings, to educate the visitors about of social solidarity, social equality, humanity, cultural values and social responsibilities and other related aspects.
- Formation of clubs in colleges having named the most prominent social reformers and social workers of India.
- Students should be guided to enroll in rescue operations during natural calamities occurring due to heavy rain fall and landslides fire and arson situations to support fire and safety and other disaster management rescue teams.
- Organize Environmental friendly events to clean and promote health and hygiene.
- Students can write a note about caste inequalities and class inequalities, problems such as unemployment, poor income and housing, poor health, breakdown in family etc.
- Students can be taken to NGO's to discuss various social problems and innovative ideas followed by them to curb the social problems.

Refer the following books for other activities

- Johnston, Josee and others 2017, Introducing Sociology: Using the Stuff of Everyday Life,Routledge, London

- McKinney, Kathleen and Barbara S Heys (Eds) 2009, Sociology Through Active Learning, 2nd Edition, Pine Forge Press, New Delhi
- White, Shelley K and others (Eds) 2015, Sociologists in Action on Inequalities, Sage, New Delhi

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentationby students

Formative Assessment	
Assessment Occasion/type	**Weightage in Marks**
Activities	20
Written Test	20
Total	40

Teachers can adopt best of three or best of five principles for both activities and written test

EXAMINATION PATTERN	
PAPERS	**QUESTION PAPER PATTERN**
Theory Paper – 60 Marks	❖ Theory Paper has Three Parts. ➢ Part – A 5×2=10 ➢ Part – B 4×5=20 ➢ Part – C 3×10=30
Internal Assessment – 40 Marks	❖ Two Internal Assessment Tests 20 Marks (10 Marks each)
	Suggested Activities (20 Marks) ❖ Seminars; Group Discussions, Assignment ❖ Field Work, Micro Project, role play Written/Oral Presentation, etc.
Duration of the Theory Paper	❖ Two (02) Hours

Question Paper Pattern

SOCIOLOGY

NEP-2020

B.A. Degree Examination (Regular)

Paper: _____

Time: 2 Hours **Max. Marks: 60**

Instruction: 1) Answer All the Section

Part-A

Answer Any Five of the Following **5×2=10**

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Part-B

Answer Any Four of the Following **4×5=20**

8. _____
9. _____
10. _____
11. _____
12. _____
13. _____

Part-C

Answer Any Three of the Following **3×10=30**

14. _____
15. _____
16. _____
17. _____
18. _____

RANI CHANNAMMA UNIVERSITY, BELAGAVI

Vidyasangama, N.H. 04, Belagavi- 591156. Karnataka

NAAC Accredited with B^+ Grade - 2021

DEPARTMENT OF SOCIOLOGY

SYLLABUS

For

Undergraduate Programme in

Sociology 5th and 6th Semester

2023-24

Content
for
Undergraduate Programme in Sociology

Board of Studies (UG) in Sociology, RCU, Belagavi

S. No.	Name of the Faculty	Designation
1	**DR. SUMANTH S. HIREMATH** Associate Professor and Chairman Dept. of Sociology Rani Channamma University, Belagavi	**Chairman**
2	**DR. RUQQIA HASHMI** Assistant Professor of Sociology Anjuman Arts Science and Commerce College Vijayapur	**Member**
3	**DR. SHANTA Y. BANGARI** Assistant Professor of Sociology Government First Grade College Ainapur- 591303. Dist.: Belagavi	**Member**

CHAIRMAN
BoS (UG) Sociology
Rani Channamma University
Belagavi

Listing of Courses in

SOCIOLOGY for V & VI SEMESTERS:

TWO (2) MAJOR SUBJECTS

(Model A3-1)

Semester	Course Category	Course Code	COURSE TITLE	Credits Assigned	Instructional Hours Per Week	
					Theory	Practical
V	DSC	SOC C9	SOCIAL ENTREPRENEURSHIP	4	4	-
		SOC C10	SOCIETY AND TRIBES	4	4	-
		SOC C11	STATISTICS FOR SOCIOLOGICAL RESEARCH	4	4	-
V	SEC	SOC C12	SOCIAL SKILLS AND CAREER DEVELOPMENT	3	2	-
VI	DSC	SOC C13	SOCIOLOGICAL PERSPECTIVES	4	4	-
		SOC C14	SOCIOLOGY OF HEALTH	4	4	-
		SOC C15	SOCIETY IN KARNATAKA	4	4	-
VI		SOC C16	INTERNSHIP/ DISSERTATION	2	2	-

Curriculum Structure for the Undergraduate Degree Program BA

Total Credits for the Program: 24/26 **Starting year of implementation: 2023**

Name of the Degree Program: B.A. **Discipline/Subject: Sociology**

Title of the Course: (B.A. - 5th and 6th Semesters)

Course: DSC SOC C9 – SOCIAL ENTREPRENEURSHIP		Course: DSC SOC C10- SOCIETY AND TRIBES	
Number of Theory Credits	Number of Lecture Hours/Semester	Number of Theory Credits	Number of Lecture Hours/Semester
4	60	4	60

Course: DSC SOC C11 – STATISTICS IN SOCIOLOGICAL RESEARCH		Course: SEC SOC C12 – SOCIAL SKILLS AND CAREER DEVELOPMENT	
Number of Theory Credits	Number of Lecture Hours/Semester	Number of Theory Credits	Number of Lecture Hours/Semester
4	60	3	45

Course: DSC SOC C13 – SOCIOLOGICAL PERSPECTIVES		Course: DSC SOC C14 – SOCIOLOGY OF HEALTH	
Number of Theory Credits	Number of Lecture Hours/Semester	Number of Theory Credits	Number of Lecture Hours/Semester
4	60	4	60

Course: DSC SOC C15 – SOCIETY IN KARNATAKA		Course: SOC C16 – INTERNSHIP/ DISSERTATION	
Number of Theory Credits	Number of Lecture Hours/Semester	Number of Theory Credits	Number of Lecture Hours/Semester
4	60	2	50

PROGRAMME ARTICULATION MATRIX:

This matrix lists only the core courses. Core courses are essential to earn the degree in that discipline/subject. They include courses such as theory, laboratory, project, internships etc. Elective courses may be listed separately.

OBJECTIVES OF COURSES:

Semester	Course Code	Title / Name of the Course	Programme Outcomes that the Course Addresses (not more than 3 per course)	Pre-requisite course (s)	Pedagogy #	Assessment ##
5	**DSC – SOC C9**	**SOCIAL ENTREPRENEURSHIP**	1. Understand the scope and need for social entrepreneurship 2. Plan and implement socially innovative ideas 3. Equip themselves to establish social enterprise or non-profit organisation	B A 2nd Year Courses	Experiential learning (activity-based learning)	Oral or written presentations to assess analysing capability, creativity and communication skills
5	**DSC – SOC C10**	**TRIBAL SOCIETY**	1. Understand and appreciate the social organisation among the tribal community 2. Assess the impact of social changes on tribal social life 3. Communicate their micro research work effectively to the society	B A 2nd Year Courses	Micro projects Activity based learning	Presentation of micro projects Questions asked and answered

5	**DSC – SOC C11**	**STATISTICS IN SOCIOLOGICAL RESEARCH**	1. Use appropriate research method 2. Use appropriate statistical techniques 3. Summarise data, examine relationships among variables	B A 2nd Year Courses	Experiential learning (activity-based learning)	Oral or written presentations to assess problem solving capability
5	**SEC – SOC C12**	**SOCIAL SKILLS AND CAREER DEVELOPMENT**	1. Develop interpersonal skills for career readiness 2. To inculcate social etiquettes 3. To up skill and create career pathways	B A 2nd Year Courses	Experiential learning (activity-based learning)	Oral/ written presentations to assess analysing capability, creativity and interpersonal skills
6	**DSC – SOC C13**	**SOCIOLOGICAL PERSPECTIVES**	1. Appreciate the significance of major Sociological theories 2. Able to use fundamental theoretical categories 3. Understand the nuance of sociological perspectives and concepts	B A 2nd Year Courses	Lectures and Discussions	Oral or written presentations to assess analysing capability, creativity and communicatio n skills

6	**DSC - SOC C14**	**Sociology of Health**	1. Appreciate the significant relationship between society and health 2. Distinguish between health, well-being, illness and disease 3. Critique the role of medical doctors, paramedics, pharmaceutical industry and social institutions in maintaining and promoting health	B A 2nd Year Courses	Lectures and Discussions	Oral or written presentations to assess analysing capability, creativity and communicatio n skills
6	**DSC - SOC C15**	**SOCIETY IN KARNATAKA**	1. Acquaint and appreciate the cultural items of Karnataka 2. Critique the social changes occurring in Karnataka 3. Usefulness of sociological study in the contemporary society	B A 2nd Year Courses	Lectures and Discussions	Oral or written presentations to assess analysing capability, creativity and communicatio n skills
6	**SOC C16**	**INTERNSHIP/ DISSERTATION**	-	B A 2nd Year Courses	Experiential learning or field based project activity	Dissertation / Presentation

Pedagogy for student engagement is predominantly lectures. However, other pedagogies enhancing better student engagement to be recommended for each course. The list includes active learning/ course projects/problem or project based learning/ case studies/self study like seminar, term paper or MOOC

Every course needs to include assessment for higher order thinking skills (Applying/ Analyzing/ Evaluating/ Creating). However, this column may contain alternate assessment methods that help formative assessment (i.e. assessment for learning).

B.A. Semester V

Course Title: SOCIAL ENTREPRENEURSHIP	
Total Contact Hours: 60	**Course Credits: 04**
Formative Assessment Marks: 40	**Duration of ESA/Exam: 03 hours**
Model Syllabus Authors:	**Summative Assessment Marks: 60**

Course Objectives:

- To induce the concept of social entrepreneurship
- To motivate and guide towards start-up and business plans
- To help in innovation and incubation towards the start-up ecosystem

Course Outcomes (COs) for DSC 9:

At the end of the course the student should be able to:

- Understand the scope and need for social entrepreneurship
- Plan and implement socially innovative ideas
- Equip themselves to establish social enterprise or non-profit organisation

Articulation Matrix for Course 9:

Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Understand the scope and need for social entrepreneurship	X		X	X				X	X
Plan and implement socially innovative ideas			X	X	X	X			X
Equipped to start their own social enterprise or non for profit organisation							X	X	X

DSC SOC C9 - Content of Course: SOCIAL ENTREPRENEURSHIP		60 Hours
UNIT – I	**FUNDAMENTALS OF SOCIAL ENTREPRENEURSHIP**	15
Chapter 1 Social Entrepreneurship: Meaning, Features and Relevance; Social Business: Meaning; Difference between Social Entrepreneurship and Social Business; Relationship between Social Entrepreneurship and Social Change **Chapter 2** Typology of Ventures: Social Purpose Ventures, Social Consequence Entrepreneurship, Profit & Non-Profit Models of Social Entrepreneurship **Chapter 3** Identifying social business opportunities		
UNIT – II	**ESTABLISHMENT OF NON-PROFIT ORGANISATIONS**	15
Chapter 4 Concept (includes Non-Government Organisations), Objectives and establishment of Non-Profit Organisations (NPOs) **Chapter 5** Legal Procedure for establishment of NPOs: Societies Registration Act, Indian Companies Act, Charitable Endowments Act, Foreign Contribution (Regulation) Act (FCRA); Available Tax Reliefs **Chapter 6** Social Values of NPOs: Mission and Vision; MoA and Bye-Laws		
UNIT - III	**MANAGEMENT AND FINANCING**	15
Chapter 7 Human Resource Management: Staffing Plan, Social Security of Workers: Provisions and Benefits of Gratuity Act; Rules and Regulations of EPF Scheme **Chapter 8** Project Management: Definition of Concept: Identification of Project; Proposal Development: Basic Factors, Project Proposal Guide; Budget, Rationale for sending Project Proposal to the Donor; Proposal Writing; Do's and Don'ts of a Project Proposal **Chapter 9** Financing: Sources of Finance: Government, Donors, International Agencies; Documents Used in Fund Raising; Due Diligence; Campaigns; Internal Income Generation		

UNIT - IV CASE STUDIES	15
Chapter 10 Pratham, RUDSET, Vivekananda Girijana Kalyana Kendra, B.R. Hills, etc. **Chapters 11 & 12** Students should study the functioning of a local NPO, present their ideas in a seminar and submit a report (For example working in the areas of Sanitation, Rural Development, Women Empowerment, etc.)	

SUGGESTED INTERNET RESOURCES

Unit 1

- https://www.un.org/development/desa/youth/wp-content/uploads/sites/21/2020/10/WYR2020-Chapter1.pdf
- https://www.adb.org/sites/default/files/institutional-document/826606/adou2022bn-social-entrepreneurship-definition-philippines.pdf
- https://web.mit.edu/sloan2/dese/readings/week01/Martin_Osberg_SocialEntrepreneurship.pdf
- https://entreprenorskapsforum.se/wp-content/uploads/2013/03/WP_09.pdf
- https://business.expertjournals.com/ark:/16759/EJBM_710mthembu147-177.pdf
- https://isfcolombia.uniandes.edu.co/images/201519/LRD32.pdf
- https://www.hec.edu/en/faculty-research/centers/society-organizations-institute/think/so-institute-executive-factsheets/what-social-business
- https://socialtrendspot.medium.com/what-is-the-difference-between-social-innovation-social-enterprise-social-entrepreneurship-fe3fce7bf925
- https://www.albany.edu/faculty/miesing/teaching/socent/3 Recognizing Social Opportunities.pdf

Unit 2

- http://eprints.lse.ac.uk/29032/1/cswp3.pdf Defining the non-profit sector
- https://prosper-strategies.com/seven-nonprofit-core-values-examples/

Unit 3

- https://www.intechopen.com/chapters/55499
- https://www2.fundsforngos.org/cat/project-planning-and-development/#:~:text=Project Planning: Project development is, lot of research and planning.
- https://www.pm4dev.com/resources/manuals-and-guidelines/117-guide-for-ngo-s-project-preparation-and-management-euroaid/file.html
- http://www.pm4ngos.org/wp-content/uploads/2015/05/PMD_Pro_Guide_2e_EN_USLetter.pdf

REFERENCE BOOKS:

- Bornestein, David. (2007). How to change the world: Social entrepreneurs and the power of new ideas, Oxford University Press
- Carlson, Eric J and James Koch (2018). Building a successful social venture: A guide for social entrepreneurs. Berrett-Koehler Publishers Inc, California

- Dees, Gregory and Others (2002). Enterprising Non-profits - A toolkit for social entrepreneurs. John Wiley and Sons
- Drucker, Peter. (1990). Managing the Non-profits organisations: Practices and principles. Harper Collins
- Durieux, Mark B. and R.A. Stebbins. (2010). Social entrepreneurship for dummies. Wiley Publishing Inc., New Jersey
- Hoggard, S. (2005). The business idea. Springer, Berlin
- Lynch. Kevin and Julius Walls Jr. (2009). Mission inc.: The practitioner's guide to social enterprise. Berrett-Koehler Publishers Inc, California
- Mohanty, S.K. (2005). Fundamentals of entrepreneurship. Eastern Economy Edition, Prentice-Hall India, Delhi
- Next, Heidi and Others. (2019). Entrepreneurship: Practice and mindset. Sage Publications, Delhi
- Nicholls, Alex. (2006). Social entrepreneurship: New models of sustainable change. Oxford University Press
- Praszkier, Ryszard and Andrzej Nowak. (2011). Social entrepreneurship: Theory and practice. Cambridge University Press, Delhi
- Ruef, Martin. (2007). Sociology of entrepreneurship. Emerald Publishing Limited.
- Sawang, Sukanlaya. (2020) Entrepreneurship education: A lifelong learning approach. Springer
- Sharma, Sangeetha. (2016). Entrepreneurship development. Eastern Economy Edition, Prentice-Hall India, Delhi
- Sunder, Pushpa. (2013). Business and community: The story of corporate social responsibility in India, Sage
- Swedberg, Richard. (Ed) (2000). Entrepreneurship: The social science view. Oxford University Press, London

Pedagogy: Field work, micro projects, group discussion, role play, written/oral presentation by students

Formative Assessment	
Assessment Occasion/ Type	**Weightage in Marks**
Fieldwork as per Chapter 11 and 12 of Unit 4	30
Written Test	10
Total	**40**

Teachers can adopt best of three or five principles for both activities and written test.

B.A. Semester V

Course Title: SOCIETY AND TRIBES	
Total Contact Hours: 60	**Course Credits: 4**
Formative Assessment Marks: 40	**Duration of ESA/Exam: 3 hours**
Model Syllabus Authors:	**Summative Assessment Marks: 60**

Course Objectives

- To provide basic knowledge about social organisation among tribal people, with specific focus on Karnataka
- To critically understand the implications of transformation of tribal community
- To undertake micro research work on tribal community for effective showcase of practicality

Course Outcomes (COs) for DSC 10:

At the end of the course the student should be able to:

- Understand and appreciate the social organisation among the tribal community
- Assess the impact of social changes on tribal social life
- Communicate their micro research work effectively to the society

Articulation Matrix for Course 10: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Understand and appreciate the social organisation among the tribals	X			X				X	
Assess the impact of social changes on tribal social life		X	X	X	X	X	X		X
Handle micro research work and communicate effectively	X		X	X	X	X		X	

DSC SOC C10 - Content of Course: SOCIETY AND TRIBES	60 Hours
UNIT – I CONCEPTS AND CATEGORIES	**15**
Chapter 1: Tribes and Indigenous People; Genealogies, Scheduled Tribes, Primitive Tribes, De-Notified or ex-criminal Tribes in India; Geographical Distribution of Tribes in India **Chapter 2:** Hadis (Yarava, Jenukuruba, Kadukurubas): Meaning, Rules of Marriage, Clan, Lineage, Consanguinity and Affinity; Male-Female relations **Chapter 3:** Social System, Legal System, Political System, Economic System, Religion and Magic	
UNIT – II CHANGES AND DEVELOPMENT ISSUES	**15**
Chapter 4: Social Mobility: Types, Tribes and Caste, Tribe-Caste-Peasant Continuum, Sanskritisation **Chapter 5:** Tribalisation, Detribalisation, Retribalisation **Chapter 6:** Tribal Development and Welfare: Approaches- Assimilationist and Isolationist; Problems of Exploitation, Land Alienation, Unemployment, Cultural Transformation, Scheduled Areas, Tribal Justice and Modern Law	
UNIT – III STUDYING TRIBES	**15**
Chapter 7: Tradition of Fieldwork: History and Significance; Ethics of Fieldwork **Chapter 8:** Indian Tribes- Participatory Method, Case Studies, Sample Surveys **Chapter 9:** Studying Tribes: Primary and Secondary Data; Etic & Emic Perspectives	
UNIT – IV FIELD WORK	**15**
Students have to take up field work in any nearby tribal settlement and present their findings in a Seminar and written report	

REFERENCE BOOKS

- Ahuja, Ram. (2001). Society in India. Rajat Publications, Jaipur
- Bose, N.K. (1941). Hindu mode of tribal absorption. Science and Culture, Vol VII
- Elwin, Verier. (1963). A new deal for tribal India.
- Forde, G.D. (1979). Habitat, economy and society. Metuen and Co London
- Von Fürer-Haimendorf, Christoph. (1982). Tribes of India: The struggle for survival. Berkeley: University of California Press, c1982 1982. http://ark.cdlib.org/ark:/13030/ft8r29p2r8/
- Ghurye, G.S. (1963). The scheduled tribes. Popular Prakashan, Bombay
- Hasnain, Nadeem (2011). Tribal India. Palace Prakashan, New Delhi
- Kuppuswamy (2010). Social change in India. Konark Publishers Pvt. Ltd., Delhi
- Majumdar, R.C. (1962). The history and culture of the Indian People. Vol. III, Bharatiya Vidya Bhavan, Bombay
- Patnaik, N. (1972). Tribes and their development, Hyderabad, Hyderabad Institute of Community Development
- Srinivas, M.N. (1952). Social, religion and society among the Coorgs of south India. Oxford University Press, Delhi
- Srinivas, M.N. (1966). Change in modern India. Oxford University Press, Delhi
- Thurston, Edgar C. and Rangachari, K. Castes and tribes of southern India. Gyan Publishing House, New Delhi
- Vidyarthi, L.P. and B.K. Rai (1985). The tribal culture of India. Concept Publishing Company, New Delhi

Pedagogy: Field work, micro projects, group discussion, role play, written/oral presentation by students

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Fieldwork as per Unit 4	30
Written Test	10
Total	40

Teachers can adopt best of three or five principles for both activities and written test.

B.A. Semester V

Course Title: STATISTICS IN SOCIOLOGICAL RESEARCH	
Total Contact Hours: 60	**Course Credits: 4**
Formative Assessment Marks: 40	**Duration of ESA/Exam: 3 hours**
Model Syllabus Authors:	**Summative Assessment Marks: 60**

Course Objectives:

- Introduction to sociological research and methods
- To familiarize the students with the process of research
- General introduction to statistical techniques for analyzing social science data

Course Outcomes (COs) for DSC 11:

At the end of the course the student should be able to:

- Use appropriate research method
- Use appropriate statistical techniques
- Summarise data, examine relationships among variables

Articulation Matrix for Course 11: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Use appropriate research method	X		X	X	X	X			
Use appropriate statistical techniques			X	X	X	X			
Summarise data, examine relationships among variables			X	X	X	X		X	X

DSC SOC C11 - Content of Course: STATISTICS IN SOCIOLOGICAL RESEARCH	60 Hours
UNIT – I SOCIOLOGICAL RESEARCH	**15**
Chapter 1 Meaning of Science, Social Science, Research Steps for Conducting Research: Choosing Research Topic **Chapter 2** Literature Review; Research Design; Reference and Bibliography **Chapter 3** Meaning of - Concept, Assumption, Hypothesis Formulating a Hypothesis; Independent Variable, Dependent Variable	
UNIT – II METHODS OF SOCIOLOGICAL RESEARCH	**15**
Chapter 4 Qualitative and Quantitative Methods: Meaning, Differences Survey Methods: Sampling **Chapter 5 & 6** Sources of Data (Primary, Secondary) Questionnaire, Interview, Participant Observation, Non-participant Observation	
UNIT – III SOCIAL STATISTICS	**15**
Chapter 7 Social Statistics- Meaning, Need of Studying Social Statistics Types of Statistics: Descriptive Statistics, Inferential Statistics **Chapter 8** Definition of- Population, Sample, Count, Fractions, Constant Variable Classification and Tabulation of Data **Chapter 9** Meaning of Frequency Distribution; Construction of Frequency Tables; Diagrammatic and Graphical Representation of Grouped Data: Advantages; Bar Charts, Histogram, Frequency Polygon and Frequency Curve; Pie Charts	

UNIT – IV	STATISTICAL MEASUREMENT AND USE OF COMPUTERS	15
Chapter 10 Measures of Central Tendency: Merits, Demerits Arithmetic Mean, Median and Mode **Chapter 11** Microsoft (MS) Office *(Word, Excel, Power Point)* **Chapter 12** Use of Computer in Social Science Research, e-library		

Reference Books

- Agarwal, Y.P. (1995). Statistical Methods: Concepts, Applications and Computation, New Delhi: Sterling Publishers.
- Altman, Micah, Jeff Gill and Michael McDonald. (2003). Numerical Issues in statistical computing for the social scientist. New York: John Wiley and Sons.
- Babbie, Earl. (2013). The practice of social research, Cengage, 13th Edition
- Bailey, K. (1994). The research process in methods of social research. Simon and Schuster, 4th Ed. The Free Press, New York
- Bryman, Alan. (1988). Quality and Quantity in Social Research. London: Unwin Hyman.
- Goode, W.E. and P.K. Hatt. (1952). Methods in Social Research. McGraw Hill New York
- Gupta, S.C. (1990). Fundamentals of Statistics. New Delhi: Himalaya Publishing House.
- Gupta, S.C. (1985). Statistical Methods. New Delhi: S. Chand and Sons.
- Irvine, J. I. Miles and J. Evans eds. (1979). Demystifying Statistics. London: Pluto Press.
- Norton, Peter. (2005). Introduction to Computers. New Delhi: Tata McGraw Hill.
- Luker, Kristin. (2008). Salsa Dancing into the Social Sciences, Harvard University Press, Harvard
- Rajaraman, V. (2004). Fundamentals of Computers. New Delhi: Prentice Hall.
- Shipman, Martin. (1998). The Limitations of Statistics. London: Longman.
- Srinivas, M.N. et al. (2002) (reprint). The Fieldworker and the Field: Problems and Challenges in Sociological Investigation. Oxford University Press, New Delhi

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentation by students

Formative Assessment	
Assessment Occasion/ Type	**Weightage in Marks**
Activities	30
Written Test	10
Total	40

B.A. Semester V: SEC

Course Title: SOCIAL SKILLS AND CAREER DEVELOPMENT	
Total Contact Hours: 30	**Course Credits: 03**
Formative Assessment Marks: 20	**Duration of ESA/Exam: 1 Hour**
Model Syllabus Authors:	**Summative Assessment Marks: 30**

Course Objectives:

- To enhance self-awareness and foster personal growth for optimal career readiness
- To equip students with essential social skills and competencies required for successful career
- To develop interpersonal skills for effective interface at workplace

Course Outcome (COs) for SEC:

At the end of the course the students should be able to:

- Develop interpersonal skills for career readiness
- To inculcate social etiquettes
- To up-skill and create career pathways

Articulation Matrix for Course12:
Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Develop interpersonal skills for career readiness	X	X			X				X
To inculcate social etiquettes	X				X	X	X		X
To up skill and create career pathways			X	X	X				X

SEC SOC 12 – Content of Course: SOCIAL SKILLS AND CAREER DEVELOPMENT	30 Hours
UNIT - I FOUNDATION OF SOCIAL SKILLS	**12**
Chapter 1: Social Skills: Concept, Features, Importance, Types; Emotional Intelligence and Critical Thinking; Goal Setting and Personal analysis **Chapter 2**: Behavioural and Interpersonal Skills; Common Etiquettes; Listening, Reading and Writing Skills **Chapter 3**: Self-Introduction; Interview Skill; Presentation Skills; Group Discussion; Public Speaking; Letter and Resume Writing	Theory and Practical
UNIT - II DEVELOPMENT OF CAREER SKILLS	**12**
Chapter 4: Human Values and Work Ethics as Integral Soft Skills; Exploring the Role of Soft Skills in Career Success **Chapter 5**: Professional Skills; De-stressing Skills; Time Management; Leadership Skills **Chapter 6**: Essential Digital Skills; Effective use of Social Media (Internet Social Skills)	Theory and Practical
UNIT - III FIELD WORK	**06**
Students have to go the field and invasively involve themselves as mentioned in the Chapters 1 to 6. This will be considered for awarding 40% marks of Continuous Assessment. Teachers can choose or modify as per local needs: **Chapter 7 & 8**: Presentation and Activities (Mock Interview, Public Speaking, etc.)	

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INTERNET SOURCES:

- Professional Development Training for the Modern Workplace. https://virtualspeech.com
- Employability Skill. https://www.studocu.com/in/document/anna-university/be/2-bcom-e-skill-material/9690042

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- How to Build Your Creative Confidence, Ted Talk by David Kelly. https://www.ted.com/talks/david_kelley_how_to_build_your_creative_confidence
- Knowledge@Wharton Interviews Former Indian President APJ Abdul Kalam. "A Leader Should Know How to Manage Failure". A business journal from the Wharton School of the University of Pennsylvania. https://knowledge.wharton.upenn.edu/article/former-president-apj-abdul-kalam-a-leader-should-know-how-to-manage-failure/

Pedagogy: Field work, micro projects, group discussion, role play, written/oral presentation by students

Formative Assessment	
Assessment Occasion/ Type	**Weightage in Marks**
Internal Assessment Marks *(One Internal Exam)*	**10**
Presentation/ Activities	**10**
Theory Exam	**30**
TOTAL	**50**
Duration of Theory Paper	**01 Hour**

Teachers can adopt best of three or five principles for both activities and written test.

B.A. Semester VI

Course Title: SOCIOLOGICAL PERSPECTIVES	
Total Contact Hours: 60	**Course Credits: 4**
Formative Assessment Marks: 40	**Duration of ESA/Exam: 3 hours**
Model Syllabus Authors:	**Summative Assessment Marks: 60**

Course Objectives:

- To introduce major Sociological theoretical approaches
- To introduce and apply fundamental categories of theory
- Compare and analyse the perspectives of different sociological theorists

Course Outcomes (COs) for DSC 13:

At the end of the course the student should be able to:

- Appreciate the significance of major Sociological theories
- Able to use fundamental theoretical categories
- Understand the nuance of sociological perspectives and concepts

Articulation Matrix for Course 13: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Appreciate the significance of major Sociological theories	X	X		X					
Able to use fundamental theoretical categories	X	X		X	X	X			X
Understand the different nuances of concepts and terms	X	X							

DSC SOC C13 - Content of Course: SOCIOLOGICAL PERSPECTIVES	60 Hours
UNIT – I BASICS OF THEORY	**15**
Chapter 1 Meaning of Theory and Social Theory, Features Types of Theory: Macro, Meso, Micro **Chapter 2** Building Blocks: Concept, Assumption, Hypothesis, Model; Need for Theoretical Thinking **Chapter 3** Meaning of - Induction, Deduction, Fact, Causal Relation, Correlation, Constant, Variable, Generalisation	
UNIT - II STRUCTURAL FUNCTIONAL PERSPECTIVE	**15**
Chapter 4 Functionalism: Origin and Meaning of Functionalism **Chapter 5** Social System: Functions and Dysfunctions **Chapter 6** Structuralism: Origin and Meaning, Features of Social Structure, Integration, Social Equilibrium, Social Order	
UNIT - III CONFLICT PERSPECTIVE	**15**
Chapter 7 Conflict Perspective: Origin, Meaning of Conflict, Social Inequality **Chapter 8** Power & Authority Dominance & Hegemony, Class Struggle **Chapter 9** Process of Social Conflict, Functions of Social Conflict	

UNIT - IV SYMBOLIC INTERACTION PERSPECTIVE	15
Chapter 10 Symbolic Interaction: Origin, Meaning, Social Construction of Reality, Interpretation, Reflexivity, Negotiation **Chapter 11** Situation : Meaning, Definition and Importance **Chapter 12** Dramaturgy and Everyday Life	

Reference Books

- Aron, Raymond (1991). Main Currents in Sociological Thought (Vol.1), London: Penguin.
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- Micro, Meso, and Macro Approaches. https://saylordotorg.github.io/text_principles-of-sociological-inquiry-qualitative-and-quantitative-methods/s05-01-micro-meso-and-macro-approache.html

Pedagogy: Field work, micro projects, group discussion, role play, written/oral presentation by students

Formative Assessment	
Assessment Occasion/ Type	**Weightage in Marks**
Activities	30
Written Test	10
Total	40

Teachers can adopt best of three or five principles for both activities and written test.

B.A. Semester VI

Course Title: SOCIOLOGY OF HEALTH	
Total Contact Hours: 60	**Course Credits: 4**
Formative Assessment Marks: 40	**Duration of ESA/Exam: 3 hours**
Model Syllabus Authors:	**Summative Assessment Marks: 60**

Course Objectives:

- To understand the concept of health, illness and social conditions
- To analyse the relationship between social factors and health status
- To understand the role of medical doctors, paramedics, pharmaceutical industry and social institutions in maintaining and promoting health

Course Outcomes (COs) for DSC 14:

At the end of the course the student should be able to:

- Appreciate the significant relationship between society and health
- Distinguish between health, well-being, illness and disease
- Critique the role of medical doctors, paramedics, pharmaceutical industry and social institutions in maintaining and promoting health

Articulation Matrix for Course 14:
Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Appreciate the significant relationship between society and health	X	X		X					X
Distinguish between health, well-being, illness and disease	X	X						X	X
Critique the role of medical doctors, paramedics, pharmaceutical industry and social institutions in maintaining and promoting health	X			X				X	X

DSC SOC C14 - Content of Course SOCIOLOGY OF HEALTH	60 Hours
UNIT – I INTRODUCTION	**15**
Chapter 1 Sociology of Health: Emergence Development of Sociology of Health in World and India **Chapter 2** Sociology of Health: Meaning, Nature, Scope and Need, Sociology in Medicine and Sociology of Medicine **Chapter 3** Actors: Doctors, Nurses; Paramedical Staff-Patients and their relationship	
UNIT – II DETERMINANTS OF HEALTH	**15**
Chapter 4 Social Determinants: Class, Caste, Power, Gender, Social Cohesion **Chapter 5** Cultural Determinants: Beliefs, Nutrition, Environment **Chapter 6** Economic Determinants: Poverty, Homelessness, Living Conditions, Neighbourhood	
UNIT – III MODELS OF HEALTH	**15**
Chapter 7 The Professionalization and Socialization of the Physician Sick Role and Experiencing Illness **Chapter 8** Systems of Medicine (Biomedicine and AYUSH); Dominance of Biomedical Model **Chapter 9** Functions of Hospital Hospital as Social Organisation	

UNIT – IV HEALTH CARE REFORMS	15
Chapter 10 National Health Policy Medicalisation and Pharamceuticalisation of Health **Chapters 11 & 12** Learning from the Field: Report on Health Services or Functioning of Health Organisations or Selected Health Programmes at State Level	

REFERENCE BOOKS:

- Albert, Gary L. and R. Fitzpatrick (1994). Quality of Life in Health Care: Advances in Medical Sociology, Mumbai: Jai Press.
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Pedagogy: Field work, micro projects, group discussion, role play, written/oral presentation by students

Formative Assessment	
Assessment Occasion/ Type	**Weightage in Marks**
Fieldwork as per Chapter 11 and 12 of Unit IV	30
Written Test	10
Total	**40**

Teachers can adopt best of three or five principles for both activities and written test

B.A. Semester VI

Course Title: SOCIETY IN KARNATAKA	
Total Contact Hours: 60	**Course Credits: 4**
Formative Assessment Marks: 40	**Duration of ESA/Exam: 3 hours**
Model Syllabus Authors:	**Summative Assessment Marks: 60**

Course Objectives:

- Enhance Sociological knowledge about the Local and Regional context of Karnataka.
- Acquaint students with the changing trends in Karnataka with special reference to Development processes and politics.
- Learn about the unique cultures in Karnataka.

Course Outcomes (COs) for DSC 15:

At the end of the course the student should be able to:

- Acquaint and appreciate the cultural items of Karnataka
- Critique the social changes occurring in Karnataka
- Usefulness of sociological study in the contemporary society

Articulation Matrix for Course 15:
Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Acquaint and appreciate the cultural items of Karnataka	X								
Critique the social changes occurring in Karnataka	X		X	X					X
Usefulness of sociological study in the contemporary society	X							X	X

DSC SOC C15 - Content of Course: SOCIETY IN KARNATAKA	60 Hours
UNIT – I FEATURES OF KARNATAKA	**15**
Chapter 1: Overview of Karnataka's History: Antiquity of Land and Language**;** Social Composition: Religion, Caste, Tribe, Class, Language *(as per latest Census/Sample Surveys)*; **Chapter 2:** Geography and Politics: Spatial Features: Plains, Coastal and Malnad; Old Mysuru, Hyderabad Karnataka, Bombay Karnataka; Present Administrative Divisions *(Mysuru, Bengaluru, Kalyana Karnataka and Kittur Karnataka)*; Political Landscape since Independence **Chapter 3:** Economic Profile: Developments in Agriculture, Industry and Service Sectors	
UNIT – II SOCIAL ORGANISATION	**15**
Chapter 4: Folklore and Regional Culture of Karnataka Urbanisation: Trends and Issues **Chapter 5:** Education: Status of Social Sciences and Humanities; Growth of STEM Courses, **Chapter 6:** Human Development Index (HDI) and Regional Disparities	
UNIT – III SOCIAL MOVEMENTS OF KARNATAKA	**15**
Chapter 7: Socio-Religious Movements: Veerashaiva, Non-Brahmin, Dalit Movements **Chapter 8:** Unification of Karnataka; Save Kannada Movement; Gokak Movement	

Chapter 9: Environment Movements: Chipko and Appiko, Sahyadri Mining Protest, Seabird Naval Base, Movement against Social Forestry	
UNIT – IV STUDIES ON KARNATAKA SOCIETY	**15**
Chapter 10: Contributions of M.N. Srinivas, S. Parvathamma, Hiremallur Ishwaran, and other prominent Sociologists of Karnataka **Chapters 11 and 12:** Fieldwork report on Changing Social Institutions and their Impact on Social Life	

REFERENCE BOOKS:

- Government of Karnataka. Human Development Reports, Planning and Statistics Department, Bangalore.
- Jai Prabhakar, S.C. Socio-Cultural Dimensions of Development in North Karnataka, CMDR Monograph Series No. 63.
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Pedagogy: Field work, micro projects, group discussion, role play, written/oral presentation by students

Formative Assessment	
Assessment Occasion/ Type	**Weightage in Marks**
Fieldwork as per Chapter 11 and 12 of Unit - IV	30
Written Test	10
Total	**40**

Teachers can adopt best of three or five principles for both activities and written test.

SOC C16

INTERNSHIP/ DISSERTATION

Internship for Graduate Programme

(As Per UGC & AICTE)

Course Title	Internship Discipline Specific
No of Contact Hours	90
No Credits	02
Method of Evaluation	Presentations/Report Submission/Activity etc.

- **The detailed guidelines and formats shall be formulated by the universities separately as prescribed in accordance to UGC and AICTE guidelines.**

  (Internship shall be Discipline Specific of 90 hours (2 credits) with duration 4-6 weeks. Internship may be full-time/part-time (full-time during semester holidays and part-time in the academic session. Internship mentor/supervisor shall avail work allotment during 6th semester for a maximum of 20 hours. The student should submit the final internship report (90 hours of Internship) to the mentor for completion of the internship.)

Question Paper Pattern for all DSC

B. A. Examination Month / Year

SOCIOLOGY

Title of the Paper

Time: 2 Hours **Max. Marks: 60**

Instruction: Answer all section

Part-A

Answer any five questions **2×5=10**

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Part-B

Answer any four questions **5×4=20**

8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____

Part-C

Answer any three questions **10×3=30**

15. _____
16. _____
17. _____
18. _____

Question Paper Pattern for SEC

B. A. Examination Month / Year

SOCIOLOGY

Title of the Paper

Time: 01 Hour **Max. Marks: 30**

Instruction: Answer all section

Part-A

Answer any five questions **2×5=10**

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Part-B

Answer any four questions **5×4=20**

7. _____
8. _____
9. _____
10. _____
11. _____

RANI CHANNAMMA UNIVERSITY, BELAGAVI

DEPARTMENT OF STUDIES IN ECONOMICS

PROGRAM /COURSE STRUCTURE AND SYLLABUS

As per the Choice Based Credit System (CBCS) designed in accordance with Learning Outcomes-Based Curriculum Framework (LOCF) of National Education Policy (NEP) 2020

For

B.A. Economics Degree (Honours)

w.e.f.

Academic Year 2021-22 and onwards

PREAMBLE

Education empowers Mankind. A holistic education paradigm will effectively focus on developing knowledge, employable skill sets, appropriate attitudes and an overall personality. NEP is focused towards imparting such an education system.

India's first education policy of the 21st century is 'National Education Policy 2020' proposes the revision and revamping of all aspects of the education structure, including its regulation and governance. It seeks to create a new system that is aligned with the developmental aspirations & goals of 21st century education, including SDG4, while building upon India's traditions and value systems.

NEP aims for India to have an education system by 2040 that is second to none, with equitable access to the highest-quality education for all learners regardless of social or economic background and seeks to ***"ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030***."

Vision of the National Education Policy 2020

- ✓ An education system that contributes to an equitable and vibrant knowledge society, byproviding high-quality education to all.
- ✓ Develops a deep sense of respect towards the fundamental rights, duties and Constitutional values, bonding with one's country, and a conscious awareness of one's role and responsibilities in a changing world.
- ✓ Instils skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly globalcitizen.

As India is enjoying the demographic dividend, which will last till 2055 and to reap the benefits, a good education policy was the need of the hour. Hence there is lot of hopes on the NEP, which has come as cure the edu-ailments and to plug the shortcomings of the education system which marred for 36 years and strengthen our education system. Expectations on NEP is high. As every good policy success lies in the implementation and active participation of its stake holders, so is the NEP. The success or failure of NEP lies in all our hands. Hence Let all of us join our hands in making the NEP successful.

As enshrined in the National Education Policy-2020 vision of introducing course curriculum for undergraduate studies under Choice Based Credit System (CBCS), the main objective of framing this curriculum of BA/B.Sc. (Basic/Hons) in Economics is to impartthe students a holistic understanding of the subject giving substantial weightage to the core contents, skill, value-based and ability enhancement. The syllabus has given due importance on the main streams of the body of knowledge on Economics" with due recognition of its wide spectrum. The ultimate goal of the syllabus is to enable the students to have an in- depth knowledge on the subject and enhance their scope of employment at every level of exit. Adequate emphasis has been given on the new and emerging techniques and understanding of the subject under the changing regime and global context.

There is a need to strengthen the students to understand essential aspects of economics in diverse subject areas not only in social sciences, but also among other natural and physical sciences. The curriculum lays focus on creating new knowledge, acquiring new skills and capabilities in Economics producing an intelligent human resource serving the Economy and society

PROGRAM OUTCOMES

The Programme outcomes (POs) are expected to be as under:

- Students will be able to understand economic vocabulary, methodologies, tools andanalysis procedures.
- Students will be familiar with the knowledge and application of micro economics forthe formulation of policies and planning.
- Students will learn to apply economic theories and concepts to contemporary socialissues, as well as analysis of policies.
- Students will be able to understand the impact of government policies and will be ableto assess the consequences of the policies on the parties involved.
- As the programme along with economics contains like statistics, mathematics, it enhances them to compute and assess the real situation of the economy including the size and changes of population, income pattern, and rate of development with pattern of savings and investments and social security measures adopted in the country.
- Understand the basics of Quantitative techniques their applications
- Critically evaluate the ongoing economic developments in India and abroad
- **Understand research methods in economics**
- Student develops an awareness of career choices and the option for higher studies.

CONTINUOUS INTERNAL EVALUATION AND SEMESTER ENDEXAMINATION

Total marks for each course shall be based on continuous assessments and term end examinations. As per the decision of the Karnataka State Higher Education Council, it isnecessary to have uniform pattern of 40: 60 for CIA and Semester End examinations respectively, among all the Universities, their affiliated and autonomous colleges.

The committee deliberated on the same and suggested the following pattern for the CIEMarks.

Sl.No.	Parameters for the Evaluation	Marks
Continuous Internal Evaluation (CIE)		
A	Continuous & Comprehensive Evaluation (CCE)	**20 Marks**
B	Internal Assessment Tests (IAT)	**20 Marks**
	Total of CIE (A+B)	**40 Marks**
C	Semester End Examination (SEE)	**60 Marks**
	Total of CIE and SEE (A + B + C)	**100 Marks**

Evaluation process of IA marks may be as follows:

- The first component (C1), of assessment is for 20 marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course/s andwithin the first half of the semester.
- The second component (C2), of assessment is for 20 marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of the remaining 50 percent of syllabus of the courses of the semester.
- During the 17^{th} – 20^{th} week of the semester, a semester end examination of 3 hours duration shall be conducted by the University for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.

- In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the concerned teacher/ Program Coordinator / HOD and suitable decision taken accordingly.
- For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (of A4 size), graph sheets etc., required for such tests / assignments and these be stamped by the concerned department using their department seal at the time of conducting tests / assignment / work etc.

The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

Outline for continuous assessment activities for C1 and C2

Activities	**C1**	**C2**	**Total Marks**
Session Test	10 marks	10 marks	20
Seminars etc.	10 marks		10
Case study / Assignment / Field work / Project work/ Academic Economics Quiz/Review of the Book/ etc		10 marks	10
Total	20 marks	20 marks	40

PROGRAM STRUCTURE

The following is the Program Structure for the B.A. (Hon.) Economics Program of Rani Channamma University:

Sem.	Discipline Core (DSC) (Credits) (L+T+P)	Discipline Elective(DSE)/ Open Elective (OE) (Credits) (L+T+P)	Ability Enhancement Compulsory Courses (AECC), Languages (Credits) (L+T+P)		Skill Enhancement Courses (SEC)			
					Skill based (Credits) (L+T+P)	Value based (Credits) (L+T+P)		
	DSC-1: Basic Economics –I (3) DSC-2: Contemporary Indian Economy (3)	OE-1: Kautilya's Arthshastra 2. Pre-reforms Indian Economy 3. Development Studies (3)	L1-1(3), L2-1(3) (4 hrs. each)		SEC-1: Digital Fluency (2) (1+0+2)	Physical Education - Yoga (1) (0+0+2)	Health & Wellness (1) (0+0+2)	
	DSC-3: Basic Economics -II (3) DSC-4: Karnataka Economy (3)	OE-2: 1. Contemporary Indian Economy 2. Sustainable Development 3. Economics of Business Environment (3)	L1-2(3), L2-2(3) (4 hrs. each)	Environmental Studies (2)		Physical Education-Sports (1) (0+0+2)	NCC/NSS/R &R(S&G)/ Cultural (1) (0+0+2)	
Exit option with Certificate in Economics (48 credits)								
	DSC-5: Micro Economics (3) DSC-6: Mathematical Economics (3)	OE-3: 1. Rural Economics 2. Economics of Insurance 3. Economics of Human Development (3)	L1-3(3), L2-3(3) (4 hrs each)		SEC-2: Artificial Inte-lligence (2) (1+0+2)	Physical Education-Sports (1) (0+0+2)	NCC/NSS/R &R(S&G)/ Cultural (1) (0+0+2)	
	DSC-7: Macro Economics (3) DSC:8 Statistics for Economics (3)	OE-4: 1. Karnataka Economy 2. Entrepreneurial Economics 3. Economics andLaw (3)	L1-4(3), L2-4(3) (4 hrs each)	Constitution of India (2)		Physical Education-Sports (1) (0+0+2)	NCC/NSS/R &R(S&G)/ Cultural (1) (0+0+2)	

Exit option with Diploma in Economics (96 credits)								
	DSC-9: Public Economics (4) DSC-10: Development Economics (4)	DSE-1: (3) 1. Agricultural Economics 2. Industrial Economics 3. Financial Economics (choose 1) VOC-1: 1. Entrepreneurial Economics 2. Digital Economics (3)			SEC-3: SEC such as Cyber Security (2) (1+0+2)	Physical Education-Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	
	DSC-11: International Economics (4) DSC-12: Indian Public Finance (4)	DSE-2 1. Labour Economics 2. Economics of Non-Farm Sector 3. Tertiary Economics (Choose 1) (3) VOC-2: 1. Micro Entrepreneurses Development 2. Project Planning & Management (Choose 1) (3)			SEC-4: Professional Communication (2)	Physical Education -Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1 (0+0+2)	
Exit Option with Bachelor of Economics Degree (144 credits)								
	DSC-13: Advanced Micro economics (4) DSC-14: Financial Economics (4) DSC-15: Econometrics (3) DSC- B.A 7. 6 Research Methodology for Economics (3)	**DSE -3** (3) 1. Population Studies 2. Urban Economics **3.** Economics of Infrastructure(Choose 1) **4. VOC-3** 1. Economics of Governance 2. Gender Economics 3. Economics of Health & Education (Choose 1) (3)						
	DSC-16: Economics and Data Analytics (4)	**DSE 4** (3) 1. Institutional Economics 2. International Finance 3. Co-operative						

	DSC-17: Behavioural Economics (4) DSC-18: Environmental Economics (3) DSC- B.A 8. 5 Research Project (6)	Economics						
Award of Bachelor of Economics Honours Degree (186 credits),								

B.A PROGRAM

Proposed Scheme of Teaching and Evaluation for B.A (Basic/Hons) with Economics as Major

Semester –I								
Sl No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L+T+P)**		**CIE**	**Total Marks**	
1	Economics-C1	Basic Economics –I	DSC	3+0+0	60	40	100	
2	Economics-C2	Contemporary IndianEconomy	DSC	3+0+0	60	40	100	

3	Open Electives - Economics	1. Kautilya's Arthshastra 2. Pre-reforms Indian Economy 3. Development Studies	OEC	3+0+0	60	40	100	
								09

Semester –II								
	Course Code	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L+T+P)**		**CIE**	**Total Marks**	**Credits**
1	Economics-C3	Basic Economics - II	DSC	3+0+0	60	40	100	3
2	Economics-C4	Karnataka Economy	DSC	3+0+0	60	40	100	3
3	Open Electives- Economics	4. Contemporary Indian Economy 5. Sustainable Development 6. Economics of Business Environment	OEC	3+0+0	60	40	100	3
Sub- Total								09
Exit option with Certificate (48Credits)								

PROGRAM ARTICULATION MATRIX

Semester	**Name of the course- Discipline Specific Core Course (DSCC)**	**What all program outcomes the course addresses (not exceeding three per course)**	**Pre-requisite course(s)**	**Pedagogy**	**Assessment**
1	Basic Economics –I	1. Basic economic concepts and terms. 2. Operation of a market system; 3. Production and cost relationships of a business firm;.	Nil	Lecture	i) Internal Assessment for 30 marks comprising two written tests, assignment/seminar, and attendance; and ii) Written Semester-end Examination for 70 marks

1	Contemporary IndianEconomy	i. Current problems of Indian Economy ii. Recent growth of the Indian economy iii. Impact of LPG policies on economic growth in India	Nil	Lecture	i) Internal Assessment for 30 marks comprising two written tests, assignment/seminar, and attendance; and ii) Written Semester-end Examination for 70marks
2	Basic Economics –II	1. Operation of the overall economic system; 2. Calculate national income 3. Relationship between macroeconomic aggregates;	Nil	Lecture	i) Internal Assessment for 30 marks comprising two written tests, assignment/seminar, and attendance; and ii) Written Semester-end Examination for 70marks
2	Karnataka Economy	1. Economic growth and problems of Karnataka state. 2. Structural growth in Karnataka economy; 3. Policies & Programmes of Govt. of Karnataka	Nil	Lecture	i) Internal Assessment for 30 marks comprising two written tests, assignment/seminar, and attendance; and ii) Written Semester-end Examination for 70marks

ASSESSMENT METHODS

Type of Course	Formative Assessment / IA	Summative Assessment
Theory	40	60
Practical	-	-
Projects	30	70
Experiential Learning (Internships/Social Work Practicum etc.)	-	-

COURSE WISE SYLLABUS

BA (Hons) EconomicsSemester 1

DSC 1.2: Basic Economics – I

Course Title: **DSC 1.2: Basic Economics -I**	
Total Contact Hours: 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60

Course Outcomes:

By the end of the course the student will be able to:

4. Identify the facets of an economic problem.
5. Learn basic economic concepts and terms.

6. Explain the operation of a market system;
7. Analyse the production and cost relationships of a business firm;
8. Evaluate the pricing decisions under different market structures; and
9. Use basic cost-benefit calculations as a means of decision making
(i.e., thinking like aneconomist)

Content of Basic Economics 1	42 Hrs
Unit – 1 Basic Concepts in Economics	14
Chapter No. 1 Nature and Scope of Economics • Meaning of Economics • Nature of Economics • Scope of Economics • Methods of Economics • Why Study Economics?	5
Chapter No. 2 Thinking Like an Economist • Thinking Like an Economist • The Economist as Scientist • The Economist as Policy Adviser • Economic Policy	4
Chapter No. 3 Economic System • Types of Economic Activities • Organisation of Economic Activities • Circular Flow of Economic Activities • Evolution of the Present Economic Systems **Practicum:** 1. Group Discussions on Choice Problem 2. Assignment on Types of Economic Systems	5
Unit – 2 Demand, Supply and Markets	14
Chapter No. 4. Firms and Household • Meaning of Firms and Household • Relationship Between Firms and Household • Input Markets • Output Markets	4
Chapter No. 5. Demand and Supply • Individual Demand • Market Demand • Demand Determinants • Supply and its Determinants • Market Equilibrium	5
Chapter No. 6. Elasticity and its Measurement • Types of Elasticity of Demand • Price, Income and Cross Elasticities • Measurement of Elasticity of Demand • Determinants of Elasticity of Demand **Practicum:** 1. Estimation of demand and supply elasticities 2. solving an equilibrium problem	5

Unit – 3 Cost and Market Structures	14
Chapter No. 7 Production and Costs • Production Function • Total Production Cost • Marginal Production Cost • Average Production Cost • Revenue Functions	4
Chapter No. 8. Accounting and Economic Costs • Cost in the Short run • Fixed Costs and Variable Costs • Marginal Costs • Long run AC and MC • TR, MR, AR	5
Chapter No. 9. Market Structures • Markets • Perfect and Imperfect Competition • Features of Perfect Competition • Monopoly, Oligopoly and Monopolistic Competition • Pricing Strategies	5
Practicum: 1. Calculation of various costs and comparing them with production concepts; a mini-project can be taken up wherever possible 2. Studying the real-life pricing mechanism through a project/ case studies	
References (indicative) 1. Cohen, A.J. (2020). *Macroeconomics for Life: Smart Choices for All? + MyLab Economics with Pearson eText* (updated 2nd ed.). Toronto, ON: Pearson Canada Inc. Type: Textbook: ISBN: 9780136716532 2. Cohen, A.J. (2015). *Microeconomics for Life: Smart Choices for You + MyLab Economics with Pearson eText* (2nd ed.). Toronto, ON: Pearson Canada Inc. Type: Textbook: ISBN: 9780133899368 3. Case Karl E. and Fair Ray C. Principles of Economics, Pearson Education Asia, 2014. 4. Mankiw N. Gregory. Principles of Economics, Thomson, 2013. 5. Stiglitz J.E. and Walsh C.E. Principles of Economics, W.W. Norton & Co, New York, 2011.	

Semester I

Course Title: **DSC 1.3: Contemporary Indian Economy**	
Total Contact Hours: 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60

Course Pre-requisite(s):

Course Outcomes (COs):

At the end of the course the student should be able to:

i. Understand the current problems of Indian Economy

ii. Identify the factors contributing to the recent growth of the Indian economy
iii. Evaluate impact of LPG policies on economic growth in India
iv. Analyze the sector specific policies adopted for achieving the aspirational goals
v. Review various economic policies adopted

Content of Course 1	42 Hrs
Unit – 1 LPG POLICIES, ECONOMIC REFORMS AND AGRICULTURE	14
Chapter No. 1 Recent Issues • Genesis and Impact of LPG • India's population policy • Demographic Dividend • India's human development in global perspective	4
Chapter No. 2 Urbanization and governance • Urbanization and Smart City Mission • Informal sector • Impact of COVID-19 Pandemic • Atma Nirbhara Bharat Abhiyan	4
Chapter No. 3 Economic Reforms and Agriculture • Agriculture and WTO • Price policy and Subsidies • Commercialisation and Diversification • Public Distribution System • Impact of public expenditure on agricultural growth • Agrarian Crisis, Doubling Farm Incomes, MGNREGS	6
Practicum 1. Mini-project to ascertain the impact of pandemic on lives of different sections of population 2. Field visits to understand the agrarian situation	
Unit – 2 INDUSTRY, BUSINESS, FISCAL POLICY	14
Chapter No. 4. Industrial Policy • New Industrial Policy and changes • Public sector reform • Privatisation and Disinvestment	4
• Competition Policy	
Chapter No. 5. Business • Ease of Doing Business • Performance of MSMEs • Role of MNC's in Industrial Development • Make in India, development of economic and social infrastructure • National Monetization Pipeline (The teacher should include the latest policy of the government)	5
Chapter No. 6. Fiscal Policy • Tax, Expenditure, Budgetary deficits • Pension and Fiscal Reforms • Public debt management and reforms • Fiscal Responsibility and Budget Management (FRBM) Act • GST, Fiscal Federalism and Fiscal Consolidation • Recommendations of the Current Finance Commission	
Practicum: Mini-projects to assess the business climate	5
Unit – 3 MONETARY POLICY, FOREIGN TRADE AND INVESTMENT	14

Chapter No. 7 Monetary Policy • Organisation of India's money market • Financial sector reforms • Interest rate policy • Review of monetary policy of RBI	3
Chapter No. 8. Money and Capital Markets • Working of SEBI in India • Changing roles of the Reserve Bank of India • Commercial banks, • Development Fnance Institutions • Foreign banks and Non-banking financial institutions • Analysis of price behaviour in India, Anti-inflationary measures • Demonetization and its impact	5
Chapter No. 9. Foreign Trade and Investment • India's foreign trade • India Balance of payment since 1991 • New Exchange Rate Regime: Partial and full convertibility • Capital account convertibility • FDI – Trends and Patterns • New EXIM policy, WTO and India • Bilateral and Multilateral Trade Agreements and Associations	6
Practicum: 1. Computation and analysis of Wholesale Price Index, Consumer Price Index: components and trends. 2. Group Discussions on India's trade policies and trade agreements	
References • Bardhan, P.K. (9th Edition) (1999), The Political Economy of Development in India, Oxford University Press, New Delhi. • Bhaduri Amit, (2015), A Model of Development By Dispossession, Fourth Foundation • Byres Terence J. (ed.), (1998), The State, Development Planning and Liberalisation 'in India, Delhi, OUP • Dutt Ruddar and K.P.M Sundaram (2001): Indian Economy, S Chand & Co. Ltd. New Delhi	

- Frankel Francine R., (2004), India's Political Economy, Delhi. OUP Jenkins Rob, 2000, Economic Reform in India, Cambridge, CUP
- Jalan, B. (1996), India's Economic Policy- Preparing for the Twenty First Century, Viking, New Delhi.
- Joshi Vijaya and L.M.D. Little, (1998), India's Economic Reform 1991-2001, Delhi, OUP.
- Kapila Uma: Indian Economy: Policies and Performances, Academic Foundation
- Mishra S.K & V.K Puri (2001) "Indian Economy and –Its development experience", Himalaya Publishing House.
- Mukharji Rahul (ed.) (2007), India's Economic Transition: The Politics of Reforms, edited by Rahul Mukherji, Oxford University Press , New Delhi.
- Stuart and John Harris, (2000), Reinventing India, Cambridge Polity

Semester I

Course Title: **OEC 1.5: Kautilya's Arthashastra (OEC)**	
Total Contact Hours: 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60

Course Pre-requisite(s): *12th Standard Pass*

Course Outcomes (COs):

At the end of the course the student should be able to:

1. This course will enlighten the students about the ancient fundamentals about political and economic constituents, which will frame out a basic land of understanding the modern trends. Thiswill help them to understand the upcoming needs in the area of policy making for states at nationaland international level.
2. This treatise deals with the science of Governance, so it projects out all the dimensions needed tobe understood by students about the present socio-economic and political rules and regulations of the state.

Unit	Description	Hours
I	Chapter 1: Introduction to the Arthashastra, Chapter 2: Various disciplines of Indian Education System, Chapter 3: Place of Kautilya Arthashastra among them, **Practicum** • Autobiography of Kautilya	2 2 2
II	Chapter 4: Importance of science dealing with governance - Introduction to Tantrayuktis – The methods of preparing a compendium, tools and techniques of writing a compendium. Chapter 5: Governance Procedure- Appointment of the ministers, duties of Government superintendents, treasury, spies, royal writ, punishment- Vakparushya and Dandaparushya; Chapter 6: Laws of Inheritance – Determination of forms of Agreements, determination of legal disputes, Division of inheritance, Special shares in inheritance, Distinction between sons	5 5 5

III	Chapter 7: Economic Dimension- Body of income of the state, collection of revenue, duties of a Chamberlin (koshadhyksha), forty ways of embezzlement of the revenue, punishment for the embezzlement of revenue, expenditure, Loss and Profit, Keeping up the Accounts, Recovery of Debts, Deposits of the state, Resumption of the gifts, Remission of Taxes Chapter 8: Political Dimension- Six-fold Policy- War, Combination of Powers, Agreement of Peace with or without definite terms, Double Policy, Circle of States, Conduct of Corporations, Secret means, Plan of treatise, Chapter 9: Defence and Warfare: Planning of different Vyuhas in War **Practicum** • Taxation policy of Kautilya	9 9 3

Suggested readings:

1. Arthashastra of Kautilya by T. Ganapati Shastri, Chaukhambha Surbharti Prakashana, Varanasi, India, 2005.

2. Arthashastra of Kautilya by Sri. Vacaspati Gairola, Chaukhambha Vidyabahavan, Varanasi, India, 2013.

3. Kautilya, The Arthashastra by L.N. Rangarajan, Penguin Books Ltd, London.

4. Kautilya's Arthashastra: The Way of Financial Management and Economic Governance, Jaico Publishing House, Mumbai, India.

Semester 1

Course Title: **OEC 1.5: Pre-Reforms Indian Economy (OEC)**	
Total Contact Hours: 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60

Course Pre-requisite(s): *12th Standard Pass*

Course Outcomes (COs):

At the end of the course the student should be able to:

i. Trace the evolution of Indian Economy
ii. Identify the structural features and constraints of the Indian economy
iii. Evaluate planning models and strategy adopted in India
iv. Analyze the sector specific problems and contributions towards overall economic growth
v. Review various economic policies adopted

Unit	Description	Hours
I	**Features and problems of Indian Economy**	**15**
	Chapter 1: Features of Indian Economy • India as a developing economy, • Demographic features • Human Development (HDI), • Problems of Poverty, Unemployment, Inflation, income inequality	4
	Chapter 2: Issues in Agriculture sector in India • Land reforms • Green Revolution • Agriculture marketing in India • Agricultural price policy	6
	Chapter 3: Industrial and Service Sector • Industrial development; • Micro, Small and Medium Enterprises, • Industrial Policy • Performance of public sector in India, • Service sector in India. **Practicum:** 1. Identifying economic problems and their causes; 2. Mini-project on any aspect of Indian agriculture, industry, service and public sectors	5
II	**Economic Policies**	13
	Chapter 4: Planning • Mixed Economy • Bombay Plan • Gandhian Model • Nehru Mahalanobis Model • Objectives and achievements of economic planning in India	5
	Chapter 5: Monetary policy in India • Instruments of Monetary Policy • Black money in India – Magnitude and Impact	2

	Chapter 6: Fiscal Policy in India • Tax Revenue • Public expenditure • Budgetary deficits • Fiscal reforms • Public debt management and reforms • Centre state Finance Relations and Finance commissions in India. **Practicum:** Assignment on successes and failures of India's planning; Monetary and Fiscal Policy instruments	6
III	**External sector and Nature of Reforms in India**	**14**
	Chapter 7: India's foreign trade • Salient features • Value, composition and direction of trade • Balance of payments • Goal of self-reliance based on import substitution and protection • Tariff policy • Exchange rate **Chapter 8: Post-1991 strategies** • Stabilisation and structural adjustment packages • Liberalisation Privatisation Globalisation (LPG) Model • Impact of LPG Policies on Indian Economy **Chapter 9: NITI Ayog** • Organization • Functions Practicum: Calculation of BoP and evaluating trade policies; Assignment and group discussion on the impact of LPG Policies	6 6 2

Suggested Readings:

1. Dutt Ruddar and K.P.M Sundaram (2001): Indian Economy, S Chand & Co. Ltd. New Delhi.
2. Mishra S.K & V.K Puri (2001) "Indian Economy and –Its development experience", Himalaya Publishing House.
3. Kapila Uma: Indian Economy: Policies and Performances, Academic Foundation
4. Bardhan, P.K. (9th Edition) (1999), The Political Economy of Development in India, Oxford University Press, New Delhi.
5. Jalan, B. (1996), India's Economic Policy- Preparing for the Twenty First Century, Viking, New Delhi.

Semester 1

Course Title: **OEC 1.5: Development Studies (OEC)**	
Total Contact Hours: 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60

Course Pre-requisite(s): *12th Standard Pass*

Course Outcomes (COs):

At the end of the course the student should be able to:

i. Graduates will be able to excel in higher studies and/or to succeed in profession.
ii. Graduates will get a solid foundation of fundamentals required to solve socioeconomic problems and also to pursue higher studies.
iii. Graduates will demonstrate knowledge to appreciate of the dimensions of contemporary development issues, to generate sensitivity to problems concerning ethics and human values to develop orientation towards effective communication and critical analysis, and to appreciate the interrelationships among disciplines asthey relate to everyday realities.
iv. Graduates will cultivate professional and ethical attitude, effective Communication skills, teamwork skills, multidisciplinary approach, and to facilitate an advanced understanding and appreciation of the principles, methodologies, value systems, and thought processes employed in human inquiries.

Unit	Description	Hrs
I	**Development: Meaning and Current Challenges**	**9**
	Chapter 1: Meaning of Development • The concept of development, • Growth and Development • Transition from quantitative to qualitative indices	3
	Chapter 2: Modern economic growth • Characteristics of modern economic growth • Regional and global disparities • Common characteristics and dissimilarities among developing countries.	3
	Chapter 3: Current Development Challenges • Inequality • Migration • Conflicts Practicum: • Qualitative and Quantitative Indices • Global and Regional Disparity in Growth	3
II	**Approaches to Development**	12
	Chapter 4: Development Ethics • Concept and meaning • Principles and importance of Development Ethics	2
	Chapter 5: Assessing Development • Per capita income	4

	• PQLI • Choice and Capabilities • HDI **Chapter 6: Approaches of Development** • Adam Smith	6
	• Marx • Schumpeter • Structuralist approach • Neo-liberalism, IMF and structural adjustment • Capabilities Approach Practicum: • CALCULATION OF PQLI • CALCULATION OF HDI	
III	**Theories and Current Issues in Development**	21
	Chapter 7: Theories of Development • Theorizing Development - Modernization Theory, Dependency Theory • Capitalist World System • The evolution of thought on poverty reduction • Colonial Regimes and Their Legacies **Chapter 8: The Industrial Revolution** • Genesis and Spread • International specialization of Labour/Industry • Industrial Labour • ILO and its activities to promote labour standards **Chapter 9: Environment and development** • Increasing degradation of natural environment – water and air pollution and deforestation • Depletion of global commons • Sustainable development - concept and measures • SDGs • Climate Change – Causes, Impact, Measures of Mitigation and Adaptations Practicum: • ILO AND LABOUR STANDARDS • SDGs PERFORMANCE	6 5 10

Suggested Readings:

1. Crocker, D. (2008). Ethics and development theory-practice, Ethics of Global Development Agency, Capability, and Deliberative Democracy, 67-106
2. Des Gasper (2008), 'Denis Goulet and the Project of Development Ethics: Development, 8, 99. 481-9, Elsevier Science, 1, pp.10-26.
3. Drèze, Jean and Amartya Sen(2002), India: Development and Participation, second edition. Oxford: Oxford University Press.
4. Gasper, D. (2004). The ethics of development: From Economism to human development. Edinburgh: Edinburgh University Press
5. Huntington, Samuel (1971), The change to change: Modernization, development and politics. Comparative Politics, 3.
6. Myrdal, Gunnar. (1974), "What is Development?" Journal of Economic Issues 8(4):729-736.
7. Peet, Richard with Elaine Hartwick (2009), Theories of Development: Contentions, Arguments, Alternatives (2nd edition). New York: Guilford.
8. Sen, Amartya (1999) Development as Freedom. New York: Anchor Books.

Semester II

Course Title: **DSC 2.2: Basic Economics II**	
Total Contact Hours: 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60

Course Pre-requisite(s): *Basic Economics I*

Course Outcomes (COs):

At the end of the course the student should be able to:

4. Understand the operation of the overall economic system;
5. Calculate national income and related aggregates
6. Explain the relationship between macroeconomic aggregates;
7. Analyse the nature of business cycles and policies towards controlling them;
8. Evaluate the macroeconomic policies for solving major problems like poverty and unemployment

Unit	Description	Hrs
I	**Macroeconomic Concepts and Relationships**	**12**
	Chapter 1: Macroeconomy • Introduction to National Income Accounting • Concepts of GDP, GNP and national income • Approaches to calculating GDP, personal income, Nominal and real GDP • Limitations of the GDP concept	5
	Chapter 2: Monetary economy • Characteristics • The demand for money • The supply of money and overall liquidity position • credit creation	4
	Chapter 3: Inflation • Meaning and causes of inflation • Calculating inflation rate • Impact of inflation	3
	Practicum: 1. Understanding the relationships between various NI concepts used in India's NI accounting; 2. Estimating the components of money supply and interpreting the various price indices	
II	**Macroeconomic Challenges and Policies**	12
	Chapter 4: Macroeconomic challenges • Unemployment • Economic Growth • Business Cycles	3
	Chapter 5: Monetary Policy • Objectives • Instruments	3
	Chapter 6: Fiscal Policy • Public finance vs. Private finance • Fiscal functions and role of government: allocation, distribution and stabilisation • Characteristics of public goods,	6

	• Rationale of public provision of public goods Practicum: 1. Reviewing the monetary policy of RBI; 2. A project to identify the nature and causes of poverty and the latest central budget	
III	**Public Policy and Globalization**	18
	Chapter 7: Poverty and public policy • Meaning, measurement and types of poverty • Poverty alleviation strategies in India **Chapter 8: International Trade** • The economic basis for trade—absolute advantage and comparative advantage, • terms of trade • exchange rates • Trade Barriers-tariffs, subsidies and quotas Balance of Payments-The current and capital account **Chapter 9: Globalization** • Meaning • Importance • Pros and cons of Globalization Practicum: Survey on identification of poor; Calculating the components of BoP of India	6 9 3

References (indicative)

1. Cohen, A.J. (2020). *Macroeconomics for Life: Smart Choices for All? + MyLab Economics with Pearson eText* (updated 2nd ed.). Toronto, ON: Pearson Canada Inc. Type: Textbook: ISBN: 9780136716532
2. Cohen, A.J. (2015). *Microeconomics for Life: Smart Choices for You + MyLab Economics with Pearson eText* (2nd ed.). Toronto, ON: Pearson Canada Inc. Type: Textbook: ISBN: 9780133899368
3. Case Karl E. and Fair Ray C. Principles of Economics, Pearson Education Asia, 2014.
4. Mankiw N. Gregory. Principles of Economics, Thomson, 2013.
5. Stiglitz J.E. and Walsh C.E. Principles of Economics, W.W. Norton & Co, New York, 2011.

Semester II

Course Title: **DSC 2.3: Karnataka Economy**	
Total Contact Hours: 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60

Course Pre-requisite(s):

Course Outcomes (COs):

At the end of the course the student should be able to:

4. Understand the nature of economic growth and problems of Karnataka state.
5. Explain the process of structural growth in Karnataka economy;
6. Evaluate the policies and programmes undertaken by the Govt. of Karnataka for bringingabout socio-economic development

Unit	Description	Hours
I	**Characteristics of Karnataka Economy**	**12**
	Chapter 1: State Income • State Domestic Product and PCI • Measures to redress regional imbalances	2
	Chapter 2: Human and Natural Resources • Population • Human Development Index • Poverty and Unemployment– Anti-Poverty and Employment generation Programmes • Functioning of Panchayat Raj Institutions	6
	Chapter 3: Natural Resources in Karnataka • Land, Water, Forest and mineral resources in Karnataka Karnataka Sustainable Development Goals • Karnataka environmental Policy Practicum: • Regional imbalance in Karnataka • Measurement of HDI	4
II	**Agriculture and Industries in Karnataka**	18
	Chapter 4: Agriculture in Karnataka • Importance of Agriculture • Problems in Agriculture • Land Reforms • Cropping Pattern • Irrigation • Watershed Development • Dry Land Farming • Farmers Suicide – causes and solutions	9
	Chapter 5: Rural Development • Public Distribution System • Rural Development Programmes.	3
	Chapter 6: Industries in Karnataka	6

	• Major Industries in Karnataka - Problems and Prospects • MSMEs - Problems and Measures • IT Industries in Karnataka • Industrial Finance in Karnataka • Industrial Policy of Karnataka Practicum: • Group Discussion – Farmer's Suicide • Structure of PDS • Seminar on MSME's Opportunities and Challenges	
III	**Infrastructure and Finances**	12
	Chapter 7: Infrastructure in Karnataka • Transportation: Road, Rail, Water and Air Transport • Information and Communication Technology facilities; Chapter 8: Social Infrastructure • Drinking Water, Sanitation • Housing • Health and Education • Social Security in Karnataka **Chapter 9: State Finance** • Sources of Revenue: Direct and Indirect Taxes • GST – Impact and Collections • Sharing of Central Taxes and Grand-in-Aid • Expenditure Sources • States Indebtedness • State Finance Commission • State Budget Practicum: • Social Infrastructure • State Budget • GST Implications	3 4 5

References (indicative)

1. Government of Karnataka, Economic Survey [Various Issues]
2. Planning Department, Annual Publication, Government of Karnataka.
3. Karnataka at Glance, Annual Publication Government of Karnataka.
4. Madaiah M & Ramapriya. Karnataka Economy Growth: Issues and Development, Himalaya Pub., House, New Delhi.
5. Adul Aziz and K.G. Vasanti. (Eds) Karnataka Economy.
6. Government District Development Reports
7. Hanumantha Rao. Regional Disparities and Development in Karnataka.
8. Krishnaiah Gowda H.R. Karnataka Economy, Spandana Publications, Bangalore
9. Nanjundappa D.M. Some Aspects of Karnataka Economy.
10. Puttaswamiah K. Karnataka Economy, Two Volumes

Semester II

Course Title: **OEC 2.5: Contemporary Indian Economy**	
Total Contact Hours: 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60

Course Pre-requisite(s):

Course Outcomes (COs):

At the end of the course the student should be able to:

vi. Understand the current problems of Indian Economy
vii. Identify the factors contributing to the recent growth of the Indian economy
viii. Evaluate impact of LPG policies on economic growth in India
ix. Analyze the sector specific policies adopted for achieving the aspirational goals
x. Review various economic policies adopted

Content of Course	42 Hrs
Unit – 1 LPG POLICIES, ECONOMIC REFORMS AND AGRICULTURE	14
Chapter No. 1 Recent Issues • Genesis and Impact of LPG • India's population policy • Demographic Dividend • India's human development in global perspective	4
Chapter No. 2 Urbanization and governance • Urbanization and Smart City Mission • Informal sector • Impact of COVID-19 Pandemic • Atma Nirbhara Bharat Abhiyan	4
Chapter No. 3 Economic Reforms and Agriculture • Agriculture and WTO • Price policy and Subsidies • Commercialisation and Diversification • Public Distribution System • Impact of public expenditure on agricultural growth • Agrarian Crisis, Doubling Farm Incomes, MGNREGS	6
Practicum 3. Mini-project to ascertain the impact of pandemic on lives of different sections of population 4. Field visits to understand the agrarian situation	
Unit – 2 INDUSTRY, BUSINESS, FISCAL POLICY	14
Chapter No. 4. Industrial Policy • New Industrial Policy and changes • Public sector reform • Privatisation and Disinvestment • Competition Policy	4

Chapter No. 5. Business • Ease of Doing Business • Performance of MSMEs • Role of MNC's in Industrial Development • Make in India, development of economic and social infrastructure • National Monetization Pipeline (The teacher should include the latest policy of the government) **Chapter No. 6. Fiscal Policy** • Tax, Expenditure, Budgetary deficits • Pension and Fiscal Reforms • Public debt management and reforms • Fiscal Responsibility and Budget Management (FRBM) Act • GST, Fiscal Federalism and Fiscal Consolidation • Recommendations of the Current Finance Commission **Practicum**: Mini-projects to assess the business climate	5 5
Unit – 3 MONETARY POLICY, FOREIGN TRADE AND INVESTMENT	14
Chapter No. 7 Monetary Policy • Organisation of India's money market • Financial sector reforms • Interest rate policy • Review of monetary policy of RBI **Chapter No. 8.** Money and Capital Markets • Working of SEBI in India • Changing roles of the Reserve Bank of India • Commercial banks, • Development Fnance Institutions • Foreign banks and Non-banking financial institutions • Analysis of price behaviour in India, Anti-inflationary measures • Demonetization and its impact **Chapter No. 9. Foreign Trade and Investment** • India's foreign trade • India Balance of payment since 1991 • New Exchange Rate Regime: Partial and full convertibility • Capital account convertibility • FDI – Trends and Patterns • New EXIM policy, WTO and India • Bilateral and Multilateral Trade Agreements and Associations **Practicum**: 3. Computation and analysis of Wholesale Price Index, Consumer Price Index: components and trends. 4. Group Discussions on India's trade policies and trade agreements **References** • Bardhan, P.K. (9th Edition) (1999), The Political Economy of Development in India, Oxford University Press, New Delhi. • Bhaduri Amit, (2015), A Model of Development By Dispossession, Fourth Foundation • Byres Terence J. (ed.), (1998), The State, Development Planning and Liberalisation 'in India, Delhi, OUP • Dutt Ruddar and K.P.M Sundaram (2001): Indian Economy, S Chand & Co. Ltd. New Delhi.	3 5 6

- Frankel Francine R., (2004), India's Political Economy, Delhi. OUP Jenkins Rob, 2000, Economic Reform in India, Cambridge, CUP
- Jalan, B. (1996), India’s Economic Policy- Preparing for the Twenty First Century, Viking, New Delhi.
- Joshi Vijaya and L.M.D. Little, (1998), India's Economic Reform 1991-2001, Delhi, OUP.
- Kapila Uma: Indian Economy: Policies and Performances, Academic Foundation
- Mishra S.K & V.K Puri (2001) “Indian Economy and –Its development experience”, Himalaya Publishing House.
- Mukharji Rahul (ed.) (2007), India’s Economic Transition: The Politics of Reforms, edited by Rahul Mukherji, Oxford University Press , New Delhi.
- Stuart and John Harris, (2000), Reinventing India, Cambridge Polity

Semester II

Course Title: **OEC 2.5: Sustainable Development**	
Total Contact Hours: 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60

Course Pre-requisite(s):

Course Outcomes (COs):

At the end of the course the student should be able to:

i. Understand the basic concept of Sustainable Development (SD), the environmental, socialand economic dimensions.
ii. Know the history of the SD idea.
iii. Be able to discuss the conflicts which are involved in the SD concept on the national as wellas on the global scale.
iv. Be able to discuss the (dis-)advantages of instruments for SD;
v. Evaluate the sustainable development goals and their attainments

Unit	Description	Hrs
I	**Environment, Development and Pollution**	**15**
	Chapter 1: Meaning Characteristics of Environmental Goods and Services • Relationship between Environment and Development • Environmental Kuznets Curve – Meaning and Evidence • Sustainable Development – Meaning and Indicators	3
	Chapter 2: Resource Use and Management • Resource Taxonomy – Renewable and nonrenewable resources • Economic Theory of Depletable Resources • Optimal Use of Renewable Resources • Resource Scarcity and Economic Growth – Limits to Growth Model • Tragedy of Commons and common property Resources • Resource Pricing and Resource Conservation	6
	Chapter 3: Sustainable Development • Definitions, Objectives and Principles • Processes and Indicators of Sustainable Development • Approaches and Strategies for Sustainable Development • Environmental accounting Measures **Practicum:** Miniproject on impact of development on local environment	6
II	**Sustainable Development Goals**	10
	Chapter 4: Introduction and History • Brundtland Committee Recommendations • Rio Summit and Agenda 21 • SDGs: Goals, Targets and Indicators	3
	C**hapter 5: Government and the SDGs** • Planning • Localizing the SDGs • SDG Policy Instruments • Industrial Policies and the SDGs	4
	Chapter 6: Financing the SDGs	3

	• Types of financing • New financing mechanisms and global funds **Practicum:** Assignments on Progress in attainment of various SDGs in India and her states	
III	**Issues in Implementing SDGs**	17
	Chapter 7: Means to Realizing the SDGs • Degrowth and circular economy • Sustainable production and consumption • Sustainable cities and transportation • Sustainable designs, technology, digital revolution and innovation • Renewable energy **Chapter 8: Implementing SDGs** • governance and policy tools • openness, participation and accountability, • effectiveness and coherence; • India's framework for sustainable development **Chapter 9: Other Issues** • Social business, CSOs, and operations • Development Assistance • Cross-Border Cooperation **Practicum:** Group Discussion on case studies on sustainable practices and processes	8 5 4

Suggested Readings:

- Baumol, W.J. and W.E. Oates (1988): *The Theory of Environmental Policy* (2e), CUP, Cambridge.
- Bhattacharya, R.N. (Ed): Environmental Economics: An Indian Perspective, OUP, New Delhi.
- Dalby, Simon, et al. Achieving the Sustainable Development Goals: Global Governance Challenges. Routledge, 2019.
- Day, G.S., and P.J.H. Schoemaker (2011), Innovating in uncertain markets: 10 lessons for green technologies, MIT Sloan Management Review, 52.4: 37-45.
- Elliott, Jennifer. An introduction to sustainable development. Routledge, 2012.
- Gagnon, B., Leduc, R., and Savard, L., Sustainable development in engineering: a review of principles and definition of a conceptual framework. Working Paper 08-18, 2008.
- Hanley, Shogren and White (1997): *Environmental Economics in Theory and Practice*, Macmillan.
- Kolstad, C.D. (1999): *Environmental Economics*, OUP, ND.
- Pearce, D.W. and R. Turner (1991): *Economics of Natural Resource Use and Environment*, John Hopkins Press, Baltimore.
- Sachs, Jeffrey D. The age of sustainable development. Columbia University Press, 2015
- Tietenberg, T. (1994): *Environmental Economics and Policy*, Harper Collins, NY.

Semester II

Course Title: **OEC 2.5: Economics of Business Environment**	
Total Contact Hours: 42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60

Course Pre-requisite(s):

Course Outcomes (COs):

At the end of the course the student should be able to:

i. Explain the elements of Business environment.
ii. Identify the environmental constraints in the growth of a business firm.
iii. Analyze the ways to utilize the current environmental conditions to achieve higher businessgrowth.

Unit	Content of Course	42 Hrs
I	**Introduction to Business Environment**	12
	Chapter 1: Introduction • Meaning and definition, objectives, importance and uses of study of business environment. Environmental analysis • Meaning, process of environmental analysis, limitations of environmental analysis, environmental factors • The Micro environment of business and the macro environment of business.	3
	Chapter 2: Economic Environment • Meaning of Economic Environment • Characteristics of Indian economy • Impact of Liberalization Privatization & Globalization of Indian Business. • Monetary policy – Meaning, objectives • Fiscal policy – Meaning, objectives, budget and importance • EXIM policy – meaning and objectives • Industrial policy – meaning, objectives (Latest Policy Measures).	6
	Chapter 3: Global Business Environment • Meaning • Globalization: Nature and Impact of globalization • Challenges of international business • GATT and WTO and its implications on Indian economy.	3
	Practicum 1. Identification of the impact of business environment through surveys 2. Group discussion on WTO and its impact on Indian business	
II	**Non-Economic Environment**	10
	Chapter 4: Social and Cultural Environment • Business and Society • Social Objectives of Business • Corporate Social Responsibility • Consumer Rights & Corporate Governance • Business Ethics	4
	Chapter 5: Technological Environment: • Meaning	2

	• Technological changes – R & D in India • Public and Private Investment in R and D. **Chapter 6: Financial Environment** • Introduction and Meaning • An Overview of Indian Financial System • Financial Institutions and their Roles • Role of Foreign Direct Investment and its impact on Indian Business **Practicum:** Students are expected to analyze the major economic and financial indicators such as GDP, Inflation, CPI, BSE, NSE, Currency, Gold rate, Oil barrel price etc., for a particular period of time and submit the report on the same.	4
III	**Government and Business in India**	22
	Chapter 7: Political Environment • Introduction and Meaning • Political Environment and the Economic system • Government and Business Relationship in India • Provisions of Indian Constitution for Business **Chapter 8: Legal Environment of Business** • Indian Company Law • Competition policy and law • Patents & Trademarks • Industrial Policy- An overview • Labor Laws & Social Security, • Environmental Laws. **Chapter 9: Current Issues** • Ease of Doing Business • Performance of MSMEs • Make in India, • Development of economic and social infrastructure • National Monetization Pipeline (The teacher should include the latest policy of the government) **Practicum:** Students are expected to give a report on how the economic environment has affected the performance of any five large Indian Business Houses.	4 8 10
REFERENCES: Francis Cherunilam: Business Environment, Himalaya Publishing House, Mumbai. K. V. Sivayya and VBM Das: Indian Industrial Economy, Sulthan Chand Publications, Delhi. M. Adhikari: Economic Environment of Business, Sulthan Chand and Sons, New Delhi. Raj Agarwal: Business Environment, Excel Publications, New Delhi.		

MODEL QUESTION PAPER

..... Semester B.A. (Hon.) Economics Degree Examination 2021-2022

Time 3 Hours Max Marks: 60

Instruction to candidates:

1. Answer all the three sections
2. Draw the diagrams wherever necessary
3. Section D is Compulsory

SECTION-A

1. Answer any Three of the following Questions in one or two sentences 5X2=10

(a)
(b)
(c)
(d)
(e)
(f)
(g)

SECTION-B

Answer any Five of the following Questions 3X5= 15

2.
3.
4.
5.
6.

SECTION-C

Answer any Two of the following Questions 2X10=20

7.
8.
9.
10.

SECTION-D

15 Marks

11. Caselet

RANI CHANNAMMA UNIVERSITY, BELAGAVI

DEPARTMENT OF STUDIES IN ECONOMICS

PROGRAM /COURSE STRUCTURE AND SYLLABUS

As per the Choice Based Credit System (CBCS) designed inaccordance with Learning Outcomes-Based Curriculum Framework (LOCF) of National Education Policy (NEP) 2020

For

B.A. Economics Degree (Honours)

III & IV Semester

w.e.f.

Academic Year 2021-22 and onwards

PREAMBLE

Education empowers Mankind. A holistic education paradigm will effectively focus on developing knowledge, employable skill sets, appropriate attitudes and an overall personality. NEP is focused towards imparting such an education system.

India's first education policy of the 21st century is 'National Education Policy 2020' proposes the revision and revamping of all aspects of the education structure, including its regulation and governance. It seeks to create a new system that is aligned with the developmental aspirations & goals of 21st century education, including SDG4, while building upon India's traditions and value systems.

NEP aims for India to have an education system by 2040 that is second to none, with equitable access to the highest-quality education for all learners regardless of social or economic background and seeks to ***"ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030."***

Vision of the National Education Policy 2020

- ✓ An education system that contributes to an equitable and vibrant knowledge society, byproviding high-quality education to all.
- ✓ Develops a deep sense of respect towards the fundamental rights, duties and Constitutional values, bonding with one's country, and a conscious awareness of one's role and responsibilities in a changing world.
- ✓ Instils skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly globalcitizen.

As India is enjoying the demographic dividend, which will last till 2055 and to reap the benefits, a good education policy was the need of the hour. Hence there is lot of hopes on the NEP, which has come as cure the edu-ailments and to plug the shortcomings of the education system which marred for 36 years and strengthen our education system. Expectations on NEP is high. As every good policy success lies in the implementation and active participation of its stake holders, so is the NEP. The success or failure of NEP lies in all our hands. Hence Let all of us join our hands in making the NEP successful.

As enshrined in the National Education Policy-2020 vision of introducing course curriculum for undergraduate studies under Choice Based Credit System (CBCS), the main objective of framing this curriculum of BA/B.Sc. (Basic/Hons) in Economics is to impartthe students a holistic understanding of the subject giving substantial weightage to the core contents, skill, value-based and ability enhancement. The syllabus has given due importance on the main streams of the body of knowledge on Economics" with due recognition of its wide spectrum. The ultimate goal of the syllabus is to enable the students to have an in- depth knowledge on the subject and enhance their scope of employment at every level of exit. Adequate emphasis has been given on the new and emerging techniques and understanding of the subject under the changing regime and global context.

There is a need to strengthen the students to understand essential aspects of economics in diverse subject areas not only in social sciences, but also among other natural and physical sciences. The curriculum lays focus on creating new knowledge, acquiring new skills and capabilities in Economics producing an intelligent human resource serving the Economy and society

PROGRAM OUTCOMES

The Programme outcomes (POs) are expected to be as under:

- Students will be able to understand economic vocabulary, methodologies, tools and analysis procedures.
- Students will be familiar with the knowledge and application of micro economics for the formulation of policies and planning.
- Students will learn to apply economic theories and concepts to contemporary social issues, as well as analysis of policies.
- Students will be able to understand the impact of government policies and will be able to assess the consequences of the policies on the parties involved.
- As the programme along with economics contains like statistics, mathematics, it enhances them to compute and assess the real situation of the economy including the size and changes of population, income pattern, and rate of development with pattern of savings and investments and social security measures adopted in the country.
- Understand the basics of Quantitative techniques their applications
- Critically evaluate the ongoing economic developments in India and abroad
- **Understand research methods in economics**
- Student develops an awareness of career choices and the option for higher studies.

CONTINUOUS INTERNAL EVALUATION AND SEMESTER ENDEXAMINATION

Total marks for each course shall be based on continuous assessments and term end examinations. As per the decision of the Karnataka State Higher Education Council, it isnecessary to have uniform pattern of 40: 60 for CIA and Semester End examinations respectively, among all the Universities, their affiliated and autonomous colleges.

The committee deliberated on the same and suggested the following pattern for the CIEMarks.

Sl.No.	Parameters for the Evaluation	Marks
Continuous Internal Evaluation (CIE)		
A	Continuous & Comprehensive Evaluation (CCE)	**20 Marks**
B	Internal Assessment Tests (IAT)	**20 Marks**
	Total of CIE (A+B)	**40 Marks**
C	Semester End Examination (SEE)	**60 Marks**
	Total of CIE and SEE (A + B + C)	**100 Marks**

Evaluation process of IA marks may be as follows:

- The first component (C1), of assessment is for 20 marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course/s and within the first half of the semester.
- The second component (C2), of assessment is for 20 marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of the remaining 50 percent of syllabus of the courses of the semester.
- During the 17^{th} – 20^{th} week of the semester, a semester end examination of 3 hours duration shall be conducted by the University for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.
- In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shallbe deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the concerned teacher/ Program Coordinator / HOD and suitable decision taken accordingly.

- For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (of A4 size), graph sheets etc., required for such tests / assignments and these be stamped by the concerned department using their department seal at the time of conducting tests / assignment / work etc.

The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under:

Outline for continuous assessment activities for C1 and C2

Activities	**C1**	**C2**	**Total Marks**
Session Test	10 marks	10 marks	20
Seminars etc.	10 marks		10
Case study / Assignment / Field work / Project work/ Academic Economics Quiz/Review of the Book/ etc		10 marks	10
Total	20 marks	20 marks	40

PROGRAM STRUCTURE

The following is the Program Structure for the B.A. (Hon.) Economics Program of Rani Channamma University:

Sem.	Discipline Core (DSC) (Credits) (L+T+P)	Discipline Elective(DSE)/ Open Elective (OE) (Credits) (L+T+P)	Ability Enhancement Compulsory Courses (AECC), Languages (Credits) (L+T+P)		Skill Enhancement Courses (SEC)			Total Credits
					Skill based (Credits) (L+T+P)	Value based (Credits) (L+T+P)		
I	DSC-1: Basic Economics –I (3) DSC-2: Contemporary IndianEconomy (3)	OE-1: Kautilya's Arthshastra 2. Pre-reforms IndianEconomy 3. Development Studies (3)	L1-1(3), L2-1(3) (4 hrs. each)		SEC-1: Digital Fluency (2) (1+0+2)	Physical Education - Yoga (1) (0+0+2)	Health & Wellness (1) (0+0+2)	25
II	DSC-3: Basic Economics -II (3) DSC-4: Karnataka Economy (3)	OE-2: 1. Contemporary Indian Economy 2. Sustainable Development 3. Economics of Business Environment (3)	L1-2(3), L2-2(3) (4 hrs. each)	Environmental Studies (2)		Physical Education- Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Exit option with Certificate in Economics (48 credits)								
III	DSC-5: Micro Economics (3) DSC-6: Mathematical Economics (3)	OE-3: 1. Rural Economics 2. Economics ofInsurance 3. Economics of Human Development (3)	L1-3(3), L2-3(3) (4 hrs each)		SEC-2: Artificial Inte-Iligence (2) (1+0+2)	Physical Education-Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
IV	DSC-7: Macro Economics (3) DSC:8 Statistics for Economics (3)	OE-4: 1. KarnatakaEconomy 2. EntrepreneurialEconomics 3. Economics andLaw 4. Economics GST (3)	L1-4(3), L2-4(3) (4 hrs each)	Constitution of India (2)		Physical Education-Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25

Exit option with Diploma in Economics (96 credits)								
V	DSC-9: Public Economics (4) DSC-10: Development Economics (4)	DSE-1: (3) 1. Agricultural Economics 2. Industrial Economics 3. Financial Economics (choose 1) VOC-1: 1. Entrepreneurial Economics 2. Digital Economics (3)			SEC-3: SEC such as Cyber Security (2) (1+0+2)	Physical Education-Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	22
VI	DSC-11: International Economics (4) DSC-12: Indian Public Finance (4)	DSE-2 1. Labour Economics 2. Economics of Non-Farm Sector 3. Tertiary Economics (Choose 1) (3) VOC-2: 1. Micro EntrepreneursesDevelopment 2. Project Planning &Management (Choose 1) (3)			SEC-4: Professional Communication (2)	Physical Education Sports (1) (0+0+2)	NCC/NSS/R&R(S&G) / Cultural (1) (0+0+2)	24
Exit Option with Bachelor of Economics Degree (144 credits)								
VII	DSC-13: Advanced Micro economics (4) DSC-14: Financial Economics (4) DSC-15: Econometrics (3) DSC- B.A 7. 6	**DSE -3** (3) 1. Population Studies 2. Urban Economics **3.** Economics of Infrastructure (Choose 1) **4. VOC-3** 1. Economics of Governance 2. Gender Economics 3. Economics of Health & Education (Choose 1) (3)						20

	Research Methodology for Economics (3)							
VIII	DSC-16: Economics and Data Analytics (4) DSC-17: Behavioural Economics (4) DSC-18: Environmental Economics (3) DSC- B.A 8. 5 Research Project (6)	**DSE 4** (3) 1. Institutional Economics 2. International Finance 3. Co-operative Economics						20
Award of Bachelor of Economics Honours Degree (186 credits),								

B.A PROGRAM

Proposed Scheme of Teaching and Evaluation for B.A (Basic/Hons) with Economics as Major

Semester –I								
Sl No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L+T+P)**		**CIE**	**Total Marks**	
1	Economics-C1	Basic Economics –I	DSC	3+0+0	60	40	100	
2	Economics-C2	Contemporary IndianEconomy	DSC	3+0+0	60	40	100	
3	Open Electives - Economics	1. Kautilya's Arthshastra 2. Pre-reforms Indian Economy 3. Development Studies	OEC	3+0+0	60	40	100	
								09

Semester –II								
	Course Code	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L+T+P)**		**CIE**	**Total Marks**	**Credits**
1	Economics-C3	Basic Economics - II	DSC	3+0+0	60	40	100	3
2	Economics-C4	Karnataka Economy	DSC	3+0+0	60	40	100	3
3	Open Electives- Economics	4. Contemporary Indian Economy 5. Sustainable Development 6. Economics of Business Environment	OEC	3+0+0	60	40	100	3
Sub- Total								09
Exit option with Certificate (48Credits)								

PROGRAM ARTICULATION MATRIX

Semester	Name of the course- Discipline Specific Core Course (DSCC)	What all program outcomes the course addresses (not exceeding three per course)	Pre-requisite course(s)	Pedagogy	Assessment
1	Basic Economics –I	1. Basic economic concepts and terms. 2. Operation of a market system; 3. Production and cost relationships of a business firm;.	Nil	Lecture	i) Internal Assessment for 30 marks comprising two written tests, assignment/seminar, and attendance; and ii) Written Semester-end Examination for 70 marks
1	Contemporary IndianEconomy	i. Current problems of Indian Economy ii. Recent growth of the Indian economy iii. Impact of LPG policies on economic growth in India	Nil	Lecture	i) Internal Assessment for 30 marks comprising two written tests, assignment/seminar, and attendance; and ii) Written Semester-end Examination for 70marks
2	Basic Economics –II	1. Operation of the overall economic system; 2. Calculate national income 3. Relationship between macroeconomic aggregates;	Nil	Lecture	i) Internal Assessment for 30 marks comprising two written tests, assignment/seminar, and attendance; and ii) Written Semester-end Examination for 70marks
2	Karnataka Economy	1. Economic growth and problems of Karnataka state. 2. Structural growth in Karnataka economy; 3. Policies & Programmes of Govt. of Karnataka	Nil	Lecture	i) Internal Assessment for 30 marks comprising two written tests, assignment/seminar, and attendance; and ii) Written Semester-end Examination for 70marks

ASSESSMENT METHODS

Type of Course	Formative Assessment / IA	Summative Assessment
Theory	40	60
Practical	-	-
Projects	30	70
Experiential Learning (Internships/Social Work Practicum etc.)	-	-

COURSE WISE SYLLABUS

Micro Economics

Program Name	**BA in Economics**	Semester	**Third Semester**
Course Title	**Micro Economics**		
Course Code:	**DSC-3.1**	No. of Credits	**3**
Contact hours	**42 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1. Understand introductory economic concepts.

CO2. Recognize basic supply and demand analysis.

CO3. Recognize the structure and the role of costs in the economy.

CO4. Describe, using graphs, the various market models: perfect competition, monopoly, monopolistic competition, and oligopoly.

CO5. Explain how equilibrium is achieved in the various market models.

CO6. Identify problem areas in the economy, and possible solutions, using the analytical tools developed in the course.

Contents	**42 Hrs**
Unit–1: Basics of Microeconomics	
Chapter:1 Exploring Microeconomics: Nature and scope of economics – opportunity cost, scarcity, production possibility frontier - Market system as a way to organise economic activities, welfare state	3
Chapter:2 Supply and Demand: Determinants of demand and supply; demand and supply schedules and; individual and market demand and supply; shifts in the demand and supply curves; Interaction of demand and supply; Equilibrium price and quantity	3

Practicum:

- Reading and working with graphs
- Estimation of elasticity and discussing its applications; solving problems to estimate the equilibrium price and quantity

Unit -2: Consumption Decisions

Chapter 3 **The Households:** Diminishing Marginal Utility; Indifference curves – Meaning and Properties; budget constraint; Satisfaction Maximization; income and substitution effects; choice between leisure and consumption.	5
Practicum: Conducting a consumer survey to understand their tastes and preferences	
Unit -3: Production and Costs	
Chapter 4: The Firms: Concept of firm and Industry; Production Function; Law of Variable Proportions; isoquant and isocost lines, cost minimizing equilibrium condition; Returns to Scale; Features of Cobb-Douglas Production Function	5
Chapter 5: Cost of Production: Short run and long run costs; Returns to Scale.	3
Practicum: ➢ Analysing reasons for diminishing marginal returns ➢ Examining the relationship between cost and output/ Deriving cost functions from output functions	
Unit -4: Pricing	
Chapter 6: The Markets: Meaning of Market Structure and Types; Pricing under perfect competition; Monopoly pricing and price discrimination; Monopolistic Competition – Features and Pricing; Oligopoly – Interdependence, Collusive and non-collusive oligopoly; Elements of Game theory	7
Chapter 7: The Inputs (Factors): Functional and Personal Income; Demand for and supply of factors; Marginal Productivity Theory of Distribution; Meaning and determinants of Rent, Wages, Interest and Profits	6
Practicum: ➢ Conducting Market Survey to identify the nature and features of markets for different goods/services ➢ Understanding distribution of national income as factor incomes	
Unit -5: Welfare Economics	
Chapter 8: Welfare Economics: Meaning of Welfare; Pigou's Welfare Economics; Compensation principle; Impediments to attain Maximum Social Welfare; Externalities, Market Failure	6
Practicum: Examining day to day externalities and proposing solutions to them	

Unit -6: Economics in Action

Chapter 9: Economic Theory and Policy: Pricing Practices; Basics of Monetary and Fiscal Policies; Controls and Regulations; Incentives and Penalties; Labour policies	4
Practicum: Analysis of latest budget of the Central Government; Review of terminology used in the latest Monetary Policy of the RBI	

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	**Marks**	
	C1	**C2**
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	**40 Marks**	
Formative Assessment as per NEP guidelines are compulsory		

Note: Strictly follow the Practicum

References	
1	Ahuja, H.L. (2008): *Principles of Microeconomics*, S. Chand and Co., New Delhi
2	Mankiw, N. Gregory (2020). *Principles of Economics* (Ninth ed.). Boston, MA.
3	Jhingan, M.L. (2016): *Microeconomics*, Vrinda Publications, New Delhi
4	Koutsoyianis, A (1979): *Modern Microeconomics*, London, Macmillan
5	Omkarnath, G. (2012: *Economics: A Primer for India*, Orient Blackswan, Hyderabad
6	Samuelson, Paul (2004): *Economics*, McGraw-Hill, New Delhi
7	Krishnaiahgouda H.R. (2020): ಸೂಕ್ಷ್ಮ ಅರ್ಥಶಾಸ್ತ್ರ, Sapna Book House, Bengaluru
8	https://www.core-econ.org/the-economy/book/text/0-3-contents.html
9	Somashekhar Ne. Thi., ಸೂಕ್ಷ್ಮ ಅರ್ಥಶಾಸ್ತ್ರ, Sidhlingeshwara Prakashana, Kalburgi.

Mathematics for Economics

Program Name	**BA in Economics**	Semester	**Third Semester**
Course Title	**Mathematics for Economics**		
Course Code:	**DSC-3.2**	No. of Credits	**3**
Contact hours	**42 Hours**	Duration of SEA/Exam	**2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1. Perform basic operations in Sets and functions and Matrix algebra.

CO2. Calculate limits, derivatives of Economic functions and identify the nature of relationship.

CO3. Calculate maxima and minima of function

Contents	**42 Hrs**
Unit–1: Preliminaries	**12 Hrs**
Chapter:1 - Introduction to Mathematical Economics: Nature and scope of mathematical economics- Role of mathematics in economic theory	4
Chapter:2 - Number system and Set theory: Types of Numbers: Natural Number, Real number, integers, Irrational Number, Complex Number. Concepts of sets- meaning –types- union of sets – interaction of sets.	4
Chapter:3 - Functions: Meaning of function- Types of functions: Linear and Non-linear Functions; Quadratic, Polynomial, Logarithmic and Exponential functions-	4
Unit -2: Economic Functions, their Application and Matrices	**14 Hrs**
Chapter 4 Economic Functions: Demand Function, Supply function, Production function, Cost, Revenue and Profit function, Consumption function	4
Chapter-5: Applications of Functions: Graph of Economic Functions, Market equilibrium; Equilibrium price and Quantity, Impact of specific tax and subsidy on market equilibrium	5
Chapter-6: Matrices: Definition and Types of Matrices- Matrix Operations: Addition, Subtraction and Multiplication, Transpose of a Matrix, Determinants of Matrix- Cramer's Rule	5

Unit -3: Differential Calculus and Its Applications	16 Hrs
Chapter 7- Limits: Limits of functions, differentiation, rules of differentiation.	4
Chapter 8 Derivatives of Economic functions: Derivation of Marginal functions from total function-Marginal Production, Marginal cost, Marginal Revenue, Marginal Profit.	6
Chapter 9 - Applications of Derivatives and Higher order derivatives: Elasticity of Demand-Second order derivatives- Maxima and Minima of Economic function.	6

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	**Marks**	
	C1	**C2**
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	**40 Marks**	
Formative Assessment as per NEP guidelines are compulsory		

References	
1	Chiang, A. C. and Wainwright, K., "Fundamental Methods of Mathematical Economics", McGraw-Hill/Irwin, 4th Edition, 2005.
2	Sydsaeter, K and Hammond, P., Mathematics for Economic Analysis, Pearson Educational Asia, 4th Edition, 2002.
3	Allen R.G.D., (2015) Mathematical Analysis for Economists, Macmillan.
4	Bose D., (2003) An Introduction of Mathematical Economics, Himalaya Publishing House, Mumbai.
5	Dowling, E. T., "Introduction to Mathematical Economics", McGraw-Hill, 2001.
6	Hoy, M., Livernois, J. McKenna, C, Rees, R. and Stengos, T., "Mathematics for Economics", MIT Press, 3rd Edition, 2011
7	Sydsaeter, K and Hammond, P., Mathematics for Economic Analysis, Pearson Educational Asia, 4th Edition, 2002.

8	Veerachamy R (2005) Quantitative Methods for Economics, New Age International Publishers Private Ltd. New Delhi.
9	Yamane Taro, (2002) Mathematics for Economists -An Implementer Analysis, Phi Learning Publishers.
10	S. N. Yogish, Mathematical methods for Economists- Mangaldeep publications, Jaipur.

Rural Economics

Program Name	**BA in Economics**	Semester	**Third Semester**
Course Title	**Rural Economics**		
Course Code:	**OE-3.1**	No. of Credits	**3**
Contact hours	**42 Hours**	Duration of SEA/Exam	**2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1. To Understand the basics of rural development,

CO2. To study the characteristics, problems, and programmes of rural redevelopment

CO3. To study the trends and patterns of economic activities in rural areas

CO4. To study the role of infrastructural facilities and governance in rural development

CO5. To enable the students to know about significance of rural enterprises and agricultural allied activities.

Contents	**42 Hrs**
Unit–1:	**12 Hrs**
Chapter:1 - Introduction to Rural Economy Meaning and Objectives of Rural economy Characteristics of Rural Economy Indicators of Rural Development Concepts of inclusive and sustainable development	5
Chapter:2 - Approaches to Rural Development Gandhian Model Community Development Approach, Minimum Needs Approach, Integrated Rural Development and Inclusive Growth Approach.	4

Chapter:3 - Poverty and Unemployment in Rural India Meaning and Measurement of Poverty Causes of Poverty Farm and Non-farm employment Measurement and Types employment Review of Poverty Alleviation and Employment Generation Programmes in India.	5
Practicum: • Field visit to nearby village and study the poverty situation • Field visit to village and study the employment pattern • Undertake evaluation study on employment generation programmes and prepare an assignment.	
Unit -2:	**14 Hrs**
Chapter 4- Rural Enterprises Meaning and Importance, Classification of MSME Progress and Problems of MSME Khadi and Village Industries	5
Chapter-5: Rural Banking and Finance Credit Co-operative Societies Regional Rural Banks Role of NABARD Microfinance Institutions	4
Chapter-6: Rural Infrastructure Educational and Health Infrastructure Housing and Sanitation Drinking Water Supply Rural Transport and Communication Rural Electrification	5
Practicum: • Write an assignment on Rural infrastructure • Write a small report on Rural Industry	
Unit -3:	**14 Hrs**

Chapter 7- Rural Development Programmes Wage Employment Programmes Self-employment and Entrepreneurship Development Programmes Rural Housing Programmes Rural Sanitation Programmes	4
Chapter 8 - Rural Markets Meaning and Types of Rural Markets Defects and Government Measures for Removal of Defects in rural markets Co-operative Marketing Societies Meaning and Importance of Regulated Markets Digital Marketing(e-NAM)	5
Chapter 9 - Rural Governance Legislations powers, Functions, and sources of revenue of Panchayat Raj Institutions Role of NGOs in rural development People's participation in rural development	5
Practicum: • Group Discussion on Rural Governance • Interview Gram Panchayat members and prepare brief note on their participation in rural development. • Undertake evaluation study on rural development programmes and prepare an assignment.	

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	**Marks**	
	C1	**C2**
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	**40 Marks**	
Formative Assessment as per NEP guidelines are compulsory		

Note: Strictly follow the Practicum

References	
1	Chambers, R. (1983): Rural Development: Putting the Last First, Longman, Harlow.
2	Dandekar, V.M. and N. Rath (1971): Poverty in India, GIPE, Pune.
3	Dantwala, M. L. (1973): Poverty in India: Then and Now, 1870-1970, Macmillan, Bombay.
4	Gupta. K .R. (Ed) (2003): Rural Development in India, Atlantic Publishers and Distributors, New Delhi.
5	Jain, Gopal Lal (1997): Rural Development, Mangal Deep Publications, Jaipur,
6	Singh, Katar (1986): Rural Development: Principles, Polices and Management, Sage Publications, New Delhi, (Second Edition).
7	Karalay, G. N. (2005): Integrated Approach to Rural Development: Polices, Programmes and Strategies, Concept Publishing Company, New Delhi.
8	Maheshwari, S. R. (1985): Rural Development in India, Sage, Publications New Delhi.
9	Satya Sundaram, I. (1997): Rural Development, Himalaya Publishing House, Delhi.
10	Mehta, Shiv R. (1984): Rural Development Policies and Programmes, Sage Publications, New Delhi.
11	Tyagi, B. P. (1998): Agricultural Economics and Rural Development, Jai Prakash Math and Co., Meerut.
12	Somashekar Ne. Thi. (2022) ಗ್ರಾಮೀಣ ಅಭಿವೃದ್ಧಿ, Siddalingeshwara publication, Kalburgi.
13	H. R. Krishnaiah Gowda (2022) ಗ್ರಾಮೀಣ ಅಭಿವೃದ್ಧಿ, Mysore book house publication, Mysore.

Economics of Insurance

Program Name	**BA in Economics**	Semester	**Third Semester**
Course Title	**Economics of Insurance**		
Course Code:	**OE-3.2**	No. of Credits	**3**
Contact hours	**42 Hours**	Duration of SEA/Exam	**2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1. Gain knowledge relating to the importance of the insurance in the life of human beings.

Contents	**42 Hrs**

Unit–1: Introduction to Economics of Insurance

Chapter:1 - Fundamentals of Economics of insurance

- Definition of insurance
- Scope of economic of insurance
- Importance of insurance

Chapter:2 - The conceptual framework

- Brief history of insurance
- Perils and risks in insurance, Classification of risks hazards
- How insurance works
- Classes of insurance and assumptions

Chapter:3 - Type of Insurance

- Risk pooling and risk transfer in insurance
- Social vs private insurance
- Life vs non-life insurance

Unit -2: Insurance Planning

Chapter 4- Types of Insurance Planning

- Wealth accumulation plan lifecycle planning
- Planning for wealth accumulation
- Tax advantage and tax non-advantage

Chapter-5: Retirement Planning

- Essential of individual retirement planning
- Investing pension plan, basic principles of pension plans
- Pension plans in India

Chapter-6: General Insurance Structure

- General Insurance, concept of General Insurance
- Types of General Insurance, Marine Insurance, Motors Insurance, Agricultural Insurance
- Fire Insurance, Personal Accident Insurance

Unit -3: personal insurance / Health Insurance

Chapter 7- Essential of Life and Health Insurance

- Fundamentals of Life and Health Insurance, functions of Life and Health Insurance
- Health Insurance and Economic Development, Insurance and Farmer Security

Chapter 8 - Insurance Documentation

- Health Insurance products, Health Insurance underwriting
- Health Insurance claims

Chapter 9 - Insurance Legislation

- The insurance act, 1938- Registration- Accounts and Returns
- Investments -Limitation on expense of Management
- Regulation of Insurance, Insurance regulation in India, role and need of regulation, history of insurance regulation in India
- Insurance Reforms Development Authority (IRDA), performance of IRDA
- Indian Insurance in global platform, future potential in Indian Insurance Business

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	**Marks**	
	C1	**C2**
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	**40 Marks**	
Formative Assessment as per NEP guidelines are compulsory		

References	
1	Chambers, R. (1983): Rural Development: Putting the Last First, Longman, Harlow.
2	Dandekar, V.M. and N. Rath (1971): Poverty in India, GIPE, Pune.
3	Dantwala, M. L. (1973): Poverty in India: Then and Now, 1870-1970, Macmillan, Bombay.
4	Gupta. K .R. (Ed) (2003): Rural Development in India, Atlantic Publishers and Distributors, New Delhi.
5	Jain, Gopal Lal (1997): Rural Development, Mangal Deep Publications, Jaipur,
6	Singh, Katar (1986): Rural Development: Principles, Polices and Management, Sage Publications, New Delhi, (Second Edition).
7	Karalay, G. N. (2005): Integrated Approach to Rural Development: Polices, Programmes and Strategies, Concept Publishing Company, New Delhi.
8	Maheshwari, S. R. (1985): Rural Development in India, Sage, Publications New Delhi.
9	Satya Sundaram, I. (1997): Rural Development, Himalaya Publishing House, Delhi.
10	Mehta, Shiv R. (1984): Rural Development Polices and Programmes, Sage Publications, New Delhi.
11	Tyagi, B. P. (1998): Agricultural Economics and Rural Development, Jai Prakash Math and Co., Meerut.

Economics of Human Development

Program Name	**BA in Economics**	Semester	**Third Semester**
Course Title	**Economics of Human Development**		
Course Code:	**OE-3.3**	No. of Credits	**3**
Contact hours	**42 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1. Differentiate between Human Resource Development (HRD), Human Development (HD) and HRM

CO2. Understand the concepts of Human security, describe dimensions of human development, and appreciate various practices and policies of human development, HDI and India.

Contents	**42 Hrs**
Unit–1: Introduction to Human Development	**12 Hrs**

Chapter 1: Human Growth and Human Development - Basic Needs Approach - Quality of Life Approach - Capability Approach

Chapter 2: Human Resource Development (HRD), Human Resource Management (HRM).

Chapter 3: Human Development: meaning and definition, importance, and objectives.

Unit -2: Human Security, SDGs and Approaches to Human Development.	**12Hrs**

Chapter 4: Human Security: Economic security - Food security - Health security - Environmental security - Personal security - Community security - Political security.

Chapter 5: Sustainable Development Goals (SDGs): Understanding the SDGs - Linkages between human development and the SDGs.

Chapter 6: Indian Perspectives and Experience with Human Development: Approach to human development in national plans

Unit -3: Dimensions and Measurement of Human Development	**18 Hrs**

Chapter 7: Dimensions of Human Development: Empowerment - meaning and usage, Cooperation - definition and brief introduction, Equity - concept and usage, Sustainability – meaning and importance, Participation - concept, different forms of participation, Human development & Productivity - factors determining productivity.

Chapter 8: Measuring Human Development: Need for indices - limitations of per capita GDP as an indicator. Earlier indices (meaning): - Physical Quality of Life Index (PQLI), - Disability Adjusted Life Years (DALYs), - Social Capability Index. Human Development Index - HDI as compared to per capita GDP - Method of computing HDI - Critique of HDI. Other indices (meaning): Human Poverty Index (HPI)- Gender-related Development Index (GDI) - Gender Empowerment Measure (GEM).

Chapter 9: Selected Issues in Human Development: Impact of Globalisation on Human Development - Trade and Human Development. - Technology and Human Development

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	**Marks**	
	C1	**C2**
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	**40 Marks**	
Formative Assessment as per NEP guidelines are compulsory		

References	
1	Chelliah, Raja J. and R. Sudarshan (eds.), 1999, Income Poverty and Beyond: Human Development in India, UNDP, Social Science Press, New Delhi
2	Dev, S. Mahendra, Piush Antony, V. Gayathri, and R.P. Mamgain, 2001, Social and Economic Security in India, Institute for Human Development, New Delhi
3	Government of India, National Human Development Report 2002, Planning Commission, New Delhi
4	Jaya Gopakl, R: Human Resource Development: Conceptual analysis and Strategies, Sterling Publishing Pvt. Ltd., New Delhi
5	Naresh Gupta (2019), Human Development in India Emerald Publishers.
6	Nadler, Leonard (2004). Corporate Human Resource Development, Van Nostrand Reinhold, ASTD, New York

7	Padmanabhan Nair(2007) Human Development Index: An Introduction (Economy Series), ICFAI UNIVERSITY PRESS
8	Papalia, D.E. , Olds, S.W. and Feldman, R.D. (2006). Human development.9th Ed. New Delhi: Tata McGraw- Hill.
9	Rao, T.V and Pareek, Udai (2005) Designing and Managing Human Resource Systems, Oxford IBH Pub. Pvt.Ltd., New Delhi.
10	Rao, T.V: Readings in HRD, Oxford IBH Pub. Pvt. Ltd., New Delhi,
11	Viramani, B.R and Seth, Parmila: Evaluating Management Development, Vision Books, New Delhi.
12	Rao, T.V. (et.al)(2003) HRD in the New Economic Environment, Tata McGraw-Hill Pub.Pvt, Ltd., New Delhi ,.
13	Rao, T.V: Human Resource Development, Sage Publications, New Delhi.
14	Viramani, B.R and Rao, Kala: Economic Restructuring, Technology Transfer and Human Resource Development, Response Books, New Delhi
15	United Nations Development Programme (2005); 'Course Curriculum on Human Development-An Outline', New Delhi

Websites:	
1	https://www.undp.org/sustainable-development-goals?c_src=CENTRAL&c_src2=GSR
2	https://hdr.undp.org/en/2020-report
3	https://www.un.org/millenniumgoals/
4	https://www.undp.org/india/publications/national-human-development-report-india
5	https://www.sdgfund.org/mdgs-sdgs

Journals	
1	Indian Journal of Training and Development
2	HRD Newsletter (NHRD Network)
3	American Journal of Training and Development
4	Personnel Today

Macroeconomics

Program Name	**BA in Economics**		Semester	**Fourth Semester**
Course Title	**Macroeconomics**			
Course Code:	**DSC-4.1**		No. of Credits	**3**
Contact hours	**42 Hours**		Duration of SEA/Exam	**2 Hours**
Formative Assessment Marks	**40**		Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1. Understand the Theories of National Income Accounting

CO2. Explain the process of Consumption and Investment Functions

CO3. Evaluate the Concept of Multiplier and Inflation

Content of Theory	**42 Hrs**
Unit–1: Theory of National Income Determination	**14 Hrs**
Chapter:1 Classical Framework: 1. Typical Features of classical theory of employment; Assumptions 2. Basis of Classical theory: ➢ Say's Law ➢ Pigou's wage price flexibility ➢ Fisher's Quantity theory of money ➢ Knut Wicksell's loanable funds theory ➢ Classical dichotomy and neutrality of money 3. Criticism of classical theory	7
Chapter-2: **The Keynesian Framework** 1. Introductory: connecting growth of national income to development; why incomes of all fall or rise? Are income, output, and employment related? 2. Some Basic concepts: The idea of equilibrium and identity; ex- ante and ex-post concepts. 3. Aggregate Demand and its components a. Consumption function: Algebraic and Graphical explanation; Marginal and Average propensity to consume b. Investment function; savings and investment relationship.	7

4. Aggregate Supply: Meaning and graphical explanation; Effective demand 5. Determination of national income in Keynes' two sector economy with Aggregate Demand and Aggregate Supply with fixed prices: Analytical /Graphical and algebraic explanation; numerical problems 6. Determination of national income in Keynes' two sector economy with investment and savings with fixed prices: Analytical / Graphical and algebraic explanation; numerical problems	
Unit -2: Aggregate Consumption and Investment	**15Hrs**
Chapter-3: Theories of Determinants of Consumption: 1. Keynesian Psychological Law of consumption; determinants 2. Permanent Income hypothesis of Milton Friedman	5
Chapter-4: Investment: 1. Types of investment 2. Determinants of investment: a. rate of interest b. marginal efficiency of capital: meaning and determinants;	5
Chapter-5: Concepts of Multiplier and Accelerator 1. Investment Multiplier: Meaning and assumptions. 2. multiplier; leakages;	5
Unit -3: Monetary Economics	**13 Hrs**
Chapter-6: Money Supply: 1. Concept of Money Supply; recent measures of money supply as suggested by RBI 2. Determinants of money supply: a. high powered money b. money multiplier 3. The reserve ratio and deposit multiplier	5

Chapter-7: Money demand: 1. Cash transactions approach (only meaning) and 2. Cambridge approach (Only Marshall's equation) 3. The liquidity preference approach of Keynes	4
Chapter-8: Inflation and Unemployment: 1. Phillips Curve 2. Wage cut theory and employment	4

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	**Marks**	
	C1	**C2**
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	**40 Marks**	
Formative Assessment as per NEP guidelines are compulsory		

References	
1	Ackley, G. (1976), Macroeconomics: Theory and Policy, Macmillan Publishing Company, New York.
2	Ahuja H (2016), Macro Economics- theory and policy, S Chand and Co
3	Dwivedi DN (2016) Macro Economics: Theory and Policy, Tata McGraw-Hill
4	Heijidra, B.J. and F.V. Ploeg (2001), Foundations of Modern macroeconomics, Oxford University Press, Oxford.
5	Keynes, J.M. (1936), The General theory of Employment, Interest and Money, Machmillan, London.
6	Lucas, R. (1981), Studies in Business Cycle Theory, MIT Press, Cambridge, Massachusetts
7	Somashekar Ne. Thi., Principles of Macroeconomics, Scientific International Pvt. Ltd., Publications New Delhi
8	Somashekar Ne. Thi., ಸಮಗ್ರ ಅರ್ಥಶಾಸ್ತ್ರ, Siddalingeshwara prakashana, Kalburgi.
9	H. R. Krishnaiah Gowda ಸಮಗ್ರ ಅರ್ಥಶಾಸ್ತ್ರ, Mysore book house prakashna, Mysore.

Fourth Semester

Statistics for Economics

Program Name	**BA in Economics**	Semester	**Fourth Semester**
Course Title	**Statistics for Economics**		
Course Code:	**DSC-4.2**	No. of Credits	**3**
Contact hours	**42 Hours**	Duration of SEA/Exam	**2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1. Understand the nature of Data and their presentation

CO2. Calculate Descriptive statistics like measures of central tendency and dispersion

CO3. Apply statistical techniques like correlation and regression in Economic anlysis

Content of Theory	**42 Hrs**
Unit–1: Preliminaries	**12 Hrs**
Chapter:1 Introduction to Statistics: Meaning and Importance of Statistics, Functions of Statistics, Types of Statistics: Descriptive Statistics and Inferential Statistics-Variables; Qualitative Variable and Quantitative Variable	4
Chapter-2: Datatypes, Sources and Collection of Data: Qualitative and Quantitative Data - Cross Section Data, Time Series Data and Panel Data - Primary and Secondary sources of Data – Methods of Collecting Primary Data	4
Chapter-3: Tabulation and Presentation of Data: Classification and tabulation of data - Frequency distributions – Continuous and Discrete frequency distribution. Graphical presentation- Histogram- frequency polygon - Ogive Curves -Bar Diagram, Pie Chart	4
Unit -2: Measures of Central Tendency and Dispersion	**14 Hrs**
Chapter-4: Arithmetic Average: Definition of Central Tendency, Types of Central Tendency: Arithmetic Mean: Meaning and Properties of Arithmetic Mean – Computation of Arithmetic Mean	5
Chapter-5: Positional Averages-Median and Mode: Definition and importance of Median- Calculation of Median- Definition and importance of Mode - Calculation of Mode.	4

Chapter-6: Dispersion: Meaning of Dispersion- Measures of Dispersion- Range- Quartile deviation- mean deviation - Standard deviation - Coefficient of Variation and Their Computation	5
Unit -3: Correlation, Regression and Time Series Analysis	**16 Hrs**
Chapter-7: Correlation: Meaning of Correlation - Types of correlation - Methods of measuring Correlation- Karl Pearson's correlation coefficients	5
Chapter-8: Regression: Meaning and Importance of Regression - Regression Equation - Estimation of regression equation - Applications of regression equation in Economics	6
Chapter-9: Time Series Analysis: Definition of Time Series – Components of Time Series – Estimation and Forecasting of Trend	5

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	**Marks**	
	C1	**C2**
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	**40 Marks**	
Formative Assessment as per NEP guidelines are compulsory		

References	
1	Gupta S P. (2012) Statistical Methods, S. Chand and Company, New Delhi.
2	S. C. Gupta, (New edition) Fundamentals of Statistics, Himalaya publishing house, Mumbai.
3	S. N. Yogish, Statistical methods for Economists- Mangaldeep publications, Jaipur.
4	Anderson, Sweeney & Williams, (2002) Statistics for Business & Economics, Thomson South-Western, Bangalore.
5	Daniel and Terrel: Business Statistics for Management and Economics; oaghton Mifflin Co., Boston, Toronts, 7th Edition, 1995, PP 1 to 972 + 6 Appendices
6	Medhi, J., Statistical Methods: An Introductory Text, Wiley, 1992
7	Morris H. Degroot and Mark J. Schervish, "Probability and Statistics", 4th edition, 2012.
8	Teresa Bradley, Essential Statistics for Economics, Business and Management, John Willey Publisher, 2007

Karnataka Economy

Program Name	**BA in Economics**	Semester	**Fourth Semester**
Course Title	**Karnataka Economy**		
Course Code:	**OE 4.1**	No. of Credits	**3**
Contact hours	**42 Hours**	Duration of SEA/Exam	**2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1. Understand the nature of economic growth and problems of Karnataka state.

CO2. Explain the process of structural growth in Karnataka Economy

CO3. Evaluate the policies and programmes undertaken by the Govt. of Karnataka for bringing about socio-economic development

Contents	**42 Hrs**
Unit–1: Karnataka Economy – An overview	**12 Hrs**
Chapter:1 Characteristics of Karnataka Economy o Features of Karnataka Economy o Trends and sectoral distribution of State Domestic Product and Per Capita Income o Measures to redress regional imbalances – Dr. Nanjundappa Committee Report, Article 371J	5
Chapter-2: Human Resources o Human Resources: importance, Size and Health indicators o Human Development Index o Poverty and Unemployment– Eradication Programmes	4
Chapter-3: Natural Resources Management o Natural Resources: Importance and volume of different natural resources o Karnataka Environmental Policy	3
Practicum: conduct field visit to Forest/Reservoir/Mining and prepare the report	
Unit -2: Agriculture, Rural development, and Industries in Karnataka	**18 Hrs**
Chapter-4: Agriculture o Problems in Agriculture o Land Reforms	7

o Cropping Pattern o Irrigation: importance, important irrigation projects and watershed development projects. o Farmers Suicide – Causes and Solutions	
Chapter-5: Rural Development o Public Distribution System o Rural Development Programmes (brief) o Government Schemes for Rural Women	4
Chapter-6: Industries in Karnataka o Major Industries in Karnataka - Problems and Prospects o MSMEs - Problems and Measures o IT Industries in Karnataka o Industrial Finance in Karnataka o Industrial Policy of Karnataka	7
Practicum: visit to industrial units in local area and prepare the report/Trace-out the impact of Prof. D. M. Nanjundappa Committee report	
Unit -3: Infrastructure and Finance in Karnataka	**12 Hrs**
Chapter-7: Economic Infrastructure o Transportation: Road, Rail, Water and Air Transport o Information and Communication Technology Facilities	3
Chapter-8: Social Infrastructure o Drinking Water o Housing and Sanitation o Health and Education o Rural Electrification	4
Chapter-9: State Finance o Sources of Revenue: Direct and Indirect Taxes o Impact of GST on Karnataka economy o State Expenditure o State Finance Commission o Current State Budget (Brief)	5
Practicum: Discussion on State budget	

Formative Assessment for C1 & C2		
Assessment Occasion/ type	**Marks**	
	C1	**C2**
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	**40 Marks**	
Formative Assessment as per NEP guidelines are compulsory		

Note: Strictly follow the Practicum

References	
1	Government of Karnataka, Economic Survey [Various Issues]
2	Planning Department, Annual Publication, Government of Karnataka.
3	Karnataka at Glance, Annual Publication Government of Karnataka.
4	Madaiah M & Ramapriya. Karnataka Economy Growth: Issues and Development, Himalaya Pub., House, NewDelhi.
5	Adul Aziz and K.G. Vasanti. (Eds) Karnataka Economy.
6	Government District Development Reports
7	Hanumantha Rao. Regional Disparities and Development in Karnataka.
8	Krishnaiah Gowda H.R. Karnataka Economy, Spandana Publications, Bangalore
9	Somashekar Ne. Thi., ಕರ್ನಾಟಕ ಆರ್ಥಿಕತೆ, Siddalingeshwara publications, Kalburgi.
10	Nanjundappa D.M. Some Aspects of Karnataka Economy.
11	Puttaswamiah K. Karnataka Economy, Two Volume

Entrepreneurial Economics

Program Name	**BA in Economics**	Semester	**Fourth Semester**
Course Title	**Entrepreneurial Economics**		
Course Code:	**OE 4.2**	No. of Credits	**3**
Contact hours	**42 Hours**	Duration of SEA/Exam	**2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1. Start own business as Entrepreneur

CO2. Enabling the students to find career opportunities in business.

CO3. To enable the students to gain knowledge and skills needed to run a business successfully.

Contents	**42 Hrs**
Unit–1: Entrepreneur and Entrepreneurship	**12 Hrs**

Chapter 1: Entrepreneur and Entrepreneurship – Meaning, Definitions, Evolution, types- Characteristics, qualities, functions of entrepreneur- Distinction between entrepreneur and manger, Distinction between entrepreneur and intrapreneur,

Chapter 2: Role and importance of Entrepreneurship in economic development: Role and importance-Factors influencing entrepreneurship'- Psychological, social, Economic and Environmental.

Chapter 3: New generations of entrepreneurship viz. social, Health, Tourism and Women entrepreneurship; Barriers to entrepreneurship.

Unit -2: Launching Entrepreneurial Ventures	**18 Hrs**

Chapter 4: Generation of ideas: Methods and process - sources of ideas - screening process- Assessing Opportunities-Challenges, pitfalls and critical factors of new venture;

Chapter 5: Business Plan- New Ventures: Steps involved in setting up a Business – identifying, selectinga Good Business opportunity, Market Survey and Research, Techno-Economic Feasibility Assessment.

Chapter 6: Role of Innovation & Creativity: Innovation- Meaning and importance of innovation; Types of innovation; Sources of innovation; Conditions for effective innovation at Organization level;

Chapter 7: Creativity: Concept and process of creativity; role and importance of creativity and mental blocks to creativity; branding, trademarks, patents, copyrights, and registered design protection-Methods of protecting innovation and creativity.

Unit -3: Business and Entrepreneurial development	12 Hrs

Chapter 8: Entrepreneur Assistance: Assistance to an entrepreneur-Industrial Park (Meaning, features, & examples)-Special Economic Zone (Meaning, features & examples)-Financial assistance by different agencies-License, Environmental Clearance, e-tender process, Excise exemptions and concession, Exemption from income tax -Quality Standards with special reference to ISO.

Chapter 9: Business and Entrepreneurial development - Determining and acquiring required resources (Financial, Physical and Human): Search for entrepreneurial capital- Debt vs. Equity; Venture Capital Market; Angel Financing and Alternative sources of finance for Entrepreneurs. Entrepreneurship development programme (EDP) in India– Objectives, Phases, and inputs of EDP; - Government initiatives for entrepreneurship – Make in India, Start-up India, MUDRA etc.

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	**Marks**	
	C1	**C2**
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	**40 Marks**	
Formative Assessment as per NEP guidelines are compulsory		

References	
1	Donald F Kuratko, "Entrepreneurship – Theory, Process and Practice", 9 th Edition, Cengage Learning, 2014.
2	Khanka. S.S., "Entrepreneurial Development" S.Chand & Co. Ltd., Ram Nagar, New Delhi, 2013.
3	Kuratko and Rao, Entrepreneurship: A South Asian Perspective; Ferrell, Fraedrich, Farrell, Business Ethics, Cengage Learning
4	Entrepreneurship, R. Saibaba, Kalyani Publishers, New Delhi.
5	Entrepreneurship Development and Business Ethics, Sanjeet Sharma – V.K. Global Pvt. Ltd., New Delhi
6	SS Khanka, Entrepreneurial Development, S. Chand & Co, Delhi.

7	Desai, Vasant. Dynamics of Entrepreneurial Development and Management. Mumbai, Himalaya Publishing House
8	Plsek, Paul E. Creativity, Innovation and Quality (Eastern Economic Edition), New Delhi:Prentice-Hall of India. ISBN-81-203-1690-8.
9	Singh, Nagendra P. Emerging Trends in Entrepreneurship Development. New Delhi: ASEED.
10	Entrepreneurship Development and Business Ethics - M K Nabi, K C Rout, Vrinda Publications (P) Ltd
11	Robert Hisrich and Michael Peters, Entrepreneurship, Tata Mc Graw– Hill Vasant Desai, Entrepreneurship
12	Marc J Dollinger, Entrepreneurship – Strategies and Resources, Pearson Education
13	Venkateshwara Rao and Udai Pareek,(Eds)Developing Entrepreneurship-A Handbook
14	Ravi J. Mathai, Rural Entrepreneurship A Framework in Development Entrepreneurship –Ahandbook

Economics and Law

Program Name	**BA in Economics**	Semester	**Fourth Semester**
Course Title	**Economics and Law**		
Course Code:	**OE 4.3**	No. of Credits	**3**
Contact hours	**42 Hours**	Duration of SEA/Exam	**2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1. Comprehend the basic economic issues affecting the economy along with the related legal provisions

CO2. Acquire knowledge on the basic provisions of law relating to consumer activities, business organizations, environment

CO3. To appreciate the understanding the law framework in order to frame the economics model closer to reality.

CO4. To enable the students to understand the consequences of legal rules, primarily as an exercise in applied microeconomics, macroeconomics, industrial and international economics.

Contents	**42 Hrs**
Unit–1: Economic analysis of law	**14 Hrs**
Chapter 1: Introduction to legal reasoning • Efficiency. • Markets and efficiency. • Market failure. • Coase theorem and related ideas,	5
Chapter 2: welfare economics • Compensation principles. • Social welfare function. • Maximization problem;	4

Chapter 3: Economic Reasoning • Nature of economic reasoning. • Economic approach to law • History • Criticism.	5
Practicum: 1. Group Discussions on Economic reasoning 2. Assignment on Coase theorem and related issues	
Unit -2: An Introduction to Law and Legal Institutions	**12 Hrs**
Chapter 4: Law • Definition • Territorial Nature of Law • Kinds of Law • General Law and Special Law • Kinds of Special Law	4
Chapter 5: Civil law and the and the Common Law Traditions • The institutions of the federal and State Court systems; • The nature of legal dispute, • How legal rules evolve.	4
Practicum: 1. Group Discussions on Civil law and the and the Common Law Traditions 2. Assignment on the different kinds of Law	
Unit -3: Economic Laws	**16 Hrs**
Chapter 6: Law Relating to Consumer Activities • Bargaining theory. • Economic theory of contract. • Defining tort law, • Economics of tort liability. • Definition of Consumer • Consumer protection; The Consumer Protection Act, 2019 • Consumer courts.	5

Chapter 7: Law of Business Organizations • Structure of firm — Kinds, Corporations, • Capital, Shares, Debentures, Insiders' trading, • RBI, IRDA, MRTP, Role of SEBI,	5
Chapter 8: Macroeconomics and Law • Inequality; Contract theory of Distributive justice • Economic and social costs of poverty • Wealth distribution by Liability Rules • Taxation and efficiency • National and global environmental problems and international environmental agreements — their legal and economic implications	6
Practicum 1. Hold the moot court in the classroom and let there be discussion consisting of at least two or more different views on National and Global environment problems and acts 2. Discuss the case studies on Economic and social costs of poverty and consumer court judgements protecting the consumers	

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	**Marks**	
	C1	**C2**
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	**40 Marks**	
Formative Assessment as per NEP guidelines are compulsory		

Note: Strictly follow the Practicum

References	
1	Bouckaert, B. and G. De Geest (Ed.) (1999), Encyclopaedia of Law and Economics, (Volume I to V), Edward Elgar Publishing Ltd., U.K.
2	Cooter, R.D. and T.S. Ulen, (2000), Law and Economics, (3rd Edition), Addison Wesley, New York.
3	Dan-Schmidt, K.G. and T.S. Ulen (Ed.) (2000), Law and Economic Anthology, Addison Wesley, New York.
4	Newman, P. (Ed.) (1998), The New Palgrave Dictionary of Economics and Law, Stockton Press, New York.
5	Oliver, J.M. (1979), Law and Economics, George Allen and Unwin, London.
6	Posner, R.A. (1998), Economic Analysis of Law, (5th Edition), Little Brown, Boston.
7	Posner, R.A. and F. Parisi (Eds.) (1997), Law and Economics, Edward Elgar Publishing Ltd., U.K.
8	Massey, I.P. (1995), Administrative Law, Eastern Book Company, Lucknow.
9	Indian Law Institute, Annual Survey of Indian Law, Indian Law Institute, New Delhi.

Economics of GST

Program Name	**BA in Economics**	Semester	**Fourth Semester**
Course Title	**Economics of GST**		
Course Code:	**OE 4.4**	No. of Credits	**3**
Contact hours	**42 Hours**	Duration of SEA/Exam	**2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1. Acquire knowledge on indirect taxes with special reference to GST

CO2. Acquire the theoretical and application knowledge of GST and its Evolution in India

CO3. To enable the students to understand the GST Law, ITC, Valuation of supply and returns

CO4. Simple calculation of GST and Input Tax Credit, Valuation of Supply (Numerical on valuation and calculation of tax)

Contents	**42 Hrs**
Unit–1: Introduction to Economics of GST	**14 Hrs**
Chapter 1: Indirect taxes before GST • Indirect Taxes-Meaning, Types with examples • Constitutional framework of Indirect Taxes before GST (Taxation Powers of Union & State Government) • Concept of VAT: Meaning, Variants and Methods;	5
Chapter 2: Reforms in Indirect Taxes • Major Defects in the structure of Indirect Taxes prior to GST; Need for Tax reforms • Kelkar committee on Tax Reforms	4
Chapter 3: Introduction to GST • Rationale for GST; • Constitution [101st Amendment] Act, 2016; • GST- Meaning, Overview of GST • Taxes subsumed under GST • Territorial Jurisdiction of GST • Multiple rates of GST • Recent reforms in GST	5

Practicum: 1. Group Discussions on Indirect Taxes defects prior to GST 2. Assignment on Types of Indirect Taxes prior to GST and After introduction of GST	
Unit – 2 Fundamentals of GST	**12 Hrs**
Chapter 4: GST Structure in India, • GST: Advantages and Disadvantages • One Nation-One Tax, • Structure of GST; • Features of Single and Dual GST Model	4
Chapter 5: Dual GST Mode and GST Council • Dual GST Mode in India: l SGST, CGST, UTGST & IGST); • Goods and Services Tax Network [GSTN], • GST Council; Creation, Members, Decisions, Compensation to states. • GST Network, • Registration,	4
Practicum: 1. Group Discussions on advantages and disadvantages of GST 2. Hold the moot of GST Council in the class room and decide the different slabs of GST	4
Unit -3: Taxes and Duties	**16 Hrs**
Chapter 6: Transactions and taxes covered and not covered • Transactions and taxes covered under GST • Taxes and duties outside the purview of GST • Tax structure Computation • Administration of Tax on items containing alcohol, petroleum products, tobacco products • Taxation on services	4

Chapter 7: Levy and Collection of Tax • Taxable event- "Supply" of Goods and Services • Place of Supply: Within state, Interstate Levy and Collection • Import and Export; Time of supply • Valuation for GST- Valuation rules, • Taxability of reimbursement of expenses; • Exemption from GST: Small supplies and Composition Scheme Classification of Goods and Services: Composite and Mixed Supplies.	6
Chapter 8: Input Tax Credit • Eligible and Ineligible Input Tax Credit • Apportionments of Credit and Blocked Credits • Tax Credit in respect of Capital Goods • Recovery of Excess Tax Credit • Availability of Tax Credit in special circumstances • Transfer of Input Credit (Input Service Distribution) • Payment of Taxes; Refund; Doctrine of unjust enrichment	6

Practicum

1. Simple illustrations on calculation of GST and Input Tax Credit,
2. Valuation of Supply (Numerical on valuation and calculation of tax)
3. Simple calculation Adjustment of Input tax credit against output CGST, SGST, IGST.

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	**Marks**	
	C1	**C2**
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	**40 Marks**	
Formative Assessment as per NEP guidelines are compulsory		

Note: Strictly follow the Practicum

References	
1	The Central Goods and Services Tax, 2017
2	The Integrated Goods and Services Tax, 2017
3	The Union Territory Goods and Services Tax, 2017
4	The Goods and Services Tax (Compensation to States), 2017
5	The Constitution (One hundred and First Amendment) Act, 2016
6	Gupta, S.S. , *GST- How to meet your obligations (April 2017),* Taxmann Publications
7	Datey,V.S. (2019) . *Indirect Taxation*. New Delhi *Vastu and Sevakar Vidhan* by Government of India
8	Mehrotra, H.C. & Goyal, S.P.(2019), Indirect Taxes, Agra: Bhawan Publications.

CBCS Question Paper Pattern for UG Semester - DSC, DSEC OEC

Paper Code:		**Paper Title:**			
Duration of Exam	**2 Hours**			Max Marks	**60 Marks**
Instruction:	**Answer all the sections**				

Section-A

1. Answer **Ten** the following sub-questions, each sub-question carries **ONE** mark	(10X1=10)
A. **B.** **C.** **D.** . . **L** ***Note for Section-A:*** **Three sub-questions from each unit and remaining one sub-question (K & L) from unit I to III.**	

Section-B

Answer any **FOUR** of the following questions, each question carries **FIVE** marks	(4X5=20)
2. **3.** **4.** **5.** **6.** **7.** ***Note for Section-B:*** **Minimum Two question from each unit (Q No 2 to 6)**	

Section-C

Answer any **THREE** of the following questions, each question carries **TEN** marks	(3X10=30)
8. **9.** **10.** **11.** **12.** ***Note for Section-C:*** **Minimum Two question from each unit (Q No 8 to 12) Sub-questions such as 'a' and 'b' may be givenfor a question in section-C only.**	

RANI CHANNAMMA UNIVERSITY, BELAGAVI

DEPARTMENT OF STUDIES IN ECONOMICS

PROGRAM /COURSE STRUCTURE AND SYLLABUS

As per the Choice Based Credit System (CBCS) designed inaccordance with Learning Outcomes-Based Curriculum Framework (LOCF) of National Education Policy (NEP) 2020

For

B.A. Economics Degree (Honours)
V & VI Semester

w.e.f.

Academic Year 2023-24 and onwards

Program Structure for Four Year under Graduate Program and Master Program in

Economics (B.A Basic/B.A (Hons.)

Semester	Paper Code	Title of the Paper	Credits
V Semester	DSC-9	Public Economics	4
	DSC-10	Development Economics	4
	DSC-11	Indian Banking & Finance	4
		Total Credits	**12**
VI Semester	DSC-12	International Economics	4
	DSC-13	Indian Public Economics	4
	DSC-14	Environmental Economics	4
		Total Credits	**12**

Pedagogy

Formative Assessment	
Assessment Occasion/type	Weightage in Marks
Internal Test	50%
Assignment	20%
Presentation/ Project	30%
Total	100
Formative Assessment as per NEP guidelines are compulsory	

Note: Strictly follow the Practicum

Pedagogy; Evaluation process IA MARKS

FORMATIVE ASSESSMENT			
	C1	C2	Total
Assessment Occasion/type			
Internal Test	10	10	20
Assignment/seminar	5	-	05
Quiz/GD	5	-	05
Presentation/Project etc	-	10	10
Total	20	20	40
Semester End Exam Theory			60

5th Semester

Public Economics

Program Name	**BA in Economics**	Semester	**Fifth Semester**
Course Title	**Public Economics**		
Course Code:	**ECO C9**	No. of Credits	**4**
Contact hours	**60 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1. Understand introductory Public Finance concepts.

CO2. Study the causes of market failure and corrective actions

CO3. Understand the impact, incidence and shifting of tax

CO4. Study the Economic Effects of tax on production, distribution and other effects

CO5. Enable the students to know the Principles and Effects of Public Expenditure

CO6. Understand the Economic and functional classification of the budget; Balanced and Unbalanced budget

CO7. Understand the Burden of Public debt and know the Classical/ Ricardian views, Keynesian and post-Keynesian views

CO8. To acquaint with the advantages and disadvantages of Deficit Financing,

MODULES	**DESCRIPTION**	**60 Hours**
Module I	**Introduction to Public Economics**	**15**
	Public Economics: Meaning, definitions, Scope and Significance, Public Finance and Private Finance: Meaning, and Distinction; Public good and private good: Meaning, Characteristics, and Distinction, Principle of Maximum Social Advantage, Market Failures: Meaning, causes-role of externalities; Market failure and role of government; Corrective actions.	
Practicum	Group Discussions on Public Finance and private finance; public good and private good Assignment on Market failure and government intervention	
Module II	**Public Revenue and Public Expenditure**	**18**
	Meaning and sources of revenue; Taxation –Cannons of taxation, Characteristics of a sound tax system, Impact, Incidence- Division of Tax burden, Shifting of tax, Economic Effects of tax on production, distribution and other effects, Progressive and Regressive, Proportional Tax, Direct and Indirect Taxes –Merits and Demerits, Taxable Capacity: Meaning and determinants. Public Expenditure; Meaning, classification, principles, Types & Cannons, Reasons for the growth of public expenditure, Wagner's	

	law of increasing state activities, Peacock-Wiseman hypotheses, Effects of public expenditure: Production, Distribution &Other effects	
Practicum	Mini-project/study to ascertain the impact of GST on retailers/wholesalers in your vicinity A case study on the taxable capacity of the different sections of society in the vicinity Assignment on Effects of public expenditure: Production, Distribution & Other Effects	
Module III	**Public Debt**	**12**
	Public Debt: Meaning, Purpose, Types & Effects**;** Sources of Public Borrowing; Burden of Public Debt -Classical/ Ricardian views, Keynesian and post-Keynesian views; Intergenerational equity of public debt**;** Causes of the Rise in Public Debt**;** Methods of debt redemption; Debt management.	
Practicum	Studying the burden of public debt through a project/ case study Assignment on Debt Management	
Module IV	**Public Budget, Fiscal Policy and Fiscal Deficit**	**15**
	Budget: Meaning, process & Types of budget, Economic and functional classification of the budget; Balanced and unbalanced budget, Types of Budget Deficits; Fiscal Policy: Meaning, objectives & Tools; Fiscal deficit: Meaning, Computation, Deficit Financing: Meaning, Advantages and Disadvantages	
Practicum:	Calculation of various types of budget deficit using the budget data Group discussion on the advantages and disadvantages of deficit financing	

References	
1	Lekhi R.K., Joginder Singh (2018) Public Finance, Kalyani publication, New Delhi
2	Tyagi B.P. (2014) Public Finance published by Jaya Prakash Nath and CO, Meerut
3	Hindriks J. and G. Myles (2006): Intermediate Public Economics, MIT Press.
4	Bhatia H L (2018): Public Finance. Vikas Publishing House.
5	Musgrave, R.A. (1989), The Theory of Public Finance, McGraw Hill
6	Musgrave R.A. and P.B. Musgrave (1989), Public Finance in Theory and Practice, McGraw Hill,

Development Economics

Program Name	**BA in Economics**	Semester	**Fifth Semester**
Course Title	**Development Economics**		
Course Code:	**ECO C10**	No. of Credits	**4**
Contact hours	**60 Hours**	Duration of SEA/Exam	**2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

- CO1. Understand the basic concepts and measurements of Development.
- CO2. Learn some classical and partial theories of Development economics and identify the difference.
- CO3. Identify the difference between Developed and Developing Countries.
- CO4. Analyse and tackle the Development issues effectively.

MODULES	DESCRIPTION	60 Hrs
Module 1	**Introduction to Economic Development**	**14**
	Concept - Definitions - Distinction between Economic Growth and Development - Indicators of Growth and Development, Measures of Economic Development: Gross National Product (GNP) - Physical Quality of Life Index (PQLI), HumanDevelopment Index (HDI), Happiness Index, Inequality and Poverty: Meaning, causes, indicators – Gini Coefficient Index, Human Poverty Index (HPI).	
Practicum:	Assignment on various indicators of growth and development Group discussions about the characteristic features of different countries and their development levels	
Module 2	**General Theories of Economic Growth and Development**	**16**
	Adam Smith's Theory, David Ricardo's Theory, T.R. Malthus' Theory, Karl Marx's Theory, Schumpeter's Theory and Rostow's Growth Theory - Harrod-Domar Model.	
Practicum:	Assignment on different theories and their relevance to developing Countries, Debate on present stage of India's growth and estimated stage it may reach by 2047	
Module 3	**Partial Theories of Economic Development**	**16**
	Lewis Labour Surplus Model - Rodan's Big Push Theory - Lieberstein's Critical Minimum Effort Approach - Balanced Vs. Unbalanced Growth, Factors in the Development Process Capital Accumulation - Capital-Output Ratio - Technology and Economic Development.	

Practicum:	Group Discussion on Balanced and unbalanced growth strategies in Developed and developing countries Assignment on the Factors in the Development Process Capital Accumulation	
Module 4	**Sustainable Development**	**14**
	Inclusive Development - Millennium Development Goals - Sustainable Development Goals, Targets and Achievements with reference to India.	
Practicum	Seminar on MDGs and SDGs and the challenges	

References	
1	Higgins Benjamin & W.W. Norton Economic Development New York & Company. Inc.
2	Mishra S.K and Puri V.K, Economic Development and Planning, Himalaya Pub., House, Mumbai.
3	Taneja M.L. and Meier G. M, Economics of Development and Planning, S. Chand and Co, New Delhi.
4	Thirlwall A.P. Growth and Development: With Special Reference to Developing Economies, Palgrave Macmillan, New York.
5	Todoaro. M.P & Orient Longman Economic Development in the Third World, United Kingdom
6	Sustainable Development Reports

Indian Banking and Finance

Program Name	**BA in Economics**	Semester	**Fifth Semester**
Course Title	**Indian Banking and Finance**		
Course Code:	**ECO C11**	No. of Credits	**4**
Contact hours	**60 Hours**	Duration of SEA/Exam	**2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

- CO1. Understand the structure of Indian banking and the role of banks in monetary policy.
- CO2. Analyze the functioning of banks and different types of accounts and other services offered by banks.
- CO3. Evaluate recent developments in the Indian banking sector, including digital banking, payment banks, and non-performing assets.
- CO4. Describe the overview of the Indian financial system, including financial markets, financial instruments, and financial regulation.
- CO5. Analyze the challenges faced by Indian banks and the implications of banking reforms for the Indian economy.
- CO6. Develop critical thinking and analytical skills in evaluating various financial products and services banks and capital markets offer.

MODULES	DESCRIPTION	60 Hours
Module I	**Introduction to banking: India**	**15**
	Indian Banks: Evolution, structure, functions, types and features- Public sector, private sector, foreign, Cooperative, RRB, Small finance banks, payment banks; Role and importance of banks in the Indian economy; Credit creation and financial intermediation; Central Bank and banking regulation; Regulatory and supervisory powers; Monetary policy and banking channel of credit control; Policy rates and banking; repo, reverse repo, MCLR, Bank rate, CRR, SLR, MSF; Issues in banking sector; NPA crisis; impact of global events on Indian banks.	
Practicum	Compare and contrast the different types of banks, highlighting their strengths and weaknesses- Presentation. Conduct a class discussion and compare and contrast the different scenarios on various loans, highlighting the risks involved and the measures taken by banks to manage these risks.	
Module II	**Banking services**	**15**

	Banking services: Bank deposits; Types and features of bank accounts; account opening and importance of KYC; Bank loans; types, features, documents required; eligibility, interest rates, maturity, loan default and consequences; Other services: Locker facility, payment and remittance services and channels; currency exchange; debit cards, credit cards, pre-paid cards; ATMs; internet and mobile banking; Modern banking products: Insurance on deposits and loans, Investment services in capital market-stocks, bonds and mutual funds; advisory services; retirement products.	
Practicum	Group discussion on bank accounts and loan products and making recommendation to different classes Comparison of banking services by visiting bank branches	
Module III	**Modern Banking**	**15**
	Modern banking facilities; Digital banking; Digital Wallets; Digital account opening; Biometrics; contact less payment system; instant payments; personal finance management tools; Use of artificial intelligence and machine learning in banks; Cyber security in banking; Credit scoring; Direct lending; Corporate banking; Investment Banking	
Practicum:	Survey bank customers to understand their usage and satisfaction levels with digital banking services. Analyze the adoption rates of digital banking services across different age groups and demographic segments	
Module IV	**Financial Market**	**15**
	Introduction to Indian financial markets; Equity markets and stock exchanges; Debt markets and bond markets; Currency markets and forex trading; Commodity markets and trading; Derivatives markets; Mutual funds; Insurance products Investing in capital market products- access, channels; risk in capital market investments; Role of SEBI, Fintech and innovation in capital markets;	
Practicum	Debate: Investing in capital market products. Assignment on Indian financial markets	

References	
1	Khan, M. Y. (2019). Indian Financial System (11th ed.). McGraw Hill Education (India) Private Limited.
2	RBI (2022) report on the trend and Progress of Banking in India
3	Pathak, B. V. (2018). Indian financial system. Pearson Education
4	Principles and Practices of Banking (2023), Indian Institute of Banking & Finance (IIBF), MacMillian
5	Shekhar, K. C. & Shekhar, L. (2013). Banking Theory and Practice, 21st Edition
6	Taxman's Digital Banking, Indian Institute of Banking & Finance (IIBF), Bharati Law House
7	Reserve Bank of India. (2017). Basic Financial Literacy Guide.

	https://www.rbi.org.in/Scripts/BS_FlgGuidelines.aspx
8	Securities and Exchange Board of India. (2021). Handbook of Statistics on Indian Securities Market. https://www.sebi.gov.in/reports-and-statistics/publications/dec-2022/handbook-of-statistics-2021_66158.html
9	Financial Education Handbook (2021) National Centre for Financial Education (NCFE) https://www.ncfe.org.in/resources/downloads
10	Investor Education material by National Stock Exchange (https://www.nseindia.com/invest/how-to-invest-in-capital-market)

6th Semester

International Economics

Program Name	**BA in Economics**	Semester	**Sixth Semester**
Course Title	**International Economics**		
Course Code:	**ECO C12**	No. of Credits	**4**
Contact hours	**60 Hours**	Duration of SEA/Exam	**2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

- CO1. Understand the international trade theories and their application in international trade
- CO2. Explain the concept of terms of trade and demonstrate the effect of trade barriers; and display the ability to analyse the stages of economic integration
- CO3. Understand the concept of BoP and assess the BoP position and examine the changes in forex rate
- CO4. Analyse the role of International trade and financial institutions
- CO5. Demonstrate good inter-personal and communication skills through class participation and contributing to critical discussion on trade issues

MODULES	DESCRIPTION	60 Hours
Module I	**International Trade Theories**	**15**
	Meaning and Importance of International trade; Differences between Internal and International Trade; Trade Theories: Mercantilist view; Absolute cost and comparative cost advantage theories; Haberler's Opportunity cost theory; Hecksher-Ohlin theory; Leontief's paradox	
Practicum	Assignment on Ricardo's Comparative cost advantage and Leontief's paradox	
Module II	**Terms of Trade and Commercial Policy**	**17**
	Terms of trade- Concept and Types, Factors determining Terms of Trade; Commercial Policy: Free trade v/s Protection; Tariffs: Types and effects; Quotas; Anti-dumping; Economic Integration: Meaning and stages.	
Practicum	Debate: Free trade v/s Protection Mini project: Trace the evolution of India towards Economic Integration	
Module III	**Balance of Payment and Capital Flow**	**13**
	Balance of Payment: Concept, Components; Disequilibrium in Balance of Payment: Causes and Measures to correct disequilibrium; Foreign Exchange rate: Meaning and types; determination of Foreign exchange rate: Demand for and Supply of Forex; Purchasing Power Parity (PPP) theory; Capital Flow: Meaning and concept of Foreign Investment; Forms of FDI; Advantages and disadvantages of FDI.	
Practicum	Prepare India's Balance of Payment statement using recent Economic Survey Assignment on Forms of FDI	

Module IV	International Finance and Trade Institutions	15
	Bretton Woods Institutions: IMF and IBRD -IDA and IFC: Organization, Objectives, Functions and their role in developing countries; Evolution of WTO: GATT – principles and objectives; WTO: Organization, Objectives, Functions, Agreements and current issues; WTO and developing countries;	
Practicum:	Group Discussion: Effectiveness of IMF and IBRD in developing countries Seminar: Agreements of WTO or current issues of WTO	

References

1	Sodersten. B. (1993): International Economics, MacMillan, 3 Edition, London,
2	Salvatore, D. (2016): International Economies, 12 Edition, Wiley Publication
3	Vaish, M. C. and Sudama Singh (1980): International Economics, 3 Edition, Oxford and IBH Publication, New Delhi.
4	Carbaugh, R. J. (1999): International Economics, International Thompson Publishing, New York
5	Dana, M. S. (2000): International Economics: Study Guide and work Book, 5. Edition, Routledge Publishers, London.
6	Kenen, P. B. (1994). The International Economy, Cambridge University Press, London.
7	Krugman, P.R. and M. Obstfeld (1994): International Economics: Theory and Policy Addison-Wesley Publications.
8	Jackson, JD. (1998) The World Trading System, Cambridge University Press, Mass. Cherunilam, International Economics, TMH, New Delhi.
9	D M Mithani, International Economics, Himalaya, Mumbai.
10	Jhingan M.L.(2016): International Economics, Vrinda Publications Pvt Ltd-Delhi
11	Dwivedi D.N. (2013): International Economics Theory & Policy, Vikas Publishing House Pv.t Ltd.
12	K.C. Rana & K.N. Verma (2017): International Economics; Vishal Publishing Co.
13	Krishnamurthy H.R (2013) : Antararashtreeya Arthashastra ; (Kannada version), Sapna, Bengaluru

Indian Public Finance

Program Name	**BA in Economics**	Semester	**Sixth Semester**
Course Title	**Indian Public Finance**		
Course Code:	**ECO C13**	No. of Credits	**4**
Contact hours	**60 Hours**	Duration of SEA/Exam	**2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

- CO1. Understand the structure of Indian Public Finance
- CO2. Enable the students to know the Source and nature of public revenue and expenditure
- CO3. Understand the Budget and different concept of deficits
- CO4. Know the Public debt and its management
- CO5. Understand the fiscal and monetary policy and their tools and importance
- CO7. To enable the students to know the Indian federal financing system and Financial Commissions.

MODULES	DESCRIPTION	60 Hours
Module I	**Public Revenue**	**18**
	Direct Tax Revenue - Sources of Revenue-Tax and Non-Tax Revenue; Trends and Patterns of Tax Revenue in India; Direct and Indirect Taxes in India; Personal Income Tax Rates and Slabs**;** Corporate Tax- Tax Rate and Slabs; **Indirect Tax Revenue -** Indirect Taxes – Earlier Taxes-VAT and MODVAT; Goods and Services Tax (GST)- Objectives and Classification of GST, Tax Rates of GST; Trends and Patterns of GST; Impact of GST on Indian Economy**;** Tax Reform Commissions.	
Practicum	Collection and analysis of data on Direct tax Collection and analysis of GST from businesses	
Module II	**Public Expenditure**	**15**
	Revenue Expenditure - Classification of Public Expenditure in India**;** Revenue Account Expenditure- Trends and Patterns**;** Capital Account Expenditure-Trends and Patterns**;** Fiscal Responsibility and Budget Management (FRBM) Act**;** Impact of Public Expenditure on Indian Economy**;** Expenditure Reforms Commission (ERC) in India; **Union Budget and Its Analysis -** Meaning and Classification of Budgets; Zero-Based Budget; Composition of Union Budget; Union Budget Analysis (current one); Different Concept of Deficits- Revenue, Fiscal, Primary Deficits	
Practicum	Analysis of Union Budget (Current one) Group Discussion on Budget Deficits	

Module III	Public Debt and Its Management	14
	Public Borrowings and Debt - Meaning and Nature of Public Debit; Sources of Public Borrowings; Classification of Public Debt; Trends and Patterns of Central Government Debt; Main Characteristics of Indian Public Debt; Crowding out of Private Investment; Causes of Public Debt in India; **Burden of Public Debt and Management in India -** Meaning of Burden of Public Debt; Importance of Public Management; Principles of Public Debt Management; Repayment of Public Debt in India; Impact of Public Debt on Indian Economy; Finance Commissions in India	
Practicum	Assignment to write on Indian Public Dent and sources of repayment Group Discussion on Burden of Public Debt	
Module IV	**Fiscal and Monetary Policies and Federal Finance in India**	**13**
	Fiscal and Monetary Policy India - Meaning and Objectives of Fiscal Policy; Importance of Fiscal Policy; Tools of Fiscal Policy; Meaning and Objectives of Monetary Policy; Importance of Monetary Policy; Tools of Monetary Policy**; Indian Federal Finance -** Meaning and Importance- Stages of Growth; Allocation of Resources- Division of Functions and Resources; Principles of Federal Finance; Shortcomings of Federal Financing; Finance Commission and Their Recommendations.	
Practicum	Group Discussion about the Role of Fiscal and Monetary Policies in controlling inflation Assignment to write the State List, Union List and Concurrent list	

References

1	Bhatia H L (2021): Public Finance, S. Chand and Co., New Delhi.
2	Lekhi R.K (2020): *Public Finance*, Kalyani Publishers, New Delhi.
3	Musgrave R.A and Musgrave P.A (2017): *Public Finance in Theory and Practice*, Mcgraw- Hill Kogakusha, Tokyo.
4	Om Prakash (2021): *Public Economics: Theory a practice*, Vishal Publishing Co. Ludhiana.
5	S.K. Singh (2019): *Public Economics: Theory and Practice* S. Chand and Co., New Delhi.
6	Tyagi, B.P (2018)*: Public Finance*, Jai Prakash Nath and Company, Meerut, India.

Environmental Economics

Program Name	**BA in Economics**	Semester	**Sixth Semester**
Course Title	**Environmental Economics**		
Course Code:	**ECO C14**	No. of Credits	**4**
Contact hours	**60 Hours**	Duration of SEA/Exam	**2 Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

- CO1. Understand how economic methods can be applied to environmental issues facing society
- CO2. Examine the linkages between Environmental Degradation and Economic Development
- CO3. Develop an informed view regarding the potential of economics to help societies achieve their environmental goals
- CO4. Demonstrate good inter-personal and communication skills through writing an essay and contributing to critical discussion
- CO5. Analyze environmental problems and to assess environmental policies.

MODULES	DESCRIPTION	60 Hours
Module I	**Environment and Ecology**	**15**
	Meaning, Nature and Scope of Economics of Environment; Linkages between Environment and the Economy; Environmental Kuznets curve; Environmental Stress; Population and Environment; Poverty and Environment; Meaning and elements of ecology; Biotic and Abiotic components; Food, Hydrological and Carbon Cycles; Material Balanced Principle (Entropy law); Meaning and strategies to achieve Sustainable Development; Rio Summit; Green Accounting Introduction to SDGs.	
Practicum:	Making charts relating to SDGs or Assignments on environment-economy linkages at the local level.	
Module II	**Natural Resources Scarcity and Conservation**	**15**
	Meaning and Characteristics of Renewable and Non-renewable resources; Non-Renewable Resources and the problem of depletion and problem of overuse ; Resource Scarcity and Economic Growth (Limits to Growth Model); Energy and Economic Development; Energy resources and their Pricing; Alternative energy sources; Conservation of Natural Resources- 3Rs – Reduce, Reuse and Recycling Measures	
Practicum:	Identifying local resources; Project on resource conservation (esp. water) at the College level; Discussion on Limits to Growth	

Module III	**Environmental Pollution**	**15**
	Environmental regulatory system in India; Pollution Control Boards and their Functions; Provisions of the Environmental Protection Act, 1986; Environmental Movements in India (Chipko); Role of Citizens and NGOs in Environmental Protection.	
Practicum:	visiting the Pollution Control Board office and observing its functions	
Module IV	**Environmental Pollution and Regulation**	**15**
	Environmental regulatory system in India; Pollution Control Boards and their Functions; Provisions of the Environmental Protection Act, 1986; Environmental Movements in India (Chipko); Role of Citizens and NGOs in Environmental Protection.	
Practicum:	Assignments on types of pollution in local areas; Seminars on climate change and its consequences; visiting the Pollution Control Board office and observing its functions	

References	
1	Bhattacharya, R.N (Ed) (2001), *Environmental Economics: An Indian Perspective*, Oxford University Press.
2	Karpagam M. (1993), *Environmental Economics*, Sterling Publishers, New Delhi.
3	Shankar, U, (2001), *Environmental Economics*, Oxford University Press, New Delhi.
4	Singh, Katar and Anil Shisodia (2007): *Environmental Economics: Theory and Applications*, Sage Publications, New Delhi
5	Mahajan V.S (2003): *Environmental Protection – Challenges & Issues*, Deep & Deep Publishers New Delhi
6	Sengupta, R.P. (Ed.) (2001), *Ecology and economics: An Approach to Sustainable Development*, Oxford University Press, New Delhi.
7	Nick Hanley, Jason F, Shogren and Ben White (2005): *Environmental Economics in Theory and Practice*, Macmillan India Ltd.

CHAIRMAN
P.G. Department of Economics
Rani Channamma University
Belagavi - 591156

Question Paper Pattern for UG Semester
DSC, DSEC &OEC

Paper Code:		**Paper Title:**	
Duration of Exam	**2 Hours**	Max Marks	**60 Marks**
Instruction:	**Answer all the sections**		

Section-A

1. Answer **ALL** the following sub-questions, each sub-question carries **ONE** mark	(10X1=10)
A. **B.** **C.** **D.** **.** **J.** ***Note for Section-A:*** **Three sub-questions from each unit and remaining one sub-question (J) from unit I to III.**	

Section-B

Answer any **FOUR** of the following questions, each question carries **FIVE** marks	(4X5=20)
2. **3.** **4.** **5.** **6.** **7.** ***Note for Section-B:*** **Minimum Two question from each unit (Q No 2 to 6)**	

Section-C

Answer any **THREE** of the following questions, each question carries **TEN** marks	(3X10=30)
8. **9.** **10.** **11.** **12.** ***Note for Section-C:*** **Minimum Two question from each unit (Q No 8 to 12) Sub-questions such as 'a' and 'b' may be givenfor a question in section-C only.**	

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS
as per the Choice Based Credit System (CBCS) designed in accordance with
Learning Outcomes-Based Curriculum Framework (LOCF)
of National Education Policy (NEP) 2020
for
Undergraduate Program in HISTORY (BA)

w.e.f.

Academic Year 2021-22 and onwards

PREAMBLE

History, as we all know, is a vital source to knowledge about a nation's soul. Of late it has been argued and established that cant be a nation without a past. Today more than ever before, the challenges of globalization obligate historians and researchers to go beyond the of local, national and even continental frontier of their knowledge however competing and keeping pace with ever expanding horizon of history, one has to be sensitive in understanding the issues of nation history on large canvas. Absorbing polemics and not only create a belief of continuity by exploring nations past which lie in abundance. This certainly will further initiate a dialog between past and present and a new narrative emerges.

The learning out comes based curriculum framework(LOCF) presented here visualize that gradate training needs to attend to the following considerations.

1. This course is designed to break the stereotypes of History learning and create interest amongst students to study History.
2. This programme is organized to provide the greatest flexibility to its student.
3. There are core Disciplinary papers that provide the fundamental knowledge in the discipline of history and in the study of the history of India and the world.
4. The programme in otherwise envisaged to provide a large amount of choice so that students can tailor their education on the basis of their interests.
5. These provide not just knowledge and skills in history and contemporary history but also is a vital skill for other disciplines as well.
6. The programme course is interdisciplinary keeping in mind that specialization in history is the key to accesses cognate skills from other disciplines.

PROGRAM OUTCOMES

By the end of the program the students will be able to:

1. To learn a basic narrative of historical events in a specific region of the world in a specific time frame.
2. To articulate factual and contextual knowledge of specific places and times to make careful comparisons (Across time space and culture)
3. The ability to use bibliographical tools for the advanced study of history.
4. To understand and evaluate different historical ideas various arguments and point of view.
5. To develop an appreciation of themselves and of other through the study of the past in local, regional, national and global context.
6. It instate an appreciation of the uniqueness of visual evidence and cultivate a particular skill of using visual evidence to understand human activity of the recent and distant past.

PROGRAM STRUCTURE

The following is the Program Structure for theHistory (UG) Program of Rani Channamma University:

Sem.	Discipline Core (DSC) (Credits) (L+T+P)	Discipline Elective(DSE)/ Open Elective (OE) (Credits) (L+T+P)	Ability Enhancement Compulsory Courses (AECC), Languages (Credits) (L+T+P)		Skill Enhancement Courses (SEC)			Total Credits
					Skill based (Credits) (L+T+P)	Value based (Credits) (L+T+P)		
I	**DSC:1**Political History of Karnataka (BCE-3 to 10 CE) Part -1 (3) **DSC:2** Cultural Heritage of India (3)	**OE-1** Cultural History of Karnataka (CE-3-CE 10) (3) Part-I Or Introduction to Archeology (3)	L1-1(3), L2-1(3) (4 hrs. each)		SEC-1: Digital Fluency (2) (1+0+2)	Physical Education - Yoga (1) (0+0+2)	Health & Wellness (1) (0+0+2)	25
II	**DSC-3** Political History of Karnataka (CE-11 to CE 1750) (3) **DSC-4** Cultural Heritage of Karnataka (3)	**OE-2** Cultural History of Karnataka (CE11 to CE 1750) (3) OR Manuscriptology (3)	L1-2(3), L2-2(3) (4 hrs. each)	Environmental Studies (2)		Physical Education-Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Exit option with Certificate in …. (… credits)								
III	**DSC-5** Political History of India (From Indus culture to CE1206) Part -1 (3) **DSC-6** Regional History(3)	**OE-3** Introduction to Epigraphy (3) OR Freedom Movement in Karnataka (1800 to 1947) (3)	L1-3(3), L2-3(3) (4 hrs each)		SEC-2: Artificial Inte-lligence (2) (1+0+2)	Physical Education-Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
IV	**DSC-07** Political History of India 1206 to 1761 Part -2 (3) **DSC-08**	**OE-4** Freedom Movement in India(1885 to 1947) (3) **OR** Principals and Practice of Museology (3)	L1-4(3), L2-4(3) (4 hrs each)	Constitution of India (2)		Physical Education-Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25

	Cultural History of India (from Indus Culture to 1206) (3)							
Exit option with Diploma in …. (… credits)								
V	**DSC-09** History of Western Civilization (CE 6 – CE 1200) (4) **DSC-10** Colonialism and Nationalism in Asia (1900 to 1970) (4)	**DSE-1** History of Tourism in India (3) **OR** Heritage Tourism in Karnataka (3) **VOC-1** Principals of Filed Study.(3)			SEC-3: SEC such as Cyber Security (2) (1+0+2)	Physical Education-Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	22
VI	**DSC-11** Social Dissents in India (CE 6thto CE1800) (4) **DSC-12** History of India (CE 1761 –CE 1857) (4)	**DSE-2** Dr.B.RAmbedakar's Social and political Philosophy (43 **OR** Heritage sites in your on District (3) **VOC-2** Introduction to archives (3)			SEC-4: Professional Communication (2)	Physical Education - Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	24
Exit Option with Bachelor of …. Degree (… credits)								
VII	**DSC-13** Art and Architecture of India-(Ancient and early Medieval) (4) **DSC-14** Makers of Modern India (4) **DSC-15** Economic history of Ancient India (4)	DSE-1 Colonialism and Nationalism in India (3) DSE-2 Contemporary India -1947-2000 (3) History –Theory and Method (3)						21
VIII	**DSC-16** Art & Architecture of Karnataka (From CE 3 to CE 12) (3) **DSC-17** History of Indian Painting	DSE-3 Economic History of Medieval India (3) DSE-4 History of Modern Karnataka (1800-1947)(3) development (3)						21

	(3) **DSC-18** History of Indian Numismatics (3)	Research Project(6)						
Award of Bachelor of Bachelor of … Honours Degree (… credits)								

COURSE STRUCTURE

SEMESTER – I

Sl. No.	Course Code	Course Type	Title of the Course/Paper	Instruction hrs/week (L+T+P)	Duration of Examination for Summative Assessment (in hrs.)	Marks			Credits
						Formative Assessment	Summative Assessment	Total	
1.	HISDC01*	DSC	Political History of Karnataka (BCE-3 to 10 CE) Part -1	3 (2+1+0)	2	40	60	100	3
2.	HISDC02	DSC	Cultural Heritage of India	3 (2+1+0)	2	40	60	100	3
3.	HISOE01	OE	Cultural History of Karnataka (CE-3-CE 10) OR Introduction to Archeology	3 (2+1+0)	2	40	60	100	3
4.	HISAE01	AE L1	Kannada	3 (2+1+0)	2	40	60	100	3
5.	HISAE02	AE L2	MIL/MEL	3 (2+1+0)	2	40	60	100	3
6.	HISSE01	SEC (Skill based)	Digital Skills for Social Work Practice	2(1+0+2)	1 ½	15	35	50	2
7.	HISSE02	SEC (Value based)	Physical Education for Fitness	1(0+0+2)	1	-	-	25	1
8.	HISSE03	SEC (Value based	Health and Wellness	1(0+0+2)	1	-	-	25	1
Total								**700**	**25**

SEMESTER – II

Sl. No.	Course Code	Course Type	Title of the Course/Paper	Instruction hrs/week (L+T+P)	Duration of Examination for Summative Assessment	Marks			Credits
						Formative Assessment	Summative Assessment	Total	
1.	HISDC04	DSC	Political History of Karnataka (CE-11 to CE1750)	3 (2+1+0)	2	40	60	100	3
2.	HISDC05	DSC	Cultural Heritage of Karnataka	3 (2+1+0)	2	40	60	100	3
3.	HISOE02	OE	Cultural History of Karnataka (CE11 to CE1750) OR Manuscriptology	3 (2+1+0)	2	40	60	100	3
4.	HISAE03	AE L1	Kannada	3 (2+1+0)	2	40	60	100	3
5.	HISAE04	AE L2	MIL/MEL	3 (2+1+0)	2	40	60	100	3
6.	HISAE05	AE	Environmental Studies	2 (1+0+2)	1 ½	15	35	50	2
7.	HISSE04	SEC (Value based)	Physical Education Yoga	1 (0+0+2)	1	-	-	25	1
8.	HISSE05	SEC (Value based	NCC/NSS/R&R(S&G) / Cultural	1 (0+0+2)	1	-	-	25	1
Total								**700**	**25**

COURSE ARTICULATION MATRIX

Course Outcomes (COs) / Program Outcomes (POs)	DSC1	DSC2	DSC3	DSC4	DSC5	DSC6	OE 1	OE 2	SEC 1 SB	SEC VB	SEC VB	SEC VB	SEC VB

Disciplinary Knowledge	X	X	X	X	X	X	X	X	X	X	X	X	X
Communication Skills	X	X	X	X	X	X	X	X		X		X	X
Critical Thinking	X	X	X	X	X	X	X	X	X		X		
Problem Solving			X	X	X	X	X	X	X	X	X	X	X
Analytical Reasoning	X	X	X	X	X	X	X	X		X		X	X
Cooperation and Team Work		X	X	X		X	X	X		X	X	X	X
Reflective Thinking		X	X	X	X	X	X	X	X	X	X	X	X
Self-motivated Learning			X	X	X	X	X	X	X		X		
Diversity Management and Inclusive Approach	X	X	X	X		X	X	X					
Moral and Ethical Awareness/Reasoning	X	X	X	X	X	X	X	X			X		
Lifelong Learning		X		X	X	X	X	X		X	X	X	X

Pedagogy:

- Lecture Method-Class Room Teaching
- Learning Through Project Work
- Collaborative learning strategies
- Use of Learning Recourses like as

  Audio – Visual aids

  Films

  Documentaries

  Visit to historical sites

  Continuous Formative Evaluation/ Internal Assessment:

  Total marks for each course shall be based on continuous assessments and semester-end examinations. As per the decision taken at the Karnataka State Higher Education Council, it is necessary to have uniform pattern of 40 : 60 for IA and Semester End theory examinations

respectively in all the Universities, their Affiliated and Autonomous Colleges.

Total Marks for each course = 100% Continuous assessment (C1) = 20% marks Continuous assessment (C2) = 20% marks Semester End Examination (C3) = 60% marks.

Evaluation processofIAmarksshallbeasfollows.

a) The first component (C1) of assessment isfor 20% marks.This shall be based on test, assignment, seminar, case study, field work, project work etc.This assessment and score process should be completed after completing 50% of syllabus of the course/s and within 45 working days of semesterprogram.

b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be based on completion of remaining 50 percent of syllabus of thecoursesofthesemester.

c) During the 17th– 19thweek of the semester, a semester end examination shall be conducted by the University for each course. This forms the thirdandfinalcomponentofassessment(C3)andthemaximummarksfor thefinalcomponentwillbe60%.

d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, incase of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator /Principal. The Program Coordinator / Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decideto conduct special test to such candidate on the date fixed by the concerned teacher but before commencement of the concerned semester endexaminations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., requiredfor such tests/assignmentsand these be stamped by the concerned department using their department seal at the time of conducting tests /assignment/worketc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under.

OutlineforcontinuousassessmentactivitiesforC1andC2areasfollows:

Activities	**C1**	**C2**	**TotalMarks**
SessionTest	10% marks	10% marks	20%
Seminars/Presentations/Activity	10% marks		10%
Casestudy/Assignment/Field work/Projectworketc.		10% marks	10%
Total	20% marks	20% marks	40%

- ConductofSeminar,Casestudy/Assignment,etc.canbeeitherinC1orinC2componentattheconvenience oftheconcernedteacher.

COURSE-WISE SYLLABUS

BA

Semester 1

Title of the Course: Political History of Karnataka (BCE-3 to 10 CE) Part-1

Course 1	**Course 2**

Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester
3	39 or 42	3	39 or 42

Content of Course 1	39/42 Hrs
Unit – 1Introduction	13/14
Chapter No. 1 Survey of sources- Pre historic culture	04
Chapter No. 2 **FORMATION OF STATE** Kingship – Duties and Functions of King and his Ministers- Sapthanga theory	06
Chapter No. 3 Rituals and sacrifices Coronation ceremony-Rajasuya-Vajapeya.	04
Unit – 2 Early Beginnings:	13/14
Chapter-4 The Mauryas - The Satavahanas - Kadambas of Banavasi	4
Chapter No. 5. The Gangas of Talakad - Durvineetha -The Nolambas	4
:**Chapter No. 6 - Age of Empires** The Rastrakutas –Govinda III AmoghavarshaNrupatunga -Chalukyas of Badami – Pulikesin – II	6
Unit – 3 Kingdoms of Kalyana	13/14
Chapter No. 7 – Chalukyas of Kalyana-Tailapa-Vikramadithya-VI -Someshwara-III(CE-1076-CE-1126)	05
Chapter No. 8 Kalachuris of Kalyana-Bijjala-II.	05
Chapter No. 9. Central And Provincial Administration from Gangas of Talakadu to Kalachuris of Kalyana	04

Books for Reference

1. K.R Basavaraja - "History and Culture ofKarnataka"
2. R.SMugali - "Climpses ofKarnataka"
3. P.B.Desai - "A History ofKarnataka"
4. H.V ShrinivasaMurthy andR. Ramakrishnan - " A Concise History ofKarnataka"
5. A.Sundara(Ed) - "Karnataka Charitre" VolumeI
6. B. SurendraRao(Ed.) - "Karnataka Charitre" Volume II
7. R.RDiwakar - " Karnataka Through theAges"
8. M. ChidanandaMurthy - "Karnataka ShasanagalaSamskrutika Adhyayana"
9. S.Settar - "Halagannada – Lipi, Lipikara, LipiVyavasaya"
10. A.CNagesh - " Pracheena KarnatakaCharithre"

BA Semester 1

Title of the Course: Cultural Heritage ofIndia

Course 1	Course 2

Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester
3	**39 or 42**	**3**	**39 or 42**

Content of Course 1	**39/42 Hrs**
Unit – 1 Introduction	13/14
Chapter No. 1 Meaning and Definition of Historical Cultural Heritage-Concepts, Characteristics-types of Indian Cultural Heritage: Tangible, Intangible, Oral and Living traditions.	04
Chapter No. 2 Significance of Fairs and Festivals -Religious Rituals: Regional, Folk, Tribal, National - Monsoon fairs- Animal Fairs	05
Chapter No. 3 Pilgrimage centresof India- Kashi, Ujjaini,,Rameswara, Mount Abu Ajmer,Shravanabelagola,BandeNavazDarga, Amritsar, Goa.	05
Unit – 2 Legends, Narratives and CulturalEthos	13/14
Chapter No. 4. Meaning, Significance, forms and Tradition of Legends - Puranic Legends - Ramayana and Mahabharata - Panchtantra- Jataka- Angas.	06
Chapter No. 5. Traditional Performing Arts - Bharat NatyaShastra: The Source of Performing Indian Classical Arts;	03
Chapter No. 6. Indian Classical Music - Dances as Cultural Heritage. Oral Tradition and performing Arts Carnatic Music and Hindustani Music – Indian Theatre	05
Unit – 3 Architecture and Built Heritage	13/14
Chapter No. 7 Meaning and Definition – Caves as Built Heritage	05
Chapter No. 8. Important Monuments of India Shore Temple (Mahabalipuram), Aihole. Badami, Pattadakal. Ajanta,Ellora, Jaganatha Temple –Puri, Konark Sun Temple, Khajuraho, Sanchi.	03
Chapter No. 9 A(For Map work) - Monuments of India - Sarnath, Sanchi, Konark, Khajuraho, Hampi, TajMahal, Red Fort, Madurai, Shravanabelagola, Thanjavur, **B.Places of Historical importance :**Delhi,Agra, Nalanda,Saranatha,Sanchi,Hampi,Badami,Mahabalipuram,Ajantha,Ellora, Prayaga, Varanasi, Ramaeshwaram, Dwaraka, Konark, Khajuraho	06

Books for Reference

1. S.Radhakrishnan - "Culture ofIndia"

2. K.TAchaya - Indian food: A HistoricalCompanion,
3. Banga,I.(Ed) - The City in Indian History : UrbanDemography, Society and Politics.
4. A.LBasham - The Wonder that wasIndia.
5. SachinShekharBiswas - Protecting the CulturalHeritage
6. N.KBose - "Culture Zones of India" in culture and Society inIndia.
7. S.Narayan - Indian ClassicalDances.
8. Gokulsing,K.Moti - Popular Culture in a GlobalizedIndia,
9. BhanuShankarMehta - RamlilaVariedRespective
10. Rangacharya - The Natyashastra, English translation withcritical Notes.

BA Semester 1

Open Elective-1

Title of the Course: Cultural History of Karnataka (CE 3-CE 10) Part-I

Course 1		Course 2	
Number of Theory Credits	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	**39 or 42**	**3**	**39 or 42**

Content of Course 1	39/42 Hrs
Unit – 1Introduction	13/14
Chapter No. 1 Antiquity of Karnataka- Language and Script – Inscriptions and Development of Literature	03
Chapter No. 2 Agriculture andLand Grants	05
Chapter No. 3 Education and Emergence of Agraharas	06
Unit – 2 SocialConditions	13/14
Chapter No. 4. Society – Family and Customs – Marriage system – Food habits	05
Chapter No. 5. Religion – Traditions and Rituals	05
Chapter No. 6. Festivities – Dasara, Karaga, MahamasthakaAbisheka; Pilgrimages – Savadati, Kudalasangama, BandeNavazUrs	04
Unit – 3 Religious Traditions	13/14
Chapter No. 7 Pilgrim Circuits of Jainism and Buddhism	04
Chapter No. 8. Hindusim – Various Cults: Shaiva-Vaishnava- Bhagavatha	05
Chapter No. 9 Art and Architecture – Fine Arts and Performing Arts	05

Books for Reference

1. S.Settar - "Halagannada – Lipi, Lipikara, LipiVyavasaya"
2. K.R Basavaraja - "History and Culture ofKarnataka"
3. R. Rajanna&A.CNagesh - "KarnatakadaCharithre" VolumeI
4. P.B.Desai - "A History of Karnataka"
5. A.Sundara(Ed) - "Karnataka Charitre" VolumeI
6. B. SurendraRao(Ed.) - "Karnataka Charitre" VolumeII
7. S.Settar - " Halagannada; Bhashe, BhashaVikasa, BhashaBandhavya"
8. M. ChidanandaMurthy - "Karnataka ShasanagalaSamskrutika Adhyayana"
9. S.Rajashekara - " KarnatakaArchitecture"
10. K.A. NilakantaSastri - "A History of SouthIndia

BA Semester 1

Open Elective

Title of the Course: Introduction to Archaeology

Course 1	Course 2

Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester
3	39 or 42	3	39 or 42

Content of Course 1	39/42 Hrs
Unit – 1Introduction	13/14
Chapter No. 1 Definition – Scope - Nature	03
Chapter No. 2 Concepts – Artifacts – Assemblage – Industry – Culture -Layer	05
Chapter No. 3 Kinds of Archaeology – Ethno, Marine and Salvage	06
Unit – 2 Archaeology byPeriod	13/14
Chapter No. 4. Lower Paleolithic – Middle Paleolithic – Upper Paleolithic Mesolithic – Chalcolithic – Bronze age – Iron Age	05
Chapter No. 5. Development in the Global Context – From Antiquarians to Scientific Archaeology – Finders Petrie- Pitt Riveres – LeonardWooly.	05
Chapter No. 6. Archaeology in India – William Jones to Wheeler – The Allchins – S.R. Rao – Archaeological Survey of India – Department of Archaeology Government of Karnataka	04
Unit – 3 Exploration, Excavation and Analysis	13/14
ChapterNo.7 Identification of a site – field survey – sampling techniques – Application of scientificmethods.	05
ChapterNo.8. Methods of Excavation – vertical and horizontal – Trenching – Gridding	05
Chapter No. 9 Excavation of burial mounds – Open Stripping – Quadrant method – Excavation of pits – Excavation of a typical site	04

Books for Reference

1. AgrawalD.P - Archaeology inIndia
2. AikenM.J - Science based dating inarchaeology
3. AllchinBridget AndRaymondAllchin - Rise of Civilisation in India and Pakistan
4. Atkinson RJC - Field Archaeology
5. Basker.P - Techniques of ArchaeologicalExcavation
6. ChakrabarthiD.K - A History of Indian Archaeology fromthe beginning to 1947
7. ChakrabarthiD.K - Theoreftical Perspectives in IndianArchaeology
8. Gosha.A - Encyclopaedia of IndianArchaeology
9. Rajan.K - Archaeology, Principles andMethods
10. Raman K.V - Principles and Methods inArchaeology

BA Semester 2

Title of the Course: Political History of Karnataka (CE11-CE 1750)

Course 1		Course 2	
Number of Theory Credits	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	**39 or 42**	**3**	**39 or 42**

Content of Course 1	**39/42 Hrs**
Unit – 1Introduction	13/14
Chapter No. 1 TheHoysalas of Dorasamudra: Vishnuvardhana	05
Chapter No. 2 The Yadavas of Devagiri: Bhillam- V	05
Chapter No. 3 The Kambasa of Hanagal	04
Unit – 2 MedievalKarnataka	13/14
Chapter No. 4. Vijayanagara– Empire–Krishnadevraya – The betal of TalikotBahamaniKingdom-Mahammad-Gawan	06
Chapter No. 5. Nayakas of Chitrdurga-MadukariNayaka V, Nayakas of Keladi-ShivappaNayaka.	05
Chapter No. 6. Maratha Rule in Karnataka – Shahaji – Shivaji	03
Unit – 3 Post Vijayanagar	13/14
Chapter No. 7 Wadiyar of Mysore – ChikkadevrajWadiyar-KirshanrajWadiyar IV	05
Chapter No. 8. Minor Chieftains – Yalahanka Nada Prabhus – SondaNayakas	04
Chapter No. 9 Administration fromHoysalas to post Vijayanagarperiod	05

Books for Reference

1. K.R Basavaraja - "History and Culture of Karnataka"
2. P.B.Desai - "A History of Karnataka"
3. BurtonStein - "Vijayanagara"
4. B.SheikAli(Ed.) - "Karnataka SamagraCharitre" VolumeIV.
5. B. VivekRai(Ed.) - "Pravasi KandaVijayanagara"
6. G.Yazdani - "History of theDeccan"
7. K. Satyanarayana - "History of the Wodeyars ofMysore"
8. MohibulHasan - "History of TipuSulthan"
9. T.VMahalingam - " Administration and Social LifeUnderVijayanagara"
10. K.V Ramesh - "History of South Kenara"

BA Semester 2

Title of the Course: Cultural Heritage ofKarnataka

Course 1		Course 2	
Number of Theory Credits	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	**39 or 42**	**3**	**39 or 42**

Content of Course 1	**39/42 Hrs**
Unit – 1 Karnataka Cultural Heritage : An Introduction	13/14
Chapter No. 1 Meaning, Definition and Historical background of cultural Heritage	05
Chapter No. 2 Characteristics of Karnataka Heritage	05
Chapter No. 3 Significance of cultural Heritage	04
Unit – 2 Fairs, Festivals and Rituals	
Chapter No. 4. Historical background of Fairs, Festivals and Rituals and their importance in Karnataka culture	05
Chapter No. 5. Fairs of Karnataka – Types of Fairs– Temple fairs (Utsava) Folk Fairs, Urs, Karaga, Baisaki,-MakarSankaramana, Kambali-Jallikattu	04
Chapter No. 6. Festivalsof Karnataka – Religious festivals Ugadi, GaneshaChaturthi-Dasara- Deepavali, Huttari,Pongal, Muharram, Id-ul-Fitr (Ramzan) Idul-Zuha (Bakrid), GurunankJayanthi, and Christmas	05
Unit – 3 Traditional Art andArchitecture and cultural Ethos	
Chapter No. 7 Meaningof Art andArchitecture – Forms of Dance	05
Chapter No. 8. Forms of Music	04
Chapter No. 9 Architecture and Built Heritage	05

Books for Reference

1. K.TAchaya - Indian food HistoricalCompanion
2. SachinShekharBiswas - Protecting the CulturalHeritage
3. N.K Bose - Culture Zones of India in culture and Society in India.
4. S.Narayan - Indian ClassicalDances
5. Prakash,H.SShiva - TraditionalTheatres
6. KrishnaN.Reddy - Cultural Heritage of SouthIndia
7. Dr. A.Murageppa - DakshinBhartiyaJaanpadKosh. Vol-III
8. Dr. SurynathKamat - Karnataka SankshiptItihas
9. ShrinivasT - BhartiyaItihasMattuParampare
10. K.R. Basavaraj - Karnataka History andCulture

BA Semester 2

Open Elective-2

Title of the Course: Cultural History of Karnataka (CE11 to CE1750)

Course 1		**Course 2**	
Number of Theory Credits	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	**39 or 42**	**3**	**39 or 42**

Content of Course 1	**39/42 Hrs**
Unit – 1Introduction	13/14
Chapter No. 1 VachanaLiterature – AnubhavaMantappa	05
Chapter No. 2 Bhakti Movement of Karnataka – Literature Movement	04
Chapter No. 3 Sufism and Christian missionaries in Karnataka	05
Unit – 2 Society andEconomy	13/14
Chapter No. 4. Social Conditions – Caste System – Rituals and Customs	05
Chapter No. 5. Economic Conditions – Agriculture - Irrigation	04
Chapter No. 6. Indigenous Industries - Trade and Commerce	05
Unit – 3 Art and Architecture	13/14
Chapter No. 7 Temple Architecture **–** Islamic Architecture	05
Chapter No. 8. Church Architecture	04
Chapter No. 9 Painting	05

Books for Reference

1. P.BDesai - History ofKarnataka
2. K.R Basavaraja - History and Culture ofKarnataka
3. B.RHiremath - Karnataka ShasanagalalliVartakaru
4. RahamatTarikere - KarnatakaSufigalu
5. RajaramHegde& M.VVasu - Dakshina Karnataka ArasuManethangalu
6. R.RDiwakar - Karnatka Through theAges
7. SuryanathU.Kamath - A History of Karnataka
8. H.K Sherwani - TheBahamanïsoftheDeccan
9. Dept.of Archaeology - VijayanagarAdhayayana
10. BaragurRamachandrappa - KarnatakaSangathi

Semester2

Open Elective

Title of the Course: Manuscriptology

Course 1		**Course 2**	
Number of Theory Credits	**Number of lecture hours/semester**	**Number of Theory Credits**	**Number of lecture hours/semester**
3	**39 or 42**	**3**	**39 or 42**

Content of Course 1	**39/42 Hrs**
Unit – 1Introduction	13/14
Chapter No. 1 Meaning – Definition - Characteristics	04
Chapter No. 2 Scope and importance	05
Chapter No. 3 Types of Manuscripts - Methods of Study	04
Unit – 2 Collection	13/14
Chapter No. 4. History of Manuscriptology	05
Chapter No. 5. Indian Manuscriptology	04
Chapter No. 6. Manuscripts in Kannada, Brahmi, Sanskrit, Malayalam, DevanagariandModi Script	05
Unit – 3 Editing	13/14
Chapter No. 7 Collection of Manuscripts	03
Chapter No. 8. Process of Editing	05
Chapter No. 9 Preservation of Manuscripts	06

Books for Reference

1. ChinthaharChakravathi - Study ofManuscriptology
2. M.V Seetharamiah& M.Chidanadamurthy - HastipratiSastra
3. N.Geethacharya - HastipratiSastraAdhyayana
4. SitharamJahagirdar - Kannada GranthaSampadhanaSastraParichaya
5. S. Jagannath - GranthaSampadanaShastra
6. Devarakondareddy - LipiyaHuttumattuBelavanige
7. MadhavaNaKatti - LipishastraPravesha
8. B.SSanaya - Kannada Hasta Prathigala Micro filmSoochi
9. T.VVenkatalachalaSastri - HalayaHonnu

BA in History Model Question Paper

Title of the Paper :

Time-2 hours Max Marks-60

Note: All Parts – A,B and C are Compulsory

Part-A

Answer any Two of the following Short Notes 2 x 5=10

1

2

3

4

Part-B

Answer any Two of the following Question 2 x 10 =20

5

6

7

8

Part-C

Answer any Two of the following Question 2 x 15 =30

9

10

11

12 Map Questions

5 Places Mark in the Map and Brief Explain

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ
ಸ್ನಾತಕೋತ್ತರಕೇಂದ್ರ, ವಿಜಯಪುರ-586108

RANI CHANNAMMA UNIVERSITY
P. G. CENTRE, VIJAYAPUR- 586108

SCHOOL OF SOCIAL SCIENCE
ಇತಿಹಾಸಅಧ್ಯಯನ ವಿಭಾಗ

Dr. K.L.N. MURTHY,
Chairman & ProfessorEmail Id.: dr.murthykln@gmail.com
Cell no.: 9448413235

DEPARTMENT OF STUDIES IN HISTORY

ರಾಚವಿ/ಸ್ನಾಕೇಂವಿ/ಇತಿ/2022-23/51 ದಿನಾಂಕ : 10-09-2022

TO,

The Registrar

Rani Channamma University,

VidyaSangama,

Belagavi-591156

Sir,

Sub: Submission of BOS (UG) proceedings and syllabus of the Department of History –reg

Ref:RCU/Belagavi/R.O./syll./ 2022-23/2301, Date: 02.09.2022

With reference to the Subject cited above, please find herewith enclosed the B.A. (UG) History, NEP 2020 Syllabus of all Semester in Hard & Soft Copies.

As such the Curriculum of the all 3rd & 4th Semesters was considered and with help of several experts it was drafted and placed before the BOS. The BOS with its modifications has approved the same.

The proceeding of the BOS (U.G) meeting are enclosed herewith for your kind perusal.Kindly do the needful.

Thanking you

Yours faithfully

10/9/2022

Professor. & Chairman
Dept. of Studies and Research in History
Rani Channamma University
Post Graduate Centre,
VIJAYAPUR-586108.

ರಾಣಿ ಚನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ
ಸ್ನಾತಕೋತ್ತರ ಕೇಂದ್ರ, ವಿಜಯಪುರ-586108

RANI CHANNAMMA UNIVERSITY
P. G. CENTRE, VIJAYAPUR- 586108

SCHOOL OF SOCIAL SCIENCE
(NAAC Accredited with B+ Grade - 2021)
ಇತಿಹಾಸ ಅಧ್ಯಯನ ವಿಭಾಗ

Dr. K.L.N. MURTHY,
Chairman & Professor,

DEPARTMENT OF STUDIES IN HISTORY

Email Id.: dr.murthykln@gmail.com Cell no.: 9448443235

ರಾಚವಿ/ಸ್ನಾಕೇಂವಿ/ಇತಿ/2022-23/ ದಿನಾಂಕ:10/09/2022

Proceeding of the meeting of Board of Studies in History (U.G) held on 10.09.2022 at 11.00 AM in the Chambers of the Chairman, Department of History Rani Channamma University, P.G Centre, Vijayapur.

Members Present,

1. Dr. K. L. N. Murthy- Professor and Chairman — Chairman
2. Dr. Ravindra Kokatanura, Principal ,Govt Frist Grade college Harugeri — Member
3. Dr. S.R Nagannavar Asst Professor of History V.M.S.R Vastrad Art College Hunagund — Member

The Chairman BOS (U.G) welcomed the members of the Board of Studies and introduced the Agenda.

The structured curriculum and the syllabus drafted for Under Graduate. (U.G.) History NEP 2020 was placed for approval before the BOS. The BOS took Cognizance of the Suggestions made by the members. It was resolved that the Suggestions offered by the members be prepare in the new syllabus NEP 2020

The BOS approved the structured curriculum, syllabus of two semesters . 3rd Semester 02 papers DSE-5&6 Two papers OE and 4th Semester 02 papers DSE-7&8 Two papers OE.

No Changes in 1&2 Semester Syllabus.

Preparation of Examiner list has been done.

The meeting was concluded by the Chairman extending thanks to all the members.

Dr.KLN Murthy

RANI CHANNAMMA UNIVERSITY

VIDYASANGAMA, BELAGAVI

NEP -2020

UNDER GRADUATE SYLLABUS (UG)

III AND IV SEMISTER

DEPT. OF HISOTRY AND ARCHAEOLOGY

2022-23

RANI CHANNAMMA UNIVERSITY

DEPARTMENT OF HISTORY

Third Semester

Paper No	Course	Title of the Course	Instruction Hours Per Week	Exam Duration	Marks			Credits
					I.A	ETE	Total	
3.1	DSC-5	Political History of India(from Indus culture to 1206 AD Part-1	3	2	40	60	100	3
3.2	DSC-6	Regional History	3	2	40	60	100	3
3.3	OE-3	Introduction to Epigraphy **OR** Freedom Movement in Karanataka (1800 to 1947)	3	2	40	60	100	3
							Total Credits	9

BA

Semester 3

DSC-5

Course Title: **Political History of India(From Indus Culture upto 1206)**	
Total contact Hours: **39-42**	Course Credits: **3**
Formative Assessment Marks: **40**	Duration of ESA/Exam: **60**
Model Syllabus Authors:	Summative Assessment Marks:

Course Pre-requisites(s): History and Culture of Political History of India

Course Outcomes (Cos):

At the end of the course the students should be able to:

(Write 3-7 course outcomes. Course outcomes are statements of observable student's actions that serve as evidence of knowledge, skills and values acquired in this course)

- Understand the history and culture of Political History of Indiaregion.
- Analyse the importance of causes for backwardness of this region.
- Understand the influence of political influence on the people and culture of this region.
- Understand the political, Social, Religious and Cultural history of the region.
- Appreciate the divergent cultural and communal harmony of this region.

Course Articulation Matrix: Mapping of Course Outcomes (OCs) with Program Outcomes (Pos 1-12).

Course Outcomes (Cos)/Program Outcomes (Pos)	**DSC 1**	**DSC 2**	**DSC 3**	**DSC 4**	**DSC 5**	**DSC 6**	**OE 1**	**OE 2**	**SEC 1**	**SEC 2**
Disciplinary knowledge	X	X	X	X	X	X	X	X		
Communication Skills	X	X	X	X	X	X	X	X	X	X

Critical Thinking	X	X	X	X	X	X	X	X	X	X
Problem Solving	X	X	X	X	X	X	X	X	X	X
Analytical Reasoning	X	X	X	X	X	X	X	X		
Cooperation and Team Work	X	X	X	X	X					
Reflective Thinking	X	X	X	X	X	X	X	X	X	X
Self-Motivated Learning	X	X	X	X	X	X	X	X	X	X
Diversity Management and Inclusive Approach	X	X	X	X	X	X	X	X	X	X
Moral and Ethical Awareness Reasoning	X	X	X	X	X	X	X	X	X	X
Lifelong Learning	X	X	X	X	X	X	X	X	X	X

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark **"X"** the intersection cell if a course outcomes addresses a particular program outcome.

BA

Semester 3

DSC-5

POLITICAL HISTORY OF INDIA (From Indus Culture upto 1206)

The main objective of this syllabus is to provide a broad historic outline about the process of socio-political formations in the north and south India up to 1206 CE. Four modules introduce four main process of the Socio - Political formations; the emergence of the first urbanization in the north western part of early India during bronze age, the Socio - Political formations of Indo Gangetic plains in the Iron Age, the emergence of an empire under Mauryas in the north the chola – chera policy in the South and the formation of feudal cultures in the north and south.

UNIT -1 Towards Civilization -Harappan and Vedic Civilization	
Chapter-I	**6**
Pre-Harappan cultures; - extension of the Harappan culture- features of the Harappan sites; Harappa, Mohenjodaro, Lothal, Dholavira, Kalibangan	
Chapter-II	**6**
Debate on the decline of Indus civilization, Debate on Harappan script: AiravathamMahadevan – AskoParpola	
Chapter-III	**6**
Vedic literatures and Archaeological evidences - PGW, NBPW- early tribal pastoral and agrarian society in the Gangetic Plains, Early and later Vedic polity	
UNIT -2 : Socio-Political Formations in the Indo - Gangetic Plains Nature of state	
Chapter-IV	**6**
Formation of urban centers- Mahajanapadas,- Oligarchies, Monarchies and republics	
Chapter-V	**6**
Material setting of the formation of Jainism and Buddhism ,From Mahajanapadas to the empire- domination of Magadha- foundation of Mauryan polity,	
Chapter-VI	**5**

Asokan Edicts and Megasthenees'sIndica, Arthasasthra and early Indian treatise on the theory of state; Sapthanga – nature of Asoka's dhamma	
UNIT -3 :	
Chapter-VII	**5**
Chera, Chola and Pandya polity- Chalukyan polity -Guptha polity.	
Chapter -VIII	**6**
Debates on Indian feudalism; R.S Sharma, HerbansMukhiaSouth Indian feudalism	
Chapter -IX	**5**
Arab conquest of Sind- the Sultanate ascendancy in India.	

Essential Readings:

D.N Jha. Ancient India an Introductory Outline

ShareenRatnagar. Understanding Harappa

M.K Bhavalikar. Cultural Imperialism

R.S. Sharma. India's Ancient Pasts

Upinder Singh. A History of Ancient and Early Medieval India

R.S. Sharma. Material Culture and Social formations in Ancient India

……..India's Ancient Past

RomilaThappar. From Lineage to State

……Early India

Upinder Singh. A History of Ancient and Early Medieval India

Pedagogy:

Knowledge: The student should acquire knowledge of terms, concepts, political events, ideas, conventions, problems, trends, personalities, chronology and generalizations etc. related to the study of Political History Of India Region. The student should be able to recall, recognize, show and read the history of the region.

Understanding: The student should develop understanding of terms, facts, important events, trends, etc. related to the history and Culture of Political History Of India Region. The student is able to classify facts, illustrate events, compare and

contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of History and Culture of Political History Of India region. It also creates a critical thinking ability among the students. The student will be able to identify, analyse, collect, select, draw and verify the historical facts.

Practical Skills: The subject enables the students to develop practical skills which help in the study and understanding of historical facts. The student should be able to draw maps, charts, diagrams and prepare models, etc.

Learning Outcomes: This course enables students to explore various aspects of political, Culture and Heritage and also the cultural diversity of Political History Of India region in historical perspective that discusses numerous cultural practices that have evolved over centuries. The students will gather knowledge about the cultural heritage, cultural forms and cultural expressions performing arts, fairs and festivals.

Assessment:Weight age for assessment (in percentage)

Outlines for continuous assessment activities for C1 and C2

Formative Assessment			
Activities	**C1**	**C2**	**Total Marks**
Session Test	10 Marks	10	20
Sessions/Presentations/Activities	10 Marks		10
Case Study/Assignment/Field Work Etc.		10	10
		Total	**40**

Pedagogy:

Knowledge: The student should acquire knowledge of terms, concepts, political events, ideas, conventions, problems, trends, personalities, chronology and generalizations etc. related to the study of Bangalore in Time and Space. The student should be able to recall, recognize, show and read the history of the region.

Understanding: The student should develop understanding of terms, facts, important events, trends, etc. related to the history and Culture of Bangalore in Time and Space. The student is able to classify facts, illustrate events, compare and contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of History and Culture of Bangalore in Time and Space. It also creates a critical thinking ability among the students. The student will be able to identify, analyse, collect, select, draw and verify the historical facts.

Practical Skills: The subject enables the students to develop practical skills which help in the study and understanding of historical facts. The student should be able to draw maps, charts, diagrams and prepare models, etc.

Learning Outcomes: This course enables students to explore various aspects of political, Culture and Heritage and also the cultural diversity of Bangalore in Time and Space in historical perspective that discusses numerous cultural practices that have evolved over centuries. The students will gather knowledge about the cultural heritage, cultural forms and cultural expressions performing arts, fairs and festivals.

BA III Semester
History of Bombay Karnataka
Regional History DSC-6

Course Title: **History of Bombay Karnataka**	
Total contact Hours: **39-42**	Course Credits: **3**
Formative Assessment Marks: **40**	Duration of ESA/Exam: **60**
Model Syllabus Authors:	Summative Assessment Marks:

Course Pre-requisites(s): History and Culture of History of Bombay Karnataka.

Course Outcomes (Cos):

At the end of the course the students should be able to:

(Write 3-7 course outcomes. Course outcomes are statements of observable student's actions that serve as evidence of knowledge, skills and values acquired in this course)

- Understand the history and culture of History of Bombay Karnataka.
- Analyse the importance of causes for backwardness of this region.
- Understand the influence of political influence on the people and culture of this region.
- Understand the political, Social, Religious and Cultural history of the region.
- Appreciate the divergent cultural and communal harmony of this region.

Course Articulation Matrix: Mapping of Course Outcomes (OCs) with Program Outcomes (Pos 1-12).

Course Outcomes (Cos)/Program Outcomes (Pos)	**DSC 1**	**DSC 2**	**DSC 3**	**DSC 4**	**DSC 5**	**DSC 6**	**OE 1**	**OE 2**	**SEC 1**	**SEC 2**
Disciplinary knowledge	X	X	X	X	X	X	X	X		
Communication Skills	X	X	X	X	X	X	X	X	X	X

Critical Thinking	X	X	X	X	X	X	X	X	X	X
Problem Solving	X	X	X	X	X	X	X	X	X	X
Analytical Reasoning	X	X	X	X	X	X	X	X		
Cooperation and Team Work	X	X	X	X	X					
Reflective Thinking	X	X	X	X	X	X	X	X	X	X
Self-Motivated Learning	X	X	X	X	X	X	X	X	X	X
Diversity Management and Inclusive Approach	X	X	X	X	X	X	X	X	X	X
Moral and Ethical Awareness Reasoning	X	X	X	X	X	X	X	X	X	X
Lifelong Learning	X	X	X	X	X	X	X	X	X	X

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark **"X"** the intersection cell if a course outcomes addresses a particular program outcome.

DSC -6

BA III Semester

History of Bombay Karnataka

Content of Course 1	39/42 Hrs
Unit – 1 Introduction – Contributions of Deccan Kingdoms	**15/16**
Chapter No.1 Geographical Features -Sources for the study of Bombay Karnataka.	02
Chapter No.2 Mourya Rule in Bombay Karnataka-Shatavahanas. Chalukyas of Badami : Pulakeshi II - Chalukyas of Kalayan: Vikramadity VI – Their Cultural Contributions.	09
Chapter No.3 Bahamani Kingdom: Mahammad Gawan - Adil Shahis of Bijapur: Ibrahim Adilshahi II. Their Cultural Contributions	05
Unit – 2 Religions in Bombay Karnataka	**10/11**
Chapter No.4 Shaiva and Vaishnava, KalamukhaCults,Basaveshwara.	04
Chapter No.5 Jainism and Jain Centers in Bombay Karnataka : Badami,Pattadkallu, Aihole, Hallur, Terdal, Lakkundi, Belagavi, Halasi, Ammanagi	03
Chapter No.6 Bhuddism and Buddhist centers in Bombay Karnataka:Aihole, Badami, Banavasi, Koliwada and Mundgod.	03`
Unit – 3 Towards Freedom Movement`	**15/16**
Chapter No.7. Desagatis of Bombay Karnataka –Diwan BahaddurShivalangraoDeshamuk – Rani	08

Channamma,SangolliRayanna.HalagaliBedas and Sindhur Laxaman.	
Chapter No.8 Tilak and Gandhi in Bombay Karnataka – BelgaumCongress.	03
Chapter No.9 Gandhi Movements in Bombay Karnataka – Non Co-operation movement, Salt Sathyagraha and Forest Sathyagraha.	05

Books for Reference:

1. K.R Basavaraja - History and Culture of Karnataka
2. R.S Mugali - Glimpses of Karnataka
3. P.B. Desai - A History of Karnataka
4. H.V Shrinivasa Murthy and R.Ramakrishnan - A Concise History of Karnataka
5. R.R Diwakar - Karnataka Through the Ages
6. M. Chidananda Murthy - Karnataka ShasanagalaSamskrutika Adhyayana
7. Sadashiva K - SamagraKarnatakadItihasa
8. Palaksha - SamagraKarnatakadItihasa
9. Suryanath Kamath - KarnatakadItihasamattuSamskruti
10. Prof.ShrinivasVPadigar - BadamiChalukyaraShashanagalu, Vastu mattuShilpakale Karnataka ItihasSamshodhan Mandal Dharwad.
11. Dr. Shilakant.Pattar - Pattadakallu Darshan- Karnataka Itihas Samshodhan Mandal Dharwad.

Pedagogy:

Knowledge: The student should acquire knowledge of terms, concepts, political events, ideas, conventions, problems, trends, personalities, chronology and generalizations etc. related to the study of Kalyana Karnataka Region. The student should be able to recall, recognize, show and read the history of the region.

Understanding: The student should develop understanding of terms, facts, important events, trends, etc. related to the history and Culture of Kalyana Karnataka Region. The student is able to classify facts, illustrate events, compare and contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of History and Culture of Kalyana Karnataka region. It also creates a critical thinking ability among the students. The student will be able to identify, analyse, collect, select, draw and verify the historical facts.

Practical Skills: The subject enables the students to develop practical skills which help in the study and understanding of historical facts. The student should be able to draw maps, charts, diagrams and prepare models, etc.

Learning Outcomes: This course enables students to explore various aspects of political, Culture and Heritage and also the cultural diversity of Kalyana Karnataka region in historical perspective that discusses numerous cultural practices that have evolved over centuries. The students will gather knowledge about the cultural heritage, cultural forms and cultural expressions performing arts, fairs and festivals.

Assessment:Weight age for assessment (in percentage)

Outlines for continuous assessment activities for C1 and C2

Formative Assessment			
Activities	**C1**	**C2**	**Total Marks**
Session Test	10 Marks	10	20
Sessions/Presentations/Activities	10 Marks		10
Case Study/Assignment/Field Work Etc.		10	10
Total			**40**

Open Elective -3

Course Category: Elective course

Title of the Course: **Introduction to Epigraphy**	
Total contact Hours: **39-42**	Course Credits: **3**
Formative Assessment Marks: **40**	Duration of ESA/Exam: **60**
Model Syllabus Authors:	Summative Assessment Marks:

Course Pre-requisites(s): Freedom Movement in Karnataka (1800-1947)

Course Outcomes (Cos):

At the end of the course the students should be able to:

(Write 3-7 course outcomes. Course outcomes are statements of observable student's actions that serve as evidence of knowledge, skills and values acquired in this course)

- Understand the Freedom Movement in Karnataka (1800-1947)
- Analyse the importance of causes for backwardness of this region.

Understand the influence of Freedom Movement in Karnataka (1800-1947)

- Understand the political, Social, Religious and Cultural history of the region.
- Appreciate the divergent cultural and communal harmony of this region.

Course Articulation Matrix: Mapping of Course Outcomes (OCs) with Program Outcomes (Pos 1-12).

Course Outcomes (Cos)/Program Outcomes (Pos)	**DSC 1**	**DSC 2**	**DSC 3**	**DSC 4**	**DSC 5**	**DSC 6**	**OE 1**	**OE 2**	**SEC 1**	**SEC 2**
Disciplinary knowledge	X	X	X	X	X	X	X	X		
Communication Skills	X	X	X	X	X	X	X	X	X	X
Critical Thinking	X	X	X	X	X	X	X	X	X	X
Problem Solving	X	X	X	X	X	X	X	X	X	X

Analytical Reasoning	X	X	X	X	X	X	X	X		
Cooperation and Team Work	X	X	X	X	X					
Reflective Thinking	X	X	X	X	X	X	X	X	X	X
Self-Motivated Learning	X	X	X	X	X	X	X	X	X	X
Diversity Management and Inclusive Approach	X	X	X	X	X	X	X	X	X	X
Moral and Ethical Awareness Reasoning	X	X	X	X	X	X	X	X	X	X
Lifelong Learning	X	X	X	X	X	X	X	X	X	X

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark **"X"** the intersection cell if a course outcomes addresses a particular program outcome.

Introduction to Epigraphy
Paper -3.3
Open Elective -3
Course Category: Elective course

No. of Credits: 3

No. of Contact Hours: 3 Hours per week

This paper aims to provide a broad outline about the nature of epigraphical studies in India and also familiarize the ancient scripts. Students could differentiate the inscriptions based on script and language. Use inscriptions as source material for reconstruction of History and historical Understanding. Read the inscriptions and manuscripts and compares it with present style of writing

CONTENT OF COURSE	42 HOURS
UNIT-I Introduction to Epigraphy	
CHAPTER-1 ❖ Evolution of Indian Epigraphy and methods of epigraphy, ❖ Definitions- Key concepts; epigraphy, paleography.	06
CHAPTER-2 ❖ James Prinsep and the decipherment of Brahmi inscriptions ❖ Attempts to decipher the Indus script Methods; eye copy, estampage and photography	06
CHAPTER-3 ❖ Presentation of Text- ❖ Dating- Eras; Kali era, Saka era, Vikrama era. ❖ Collections of inscriptions during Colonial Period; EpigraphiaIndica, ❖ South Indian Inscriptions,	06
UNIT-IIEpigraphiccarnatica.	
CHAPTER-4 Scripts; Brahmi ,Kharoshti, Vattezhuttu, , Grantha ❖ Medium of inscriptions ❖ palm leaves, ❖ copper plates, ❖ silver plates, ❖ walls of caves	05
CHAPTER-5 ❖ Nature of inscriptions; Memorials, Labels, land grants, phashasthi.	03
CHAPTER-6 Historicizing Some Important Inscriptions Asokan inscriptions in Karnataka ❖ Halmidi inscriptions ❖ Uttaramerur inscription ❖ Aihole ❖ Inscriptions of vijayanagara period	04
UNIT-III	
CHAPTER-7 North Indian Epigraphy/Inscriptions. ❖ Hatigumpha Inscription of Kharavela. ❖ Samudragupta's Allahabad Pillar Inscription.	04
CHAPTER-8 South Indian Epigraphy/Inscriptions. ❖ Talagunda Inscription	04

❖ Nasik Inscription	
CHAPTER-9 PracticalsIn Kannada Palaeography. ❖ Practical Training in taking estampages of stone and copper plate inscriptions by visiting the historical places.	04

REFERENCE BOOK

1. Buhler, G., Indian Palaeography, Indological Book House, N.Delhi, 1968
2. Pandey, R.B., Indian Palaeography, Motilal Banarsidas, Benaras, 1952
3. Dani, A.H., Indian Palaeography
4. Mahalingam, T.V., Early South Indian Palaeography, University of Madras, 1967
5. Sivaramamurthy, Indian Epigraphy and South Indian Scripts
6. Burnell, A.C., Elements of South Indian Palaeography
7. Mahalingam, T.V., Early South Indian Palaeography
8. Rajan, K., Kalvettiyal (Tamil), Mano Pathippagam, Thanjavur
9. Natana. Kasinathan, Kalleluttukalai, (Tamil)
10. Subramanian, T.N., South Indian Temple Inscriptions.

Pedagogy:

Knowledge: the student should acquire knowledge of terms, concepts, political events, ideas, conventions, problems, trends, personalities, chronology and generalizations etc. related to the study of Introduction to Epigraphy. The student should be able to recall, recognize, show and read the history of the medieval times.

Understanding: The student should develop understanding of terms, facts, important events, trends, etc., related to Introduction to Epigraphy. The student is able to classify facts, illustrate events, compare and contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of Introduction to Epigraphy. It also creates a critical thinking ability among the students. The student will be able to identify, analyse, collect, select, draw and verify the historical facts and figures.

Practical Skills: The subject enables the students to develop practical skills which help in the study and understanding of historical facts. The student should be able to draw maps, charts, diagrams and prepare models, etc.

Learning Outcomes: This course enables students to explore various aspects of political, diplomatic relations of the rulers of medieval times in historical perspective that discusses numerous political practices that have evolved over centuries. The students will gather knowledge about the various dynasties, political diplomacy, results and impact wars and battles the people. It also helps the students to develop the knowledge and awareness about the political ideologies.

Assessment:

Weight age for assessment (in percentage)

Outlines for continuous assessment activities for C1 and C2

Formative Assessment			
Activities	**C1**	**C2**	**Total Marks**
Session Test	10 Marks	10	20
Sessions/Presentations/Activities	10 Marks		10
Case Study/Assignment/Field Work Etc.		10	10
Total			**40**

BA
III Semester
O.E -3

Title of the Course: **Freedom Movement in Karnataka (1800-1947)**	
Total contact Hours: **39-42**	Course Credits: **3**
Formative Assessment Marks: **40**	Duration of ESA/Exam: **60**
Model Syllabus Authors:	Summative Assessment Marks:

Course Pre-requisites(s): Freedom Movement in Karnataka (1800-1947)

Course Outcomes (Cos):

At the end of the course the students should be able to:

(Write 3-7 course outcomes. Course outcomes are statements of observable student's actions that serve as evidence of knowledge, skills and values acquired in this course)

- Understand the Freedom Movement in Karnataka (1800-1947)
- Analyse the importance of causes for backwardness of this region.

Understand the influence of Freedom Movement in Karnataka (1800-1947)

- Understand the political, Social, Religious and Cultural history of the region.
- Appreciate the divergent cultural and communal harmony of this region.

Course Articulation Matrix: Mapping of Course Outcomes (OCs) with Program Outcomes (Pos 1-12).

Course Outcomes (Cos)/Program Outcomes (Pos)	**DSC 1**	**DSC 2**	**DSC 3**	**DSC 4**	**DSC 5**	**DSC 6**	**OE 1**	**OE 2**	**SEC 1**	**SEC 2**
Disciplinary knowledge	X	X	X	X	X	X	X	X		
Communication Skills	X	X	X	X	X	X	X	X	X	X
Critical Thinking	X	X	X	X	X	X	X	X	X	X
Problem Solving	X	X	X	X	X	X	X	X	X	X
Analytical Reasoning	X	X	X	X	X	X	X	X		
Cooperation and Team Work	X	X	X	X	X					
Reflective Thinking	X	X	X	X	X	X	X	X	X	X
Self-Motivated Learning	X	X	X	X	X	X	X	X	X	X
Diversity Management	X	X	X	X	X	X	X	X	X	X

and Inclusive Approach										
Moral and Ethical Awareness Reasoning	X	X	X	X	X	X	X	X	X	X
Lifelong Learning	X	X	X	X	X	X	X	X	X	X

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark **"X"** the intersection cell if a course outcomes addresses a particular program outcome.

BA

O.E III Semester

O.E-3: Freedom Movement in Karnataka (1800-1947)

Course 1		Course 2	
Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester
3	39 or 42	3	39 or 42

Content of Course 1	**39/42 Hrs**
Unit – 1Early Uprisings in Karnataka	12/13
Chapter No.1 DhondyaWagh, Venkatadri Nayaka, KoppalaVeerappa, Deshmuks of Bidar,Shivalingaiah, Sindagi Revolt.	05
Chapter No.2 Rani Chennamma-SangolliRayanna-Nagar Revolt-Kodagu Revolt	04
Chapter No.3 1857 and After-Bedas of Halagali-Naragunda Babasaheb Revolt-Surapura Venkatappa Nayaka-Mundaragi Bheema Rao	04
Unit – 2 Nationalism in Karnataka	13/14
Chapter No.4 Nationalism-Causes for the Rise of Nationalism-Impact of Tilak-Chatrusutras-Gandhi in Karnataka-Belguam Congress1924	05
Chapter No.5 Khadi Movement-KoujalagiHanumantha Rao-HallikeriGudleppa-Tagaduru Ramachandra Rao	05
Chapter No.6 Harijana Movement-HarijanaSevaka Sangha-SardharVeeranna Gowda Patil-Nagamma Patil-Siddamati Mylar	04
Unit – 3 Gandhi Movements in Karnataka	14/15
Chapter No.7 Non-Cooperation Movement-Salt Sathyagraha-Ankola-No Tax Campaign in Uttar Karnataka-Forest Sathyagraha.	05
Chapter No.8 Genesis of Mysore Congress-ShivapuraDhwajaSathyagraha-VidurashwathaTragedy-Patel Mirza Pact-Quit India Movement-Isooru Tragedy.	05
Chapter No.9 Establishment of Responsible Government in Princely Mysore-Mysore ChaloSathyagraha-First Congress Ministry-A Brief Profile of Karnataka Freedom Fighter.	05

Books for Reference

AUTHORS – BOOKS

1. Diwakar.R.R -KaranirakaneyaVeerakathe
2. Diwakar.R.R -KarmayogiHanumantharayaru
3. Diwakar.R.R-Karnataka Through theAges
4. Doreswamy.H.S-HoratadaDittaHejjegalu
5. Hallappa G.S-History of Freedom Movement in Karnataka, Volume-2
6. Handa.R.L-History of Freedom Movement in Princely Mysore
7. Joyish M.N-KarmayogiTagaduru Ramachandra Rayaru
8. Nagarathnamma.S-KarnatakadalliAsahakaraMattuNagareekaKhanunubangaChaluvali
9. Sardar Veerannagowda Patil-AtmaNeevedane
10. Sarojini Sindri and Raghavendra Rao- Women Freedom Fighters in Karnataka
11. Suryanath Kamath (Ed)-SwatantryaSangramadaSamthigalu,
12. Suryanath Kamath-A Concise History ofKarnataka
13. Tee.Tha.Sharma-Karnatakadalli Swatantra Sangrama
14. Veerathappa. K-Mysuru SamsthanadalliSwatantryaChaluvali
15. Veerathappa. K-Readings in Modern History of Mysore Vol-1,2,3
16. PÀ£ÁðlPÀzÀZÀjvÉæ - ¥ÉÆæ.Dgï.gÁdtÚ ªÀÄvÀÄÛqÁ.£ÁUÉÃ±ï J.¹
17. DzsÀÄ¤PÀPÀ£ÁðlPÀzÀZÀjvÉæ - ¥ÉÆæ.Dgï.gÁdtÚ ªÀÄvÀÄÛqÁ.£ÁUÉÃ±ï J.¹

Pedagogy:

Knowledge: the student should acquire knowledge of terms, concepts, political events, ideas, conventions, problems, trends, personalities, chronology and generalizations etc. related to the study of History of Freedom Movement in Karnataka (1800-1947). The student should be able to recall, recognize, show and read the history of the medieval times.

Understanding: The student should develop understanding of terms, facts, important events, trends, etc., related to History of Freedom Movement in Karnataka (1800-1947). The student is able to classify facts, illustrate events,

compare and contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of History of Freedom Movement in Karnataka (1800-1947). It also creates a critical thinking ability among the students. The student will be able to identify, analyse, collect, select, draw and verify the historical facts and figures.

Practical Skills: The subject enables the students to develop practical skills which help in the study and understanding of historical facts. The student should be able to draw maps, charts, diagrams and prepare models, etc.

Learning Outcomes: This course enables students to explore various aspects of political, diplomatic relations of the rulers of medieval times in historical perspective that discusses numerous political practices that have evolved over centuries. The students will gather knowledge about the various dynasties, political diplomacy, results and impact wars and battles the people. It also helps the students to develop the knowledge and awareness about the political ideologies.

Assessment:

Weight age for assessment (in percentage)

Outlines for continuous assessment activities for C1 and C2

Formative Assessment			
Activities	**C1**	**C2**	**Total Marks**
Session Test	10 Marks	10	20
Sessions/Presentations/Activities	10 Marks		10
Case Study/Assignment/Field Work Etc.		10	10
Total			**40**

RANI CHANNAMMA UNIVERSITY

DEPARTMENT OF HISTORY

Fourth Semester

Paper No	Course	Title of the Course	Instruction Hours Per Week	Exam Duration	Marks			Credits
					I.A	ETE	Total	
4.1	DSC-7	History of Medival India	3	2	40	60	100	3
4.2	DSC-8	Cultural History of India (from Saraswati- Indus Culture to 1206 CE)	3	2	40	60	100	3
4.3	OE-4	Freedom Movement in India(1885 to 1947) **OR** Principles and practice of Museology	3	2	40	60	100	3
							Total Credits	9

BA

Semester 4

Title of the Course: **History of Medieval India**	
Total contact Hours: **39-42**	Course Credits: **3**
Formative Assessment Marks: **40**	Duration of ESA/Exam: **60**
Model Syllabus Authors:	Summative Assessment Marks:

Course Pre-requisites(s): Political History Medieval India (from 1206 to 1761).

Course Outcomes (Cos):

At the end of the course the students should be able to:

(Write 3-7 course outcomes. Course outcomes are statements of observable student's actions that serve as evidence of knowledge, skills and values acquired in this course)

- Understand the Political History Medieval India (from 1206 to 1761).Analyse the importance of causes for backwardness of this region.
- Understand the influence of Political History Medieval India (from 1206 to 1761).
- Understand the political, Social, Religious and Cultural history of the region.
- Appreciate the divergent cultural and communal harmony of this region.

Course Articulation Matrix: Mapping of Course Outcomes (OCs) with Program Outcomes (Pos 1-12).

Course Outcomes (Cos)/Program Outcomes (Pos)	**DSC 1**	**DSC 2**	**DSC 3**	**DSC 4**	**DSC 5**	**DSC 6**	**OE 1**	**OE 2**	**SEC 1**	**SEC 2**
Disciplinary knowledge	X	X	X	X	X	X	X	X		
Communication Skills	X	X	X	X	X	X	X	X	X	X
Critical Thinking	X	X	X	X	X	X	X	X	X	X
Problem Solving	X	X	X	X	X	X	X	X	X	X
Analytical Reasoning	X	X	X	X	X	X	X	X		
Cooperation and Team Work	X	X	X	X	X					
Reflective Thinking	X	X	X	X	X	X	X	X	X	X
Self-Motivated Learning	X	X	X	X	X	X	X	X	X	X
Diversity Management and Inclusive Approach	X	X	X	X	X	X	X	X	X	X
Moral and Ethical Awareness Reasoning	X	X	X	X	X	X	X	X	X	X
Lifelong Learning	X	X	X	X	X	X	X	X	X	X

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark **"X"** the intersection cell if a course outcomes addresses a particular program outcome.

BA

Semester 4

DSC-7

Title of the Course: **History of Medieval India**

Course 1 (DSC-7)		**Course 2**	
Number of Theory Credits	Number of Lecture hours/Semester	Number of Theory Credits	Number of Lecture hours/Semester
3	**39 or 42**	**3**	**39 or 42**

Content of Course 1		**39/42 Hours**
Unit -1 Interpreting Medieval Indian History		**14**
Chapter No. 1	Interpreting Medieval Indian History	**2**
Chapter No. 2	Debate on Indian Feudal System	**6**
Chapter No. 3	Interpretation of Peasant State and Society of Medieval India – North India & South India – Agrarian System of Mughal and Vijayanagara Period. Bhakti Movement – Kabir, Nanak, Meera Bai, Sri Chaithanya – Alvars, Nainars.	**6**
Unit -2 Political Structure of Medieval Northern India and Southern India		**14**
Chapter No. 4	Comparative study of Vijayanagara Polity, Delhi Sultanate and Mughals – process of Urbanization in Mughals and Vijayanagara period	**6**
Chapter No. 5	Nature of state in Vijayanagara Kingdom, Delhi Sultanate and Mughal dynasties	**6**
Chapter No. 6	Military Technology of Mughals and Vijayanagara dynasties – Development of Science & Technology in Medieval India	**4**
Unit -3 Minor Kingdoms of North India		**14**
Chapter No. 7	Rajaputs, GurjaraPratiharas, Palas, Paramaras	**6**
Chapter No. 8	Vijayanagaradynasy – Amaranayaka System – Creation of Wealth.	**6**
Chapter No. 9	The rise of the Marathas – Shivaji and his administration – AsthaPradhana System	**4**

	Map Extent of Vijayanagara Empire under Krishnadevaraya, Extent of Mughal Empire under Akbar, Important trade Centers of Medieval India : 1. Agra 2. Fatehpur Sikri 3.Delhi 4.Mewar 5.Hampi 6. Honnavara 7.Bhatkal 8.Raighad 9.Tirupati 10. Anegondi	

Books for Reference:

1. Anil Chandra Banarjee — History of India
2. S.C.Rayachoudhary — History of Medieval India (From 1000-1707 C.E.)
3. Sarkar, Jadunath — Shivaji and his Times
4. Sharma S.R. — Mughal Administration
5. Tripathi R.P. — Rise and Fall of Mughal Empire
6. Wolseley Haig and Richard Burn — Cambridge History of India Vo. IV
7. Khosala, R.P. — Mughal Kingship and Nobility
8. Srivastav A.L. — Mughal Empire
9. A.C.Banarjee — New History of Medieval India
10. Satish Chandra — History of Medieval India
11. Banerjee A.C. — The State and Society in Northern India (1206 -1526 C.E.)
12. Kulkarni A.R. — Maharashtra in the Age of Shivaji
13. R.C.Majumdar (Ed.) — The Delhi Sultanate
14. R.C.Majumdar (Ed.) — The Mughal Empire
15. ¥ÉÆæ.Dgï.gÁdtÚ ªÀÄvÀÄÛ qÁ.J.¹.£ÁUÉÃ±ï ªÀÄzsÀåPÁ°Ã£À¨sÁgÀvÀzÀEwºÁ¸À

Pedagogy:

Knowledge: the student should acquire knowledge of terms, concepts, political events, ideas, conventions, problems, trends, personalities, chronology and generalizations etc. related to the study of History of Medieval India. The student should be able to recall, recognize, show and read the history of the medieval times.

Understanding: The student should develop understanding of terms, facts, important events, trends, etc., related to medieval India. The student is able to classify facts, illustrate events, compare and contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of medieval Indian history. It also creates a critical thinking ability among the students. The student will be able to identify, analyse, collect, select, draw and verify the historical facts and figures.

Practical Skills: The subject enables the students to develop practical skills which help in the study and understanding of historical facts. The student should be able to draw maps, charts, diagrams and prepare models, etc.

Learning Outcomes: This course enables students to explore various aspects of political, diplomatic relations of the rulers of medieval times in historical perspective that discusses numerous political practices that have evolved over centuries. The students will gather knowledge about the various dynasties, political diplomacy, results and impact wars and battles the people. It also helps the students to develop the knowledge and awareness about the political ideologies.

Assessment:

Weight age for assessment (in percentage)

Outlines for continuous assessment activities for C1 and C2

Formative Assessment			
Activities	**C1**	**C2**	**Total Marks**
Session Test	10 Marks	10	20
Sessions/Presentations/Activities	10 Marks		10
Case Study/Assignment/Field Work Etc.		10	10

Total			**40**

BA
Semester 4
DSC-8

Course Title:**Cultural History of India (From Saraswati - Indus Culture to 1206 CE).**	
Total contact Hours: **39-42**	Course Credits: **3**
Formative Assessment Marks: **40**	Duration of ESA/Exam: **60**
Model Syllabus Authors:	Summative Assessment Marks:

Course Pre-requisites(s): Cultural History of India (From Saraswati - Indus Culture to 1206 CE).

Course Outcomes (Cos):

At the end of the course the students should be able to:

(Write 3-7 course outcomes. Course outcomes are statements of observable student's actions that serve as evidence of knowledge, skills and values acquired in this course)

- Understand the History of Cultural History of India (From Saraswati - Indus Culture to 1206 CE).Analyse the importance of causes for backwardness of this region.
- Understand the influence of History of Cultural History of India (From Saraswati - Indus Culture to 1206 CE).
- Understand the political, Social, Religious and Cultural history of the region.
- Appreciate the divergent cultural and communal harmony of this region.

Course Articulation Matrix: Mapping of Course Outcomes (OCs) with Program Outcomes (Pos 1-12).

Course Outcomes (Cos)/Program Outcomes	**DSC 1**	**DSC 2**	**DSC 3**	**DSC 4**	**DSC 5**	**DSC 6**	**OE 1**	**OE 2**	**SEC 1**	**SEC 2**

(Pos)										
Disciplinary knowledge	X	X	X	X	X	X	X	X		
Communicati on Skills	X	X	X	X	X	X	X	X	X	X
Critical Thinking	X	X	X	X	X	X	X	X	X	X
Problem Solving	X	X	X	X	X	X	X	X	X	X
Analytical Reasoning	X	X	X	X	X	X	X	X		
Cooperation and Team Work	X	X	X	X	X					
Reflective Thinking	X	X	X	X	X	X	X	X	X	X
Self-Motivated Learning	X	X	X	X	X	X	X	X	X	X
Diversity Management and Inclusive Approach	X	X	X	X	X	X	X	X	X	X
Moral and Ethical Awareness Reasoning	X	X	X	X	X	X	X	X	X	X
Lifelong Learning	X	X	X	X	X	X	X	X	X	X

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark **"X"** the intersection cell if a course outcomes addresses a particular program outcome.

BA

Semester 4

CULTURAL HISTORY OF INDIA (From Saraswati - Indus culture to 1206 CE)

Objectives in this lesson

students investigate various facets of Indian culture. Throughout the chapter, emphasis will be on the concept and importance of Indian culture through various ages of India. After studying this lesson you will be able to:

- understand the concept and meaning of culture;
- establish the relationship between culture and civilization;
- establish the link between culture and heritage;
- discuss the role and impact of culture in human life.
- describe the distinctive features of Indian culture;
- identify the central points and uniqueness of Indian culture;
- explain the points of diversity and underlying unity in it; and
- trace the influence and significance of geographical features on Indian culture.

CONTENT OF COURSE	42 HOURS
UNIT-I Indian Culture: An Introduction	
CHAPTER-1 Characteristics of Indian culture.	06
CHAPTER-2 Significance of Geography on Indian Culture.	06
CHAPTER-3 Religion and Philosophy in India: Ancient Period: Pre-Vedic and Vedic Religion, Buddhism and Jainism, Indian philosophy.	06
UNIT-II A Brief History of Indian Arts and Architecture	
CHAPTER-4 Indian Languages and Literature – Nagari – Devanagari,Grantha – Dravidian languages – Kannada.	05
CHAPTER-5 Evolution of script and languages in India: Harappan Script and Brahmi Script.	03

CHAPTER-6 Short History of the Sanskrit literature: The Vedas, and Upanishads , Epics: Ramayana and Mahabharata - History of Buddhist and Jain Literature in Pali, Prakrit .	04
UNIT-IIIART&ARCHITECTURE	
CHAPTER-7 Indian Art & Architecture: Gandhara School and Mathura School of Art; - Hindu Temple Architecture, Buddhist Architecture- Indian Painting Tradition: ancient painting at Ajantha.	04
CHAPTER-8 Performing Arts: Divisions of Indian classical music: Hindustani and Carnatic, -Dances of India: Various Dance forms: Classical and Regional,	04
CHAPTER-9 Indian Culture in South East Asia	04

Books for Reference

1. Gore, M. S., Unity in Diversity: The Indian Experience in Nation-Building, Rawat Publication, Jaipur, 2002.

2. Kabir, HumayunN, National Information and Publications Ltd., Mumbai, 1946.

3. Malik, S. C., Understanding Indian Civilisation : A Framework of Enquiry, Indian Institute of Advanced Study, Simla, 1975.

4. Mukerji, D. P., Sociology of Indian Culture, RawatPublications,Jaipur,1948/1979.

5. Pandey, Govind Chandra, Foundations of Indian Culture, Books and Books,New Delhi, 1984.

Pedagogy:

Knowledge: The student should acquire knowledge of terms, concepts, political events, ideas, conventions, problems, trends, personalities, chronology and generalizations etc. related to the study of Cultural History of India (From Saraswati - Indus Culture to 1206 CE).The student should be able to recall, recognize, show and read the history of the region.

Understanding: The student should develop understanding of terms, facts, important events, trends, etc. related to the history of Cultural History of India (From Saraswati - Indus Culture to 1206 CE). The student is able to classify facts, illustrate events, compare and contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of History of Cultural History of India (From Saraswati - Indus Culture to 1206 CE).

It also creates a critical thinking ability among the students. The student will be able to identify, analyse, collect, select, draw and verify the historical facts.

Practical Skills: The subject enables the students to develop practical skills which help in the study and understanding of historical facts. The student should be able to draw maps, charts, diagrams and prepare models, etc.

Learning Outcomes: This course enables students to explore various aspects of political, Culture and Heritage of Cultural History of India (From Saraswati - Indus Culture to 1206 CE) in historical perspective that discusses numerous cultural practices that have evolved over centuries. The students will gather knowledge about the cultural heritage, cultural forms and cultural expressions performing arts, fairs and festivals.

Assessment:Weight age for assessment (in percentage)

Outlines for continuous assessment activities for C1 and C2

Formative Assessment			
Activities	**C1**	**C2**	**Total Marks**
Session Test	10 Marks	10	20
Sessions/Presentations/Activities	10 Marks		10
Case Study/Assignment/Field Work Etc.		10	10
Total			**40**

BA - IV SEMESTER

OPEN ELECTIVE

Course Title:**Freedom Movement in India (1885-1947)**	
Total contact Hours: **39-42**	Course Credits: **3**
Formative Assessment Marks: **40**	Duration of ESA/Exam: **60**
Model Syllabus Authors:	Summative Assessment Marks:

Course Pre-requisites(s): History of Freedom Movement in India (1885-1947).

Course Outcomes (Cos):

At the end of the course the students should be able to:

(Write 3-7 course outcomes. Course outcomes are statements of observable student's actions that serve as evidence of knowledge, skills and values acquired in this course)

- Understand the History of Freedom Movement in India (1885-1947). Analyse the importance of causes for backwardness of this region.
- Understand the influence of History of Freedom Movement in India (1885-1947).
- Understand the political, Social, Religious and Cultural history of the region.
- Appreciate the divergent cultural and communal harmony of this region.

Course Articulation Matrix: Mapping of Course Outcomes (OCs) with Program Outcomes (Pos 1-12).

Course Outcomes (Cos)/Program Outcomes	**DSC 1**	**DSC 2**	**DSC 3**	**DSC 4**	**DSC 5**	**DSC 6**	**OE 1**	**OE 2**	**SEC 1**	**SEC 2**

(Pos)										
Disciplinary knowledge	X	X	X	X	X	X	X	X		
Communicati on Skills	X	X	X	X	X	X	X	X	X	X
Critical Thinking	X	X	X	X	X	X	X	X	X	X
Problem Solving	X	X	X	X	X	X	X	X	X	X
Analytical Reasoning	X	X	X	X	X	X	X	X		
Cooperation and Team Work	X	X	X	X	X					
Reflective Thinking	X	X	X	X	X	X	X	X	X	X
Self-Motivated Learning	X	X	X	X	X	X	X	X	X	X
Diversity Management and Inclusive Approach	X	X	X	X	X	X	X	X	X	X
Moral and Ethical Awareness Reasoning	X	X	X	X	X	X	X	X	X	X
Lifelong Learning	X	X	X	X	X	X	X	X	X	X

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark **"X"** the intersection cell if a course outcomes addresses a particular program outcome.

BA
O.E IV Semester
O.E-4: Freedom Movement in India (1885-1947)

Course 1		Course 2	
Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester
3	39 or 42	3	39 or 42

Content of Course -1	**39/42 Hrs**
Unit – 1Indian Nationalism	12/14
Chapter No.1 Genises of Indian National Congress-Moderate-Objectives-Techniques-Partion of Bengal-Swadeshi Movement	05
Chapter No.2 Split of Congress-Extremists-Objectives-Techniques, Lalalajpat Ray-Balagandharanatha Tilak-Bipan Chandra Pal-Arabindo Ghosh	05
Chapter No.3 Revolutionary Movement-Bhagat Singh-Chandra Sheker Azad-Rajaguru, Sukh Dev. Revolutionary Women-Kumudini Mitra Busu – Madam BhikajiCama – Preethi LathaWaddedar	04
Unit – 2 1914 and After	10/12
Chapter No.4 First World War and Indian Nationalism	04
Chapter No.5 Home Rule Movement-Balagangadharanatha Tilak and AnniBesant	03
Chapter No.6 Luknow Pact-1916-Rowllet Act-Jalliyanwala Bagh Massacre	04
Unit – 3 Gandhian Era	15/17
Chapter No.7 Early Experiments of Gandhi-Non Co-operation Movement-Constructive Programmes-Swaraj Party-Siman Commission	06
Chapter No.8 Lahore Congress-Salt Sathyagraha-Round Table Conference-Communal Award-Poona Pact-Subaschandra Bose-INA	06
Chapter No.9 Partion and Independence: Growth of Communalism Two Nation Theory-August offer-Crips Proposal-Quit India Movement-Cabinet Mission-Mount Batten Plan-1947 Indian Independence Act.	05

Books for Reference:

1. Asharani- Gandhian Non-Violence and Indian Freedom Struggle
2. Bipan Chandra- Indian Struggle for Independence
3. Bipan Chandra-Communalism and Modern India
4. Bukshi S.R-Gandhi and Dandi March
5. Dominique Larry Collins-Freedom at Midnight
6. Judith M Brown-Gandhi's Rise to Power, Indian Politics 1915-22
7. Lakshmi Jain- History of Freedom Movement in India
8. Moulana Abdul Khalam Azad-India Wins Freedom
9. Richard Sesan and Sekhar Bandyopadhyay- Congress and Indian Nationalism -From Plassey to PartionSenleyWolfort
10. Shankara Narayana Rao V.S-SwatantradaGuriBharatada Dari
11. Shankara Narayana Rao V.S-SwatantrayaGangeyaSaviraToregalu
12. SubasChndra Bose-The Indian Struggle
13. Sumit Sarkar-Modern India
14. Tharachand- History of the Freedom Movement in India
15. DzsÀÄ¤PÀ¨sÁgÀvÀzÀEwºÁ¸À - ¥ÉÆæ.Dgï.gÁdtÚ ªÀÄvÀÄÛqÁ.£ÁUÉÃ±ï J.¹

Pedagogy:

Knowledge: The student should acquire knowledge of terms, concepts, political events, ideas, conventions, problems, trends, personalities, chronology and generalizations etc. related to the study of Freedom Movement in India (1885-1947).The student should be able to recall, recognize, show and read the history of the region.

Understanding: The student should develop understanding of terms, facts, important events, trends, etc. related to the history of Freedom Movement in India (1885-1947). The student is able to classify facts, illustrate events, compare and contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of History of Freedom Movement in India (1885-1947). It also creates a critical thinking ability among the students. The student will be able to identify, analyse, collect, select, draw and verify the historical facts.

Practical Skills: The subject enables the students to develop practical skills which help in the study and understanding of historical facts. The student should be able to draw maps, charts, diagrams and prepare models, etc.

Learning Outcomes: This course enables students to explore various aspects of political, Culture and Heritage of Freedom Movement in India (1885-1947) in historical perspective that discusses numerous cultural practices that have evolved over centuries. The students will gather knowledge about the cultural heritage, cultural forms and cultural expressions performing arts, fairs and festivals.

Assessment:Weight age for assessment (in percentage)

Outlines for continuous assessment activities for C1 and C2

Formative Assessment			
Activities	**C1**	**C2**	**Total Marks**
Session Test	10 Marks	10	20
Sessions/Presentations/Activities	10 Marks		10
Case Study/Assignment/Field Work Etc.		10	10
Total			**40**

BA

Semester 4

OE-04

Course Title: **Principles and Practice of Museology**	
Total contact Hours: **39-42**	Course Credits: **3**
Formative Assessment Marks: **40**	Duration of ESA/Exam: **60**
Model Syllabus Authors:	Summative Assessment Marks:

Course Pre-requisites(s): Principles and Practice of Museology

Course Outcomes (Cos):

At the end of the course the students should be able to:

(Write 3-7 course outcomes. Course outcomes are statements of observable student's actions that serve as evidence of knowledge, skills and values acquired in this course)

- Understand the History of Principles and Practice of Museology.
- Analyse the importance of causes for backwardness of this region.
- Understand the influence of History of Principles and Practice of Museology.
- Understand the political, Social, Religious and Cultural history of the region.
- Appreciate the divergent cultural and communal harmony of this region.

Course Articulation Matrix: Mapping of Course Outcomes (OCs) with Program Outcomes (Pos 1-12).

Course Outcomes (Cos)/Program Outcomes (Pos)	**DSC 1**	**DSC 2**	**DSC 3**	**DSC 4**	**DSC 5**	**DSC 6**	**OE 1**	**OE 2**	**SEC 1**	**SEC 2**
Disciplinary knowledge	X	X	X	X	X	X	X	X		
Communication Skills	X	X	X	X	X	X	X	X	X	X
Critical Thinking	X	X	X	X	X	X	X	X	X	X
Problem Solving	X	X	X	X	X	X	X	X	X	X
Analytical Reasoning	X	X	X	X	X	X	X	X		
Cooperation and Team Work	X	X	X	X	X					
Reflective Thinking	X	X	X	X	X	X	X	X	X	X
Self-Motivated Learning	X	X	X	X	X	X	X	X	X	X
Diversity Management and Inclusive Approach	X	X	X	X	X	X	X	X	X	X
Moral and Ethical Awareness Reasoning	X	X	X	X	X	X	X	X	X	X
Lifelong	X	X	X	X	X	X	X	X	X	X

Learning										

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark **"X"** the intersection cell if a course outcomes addresses a particular program outcome.

BA

Semester 4

PRINCIPLES AND PRACTICE OF MUSEOLOGY

Content of Course 1	**37 Hours**
UNIT -1 Introduction to Musicology	
Chapter-I	**5**
History of Museums and Collection - Definition and scope of Museum.	
Chapter-II	**4**
General Principles of Museums. Functions of Museums	
Chapter-III	**4**
Museum Movement in Indian subcontinent, Europe, and Western Hemisphere.	
UNIT -2 : Functions and types Museums	
Chapter-IV	**5**
Functions of Museums: (a.) Collection (b.) Identification (c.) Preservation (d.) Documentation (e.) Presentation (Exhibition) (f.) Research (g.) Educational activities	
Chapter-V	**4**
Various Types of Museums: Archaeology museums, Art museums History museums, Maritime museums ,Military and war museums, Science museums	

Chapter-VI	**3**
New trends in Museums and Legislations concerning Museums.	
UNIT -3 : Management and Administration	
Chapter-VII	**5**
Museum Management and Administration: 1. Location and Surrounding of Museums (a.) Selection of site (b.) Surrounding (c.) Use of space, design (d.) Planning (e.) Construction of museum (f.) Special Problems (war. flood, fire & earthquake etc.).	
Chapter -VIII	**3**
Museum Conservation and Preservation. 1. General Principles of Conservation (a) Preventive measures (b.) Curative measures	
Chapter -IX	**4**
Classification of Museums based on the nature of collections, concepts of eco Museum, Personallia Museums, Children Museums, and Virtual Museums.	

Books for Reference

1. Dr. V. Jayaraj - Museology - Heritage Management - Seawaves Printers, Chennai - 86, 2005
2. M.L. Nigam - Fundamentals of Museology, Deva Publicaitons, Hyderabad, 1985
3. Grace Morley - The Museum and its functions, Ed. Saifur Rahman dar, Lahore Museum, Lahore, 1981
4. Dr. V. Jayaraj - Handbook on Conservation in Museums Published by the Commissioner of Museums, Chennai, 1995
5. J. Smifa, J. Baxi and Vinod P. Dwivedi - Museum Storage, Modern Museum, V.P. Abbhinav Publications, New Delhi, 1985
6. Agarwala. V.S. - Museum studies, PrithiviPrakashan, Varanashi, 1978
7. Grace Morley - Museum today, Lucknow, 1981

Pedagogy:

Knowledge: The student should acquire knowledge of terms, concepts, political events, ideas, conventions, problems, trends, personalities, chronology and generalizations etc. related to the study of History of Principles and Practice of Museology. The student should be able to recall, recognize, show and read the history of the region.

Understanding: The student should develop understanding of terms, facts, important events, trends, etc. related to the History of Principles and Practice of Museology.The student is able to classify facts, illustrate events, compare and contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of Principles and Practice of Museology. It also creates a critical thinking ability among the students. The student will be able to identify, analyse, collect, select, draw and verify the historical facts.

Practical Skills: The subject enables the students to develop practical skills which help in the study and understanding of historical facts. The student should be able to draw maps, charts, diagrams and prepare models, etc.

Learning Outcomes: This course enables students to explore various aspects of political, Culture and Heritage and also the cultural diversity of Principles and Practice of Museology in historical perspective that discusses numerous cultural practices that have evolved over centuries. The students will gather knowledge about the cultural heritage, cultural forms and cultural expressions performing arts, fairs and festivals.

Assessment:Weight age for assessment (in percentage)

Outlines for continuous assessment activities for C1 and C2

Formative Assessment			
Activities	**C1**	**C2**	**Total Marks**
Session Test	10 Marks	10	20
Sessions/Presentations/Activities	10 Marks		10
Case Study/Assignment/Field		10	10

Work Etc.			
Total			**40**

Rani Channamma University, Belagavi

B.A. in History

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SYLLBUS

DISCIPLINE SPECIFIC CORE COURSE (DSCC) FOR SEM V &VI

SKILL ENHANCEMENT COURSE Internship/Project Report for UG VI Sem

With Effect from 2023-24

AS PER NEP-2020

Structure for History Discipline

Core paper no.	Paper Title	Credit	No. of Teaching Hours/ Week	Total Marks/ Assessment
V Semester				
DSC-9	History of India. (CE1761-CE 1857)	4	4	100 (60+40)
DSC-10	European History	4	4	100 (60+40)
DSC-11	Socio -Religious Reforms and Indian National Movement [1828-1947]	4	4	100 (60+40)
VI Semester				
DSC-12	Contemporary History of India [1947- 1990]	4	4	100 (60+40)
DSC-13	Modern Europe [1914-1990]	4	4	100 (60+40)
DSC-14	History of Freedom Movement and Unification in Karnataka	4	4	100 (60+40)
Internship/Project	----------	2	-	50

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 9-14)
Programe Outcomes (Pos 9-14)

Programe Outcome	DSC-9	DSC-10	DSC-11	DSE-1	DSC-12	DSC-13	DSC-14	DSE-2
Disciplinary knowledge	Y	Y	Y	Y	Y	Y	Y	Y
Professional skills	Y	Y	Y	-	Y	Y	Y	Y
Application of skills to chosen specialization	Y	Y	Y	Y	Y	Y	Y	-
Experimental learning and critical thinking	Y	Y	Y	Y	Y	-	Y	-
Application on to administration related problems	Y	Y	Y	Y	Y	Y	Y	Y
Knowledge of e resources and social media	Y	Y	Y	-	Y	Y	Y	Y
Skills in scientific writing and effective presentation	Y	Y	Y	-	-	-	Y	-
Critical evaluation of theoretical approaches	Y	Y	Y	Y	Y	Y	Y	Y

Semester V

Course Title: History of India. (CE1761-CE 1857)	
Semester: V	**Course Code:** DSC – 9
Total Contact Hours: 60	**Course Credits: 4**
No. of Teaching Hours/Week:4	**Duration of ESA/Exam: 2 Hours**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60+40=100**

Course Objectives:

This course is designed to

- Student will be able to formulate basis of modern India through different concepts like modernity, Rule of Law etc
- Students will be able to analyze the process of rise modern India and its foundation made by social reformer and freedom fighters.
- Students will be able to analyze social background of Indian Nationalism
- Students will be able to categorize different school of thoughts about Modern India history
- Students will be able to illustrate rise and growth of Economic Nationalism in India.

Learning Outcome

At the end of the course the students shall –

- Be in a position to understand the Dynamics of expansion, with special reference to Bengal, Mysore, Awadh, Punjab.
- Be familiar with Land revenue systems- Permanent, Ryotwari and Mahalwari system, Commercialization of Agriculture- Consequences.
- Be in a position to understand the Drain of Wealth-causes and consequences, Growth of modern industry.

Unit	Contents of Course- DSC- 9	60 Hours
Unit-I	**Chapter-1:** Indian Polity, Society and Economy in mid-18th century. Mercantile Policies and Indian Trade. **Chapter-2:** Colonial Expansion-Bengal and Punjab, Battle of Plassey and Buxar. Anglo – Mysore Wars and Anglo – Maratha Wars. **Chapter-3:** Imperial Ideologies and Psyche: Orientalists Construction of India and the Utilitarian's.	**15 Hours**
Unit-II	**Chapter-4:** British Administration and Law. The Spread of English Education-Lord Macauley's Minutes. **Chapter-5**: The New Revenue Land Settlements-Permanent land settlement, Mahalwari and Ryotwari **Chapter-6:** Commercialization of Agriculture.	**15 Hours**
Unit- III	**Chapter-7:** Deindustrialization – British Industrial Policy **Chapter-8:** Economic Impact of the Colonial Rule - Emergence of Middlemen, Moneylenders, absentee Landlords, landless labours **Chapter-9:** Social Discrimination and Colonial Rule - Caste discrimination, Untouchability and Gender discrimination- Kulinism in Bengal, Sati system, Female Infanticide and Widowhood.	**15 Hours**
Unit- IV	**Chapter-10:** Tribal and Peasant Movements in Colonial India **Chapter-11:** Revolt of 1857: Causes, Courses and Results **Chapter-12: Map Topics;** 1) Main Centers of Colonial Period in India Or 2) Main Centers of the Great Revolt of 1857	**15 Hours**

Suggested Readings References

References	
1	Bandopadhyaya, Sekhara (2004), From Plassey to Partition: A History of Modern India, Orient Blackswan.
2	Bayly, C.A. (1988), Indian Society and The Making of British Empire, Cambridge University Press
3	Bhatia, B. M. (1967), Famines in India, Asia Publishing House.
4	Brown, Judith M. (1972), Gandhi's Rise to Power: Indian Politics, 1915-1922, Cambridge University Press.
5	Chandra, Bipan, (2010), Rise and Growth of Economic Nationalism in India, Har Anand
6	Chaudhuri, B.B. (2008), Peasant History of Late Pre-Colonial and Colonial India, Pearson Education.
7	Gadgil, D. R. (1939), Industrial Evolution of India Marshal, P.J. (ed.) : Eighteenth Century in Indian History,Oxford University Press, Delhi, 2007
8	Hasan, Mushirul (1991), Nationalism and Communal Politics in India: 1885-1932, Manohar.

Pedagogy: The course shall be taught through the lectures, interactive session, outdoor visits and week- end seminars.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	**40**

Course Title: European History	
Semester: V	**Course Code:** DSC-10
Total Contact Hours: 60	**Course Credits:** 4
No. of Teaching Hours/Week:4	**Duration of ESA/Exam:** 2 Hours
Formative Assessment Marks: 40	**Summative Assessment Marks:** 60+40=100

Course Objectives:

Course Objectives

• To study the history of a region that is often left out of, or given short shrift in, mainstream "South Indian History"

Unit	Contents of Course- DSC-10	60 Hours
	The French Revolution and Napoleonic Era (1789-1815)	
Unit-I	**Chapter-1:** The causes of French Revolution – The consequences of Revolution **Chapter-2:** Napoleon rises to power - Creation of Empire **Chapter-3:** The Continental system - The fall of Napoleon	**15 Hours**
	The Concert of Europe (1815-1830)	
Unit-II	**Chapter-4:** The Congress of Vienna **Chapter-5:** Metternich's Era **Chapter-6:** The Concert of Europe and Congress System Balance of Power	**15 Hours**
	Forces of Continuity and Change in Europe (1815-1848)	
Unit-III	**Chapter-7:** Nationalism –Liberalism - Romanticism **Chapter-8**: Socialism - Industrial Revolution **Chapter-9:** Colonialism –Consequences	**15 Hours**
	The Eastern Question (1804-1856)	
Unit-IV	**Chapter-10:** The nature of the Eastern question **Chapter-11:** The Crimean War **Chapter-12:** Russo Turkish War 1877 - Consequences	**15 Hours**

Exercise:

• Students can be asked to study the main theories and interpretations on South Indian Civilization.

Suggested Readings

References	
1	A History of Modern Europe (1789-1991) H.L. Peacock,
2	The Struggle for Mastery in Europe: 1848-1918 A.J.P Taylor
3	The Cold War: Ideological Conflict or Power Struggle Normal A. Grabener
4	The USSR: A Share History Vladimir Polrtayen,
5	Development in Russian Politics Stephen White
6	Mastering Modern European History Stuart Miller,
7	A Text Book of European History by Southgate, G.W.
8	Aspects of European History 1789-1980. Stephen J. Lee
9	Europe Since Napoleon Thompson, D
10	European Union: European politics. Tim Bale.

Pedagogy:

The course shall be taught through the Lectures/ tutorials/assignments/self-study/seminars.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	**40**

Course Title: Socio - Religious Reforms and Indian National Movement

Semester: V	Course Code: DSC-11
Total Contact Hours: 60	**Course Credits: 4**
No. of Teaching Hours/Week:4	**Duration of ESA/Exam: 2 Hours**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60+40=100**

Course Outcomes (COs): At the end of the course students will be able to :

CO1**:** Assess the contributions of social reformers of renaissance period.
CO2: In additional social transformation work and activities of social reformers will inspire the youth and make them enterprising.
CO3: Further of the study of Aligarh, Adi Dharma and Namo Shudra movements will alsoInspire the modernization and advancement of the respective communities.
CO4: Trace the course, ideology and methods of Liberal and Radical nationalists.CO5: Understand emergence of mass politics during Gandhian era
CO6: Understands the process and impact of the constitutional development

Unit	Title: Socio - Religious Reforms and Indian National Movement	56.hrs/ sem
Unit I	**Chapter-1:** Reform Movements of 19th Century –Rajaram Mohan Roy-Brahmo Samaj, Dayanand Saraswati-Arya Samaj and Swamy Vivekanand **Chapter-2:** Aligarh Movement, Theosophical Society and Prathana Samaj **Chapter-3:** Adi Dharma movement in Punjab and Namo-Shudra Movement in Bengal	**14Hour**
UnitII	**Chapter-4:** Upliftment of the Oppressed Communities – Satya ShodhakSamaj movement-Mahatma Phule and Chh.Shahu Maharaj. **Chapter-5:** Ezava Movement of Sri. Narayan Guru and Self Respect Movement of Periyar Ramaswamy-Nalwadi Krishanaraj Wodeyar **Chapter-6:** Social Transformation Movement of Dr. B R Ambedkar-Empowerment of Women and Labors.	**14Hour**
UnitIII	**Chapter-7**: Indian National Movement (1885- 1907) –Rise of Nationalism – Ideology and Methods of Moderates-Anti- Partition and Swadeshi Movement. **Chapter-8:** Extremist Nationalism [1907-1919]– Method and Ideology - Home Rule movement **Chapter-9:** Gandhiji Era–Non-Co-operation movement, Civil Dis-obedience movement and Quit India movement.	**14Hour**
UnitIV	**Chapter-10:** Constitutional Development– 1909,1919 Acts andNehru Report (1932) **Chapter-11:** Round Table Conferences –Communal Award-Poona Pactand Government of India Act of 1935 **Chapter-12:** Cabinet Mission Plan-Mountbatten Plan-Partition of India – Indian Independence Act (1947) **Map Topics:** 1) Main places of the Non-Co-operation Movement inIndia Or 2) Main centers of the Quit India Movement	**14Hour**

References:

1. Bipin Chandra:*Nationalism and Colonialism in India*
2. Percival Spear:*Oxford History of Modern India (1740-1975)*
3. Sumith Sarkar:*Modern India (1985-1947)*
4. A.R. Desai:*Social Background of Indian Nationalism*
5. Hassan Imam: *Indian National Movement*
6. Gopal S.: *British Policy in India (1858 -1905)*
7. Srinivas M.N.: *Social Change in Modern India*
8. Anil Seel: *The Emergence of Indian Nationalism*
9. Tarachand: Freedom *Movement in India(Four volumes), Government of India Publication, NewDelhi*
10. R.N. Agarwal : *Indian National Movement and Constitutional Development*
11. Bipan Chandra-*India's Struggle for Independence 1857–1947*, Penguin Books NewDelhi 1997.
12. Girja Shankar; *Socialist Trends in Indian National Movement*, Meerut, 1987.
13. R.S.Sharma (Ed); *Indian Society: Historical Probing's,* PPH, New Delhi, 1974.
14. P.N. Chopra and Others; *A Social, Cultural and Economic History of India*,Vol.III, Macmillan,Delhi, 1974.
15. V.P. Varma; *Modern Indian Political Thought*, L.N. Agarwal, Agra, 2002.
16. Keer Dhananjay: *Mahatma Jyoti Rao Phule – Father of Indian Social Revolution, Bombay, 1974.*
17. Patil, P.G. (Trans.)**;** *Collected works of Mahatma Jotirao Phule* Vol-I, and II, Government ofMaharashtra Publication, Bombay, 1991.
18. Madhavan Ayyappath (Translated):*Narayan Guru: Bharatiya Vidya Bhavan,* Mumbai,1978.
19. Sundara Raju & R Hardgrave Jr: *Religion and Society-selections from Periyra'sSpeeches andWritings,* (Translated) Emerald Publishers, Madras,1994.
20. Vasanta Moon (Ed) Dr.*Babasaheb Ambedkar Writing and speeches,* Vol.1-18Government ofMaharashtra Publication, Mumbai.
21. Brown JudithM.(1972) : *Gandhi's Riseto Power: Indian Politics,1915-1922,* CambridgeUniversity Press
22. Hasan, Mushirul (1991): *Nationalism and Communal Politics in India:1885-1932*, Manohar.

Formative Assessment for Theory

Assessment Occasion/type	Marks
InternalAssessmentTest1	10
InternalAssessmentTest2	10
Quiz/Assignment/Small Project	10
Seminar	10
Total	**40Marks**

Semester VI

Course Title: Contemporary History of India from 1947-1990s	
Semester: VI	**Course Code:** DSC-12
Total Contact Hours: 60	**Course Credits:** 4
No. of Teaching Hours/Week:4	**Duration of ESA/Exam:** 2 Hours
Formative Assessment Marks: 40	**Summative Assessment Marks:** 60+40=100

Unit	**Contents of Course**- DSC-12	**60 Hours**
Unit-I	**Chapter-1:** Political legacy of Colonialism. **Chapter-2:** Economic and Social Legacy of Colonialism. **Chapter-3:** National movements: Its significance, Value and Legacy.	**15 Hours**
Unit-II	**Chapter-4:** Framing of Indian Constitution - Constituent Assembly – Draft Committee Report – declaration of Indian Constitution, Indian constitution- Basic Features and Institutions. **Chapter-5:** The Initial Years: Process of National Consolidation and Integration of /Indian States – Role of Sardar Patel – Kashmir issue, Indo – Pak war 1948; the Linguistic Reorganization of the States, Regionalism and Regional Inequality. **Chapter-6:** Political development in India since Independence.	**15 Hours**
Unit-III	**Chapter-7:** Politics in the States: Tamil Nadu, Andhra Pradesh, West Bengal and Jammu and Kashmir, the Punjab Crisis. **Chapter-8:** The Post-Colonial Indian State and the Political Economy of Development: An Overview **Chapter-9**: Foreign policy of India since independence.	15 Hours
Unit-IV	**Chapter-10**: Indian Economy, 1947-1965: the Nehruvian Legacy Indian Economy 1965-1991, Economic Reforms since 1991 and LPG. **Chapter-11**: Caste, Untouchability, Anti-caste Politics and Strategies, Revival and Growth of Communalism. **Chapter-12**: Land Reforms: Zamindari Abolition and Tenancy Reforms, Ceiling and the Bhoodan Movement, Cooperatives and an Overview, Agriculture Growth and the	15 Hours
	Green Revolution and Agrarian Struggles Since Independence	

Exercise:

- Examine the impact of colonial legacy on the post-independent Indian Political System
- Discuss the political legacy under colonialism in India.
- Highlight the different factors of political legacy of colonialism
- What is legacy? Write a note on political legacy of colonialism.
- Critically examine the important legacies in the form of political legacy of British Colonialism in India
- Discuss the economic legacy of British Colonialism
- High the different fields of economic legacy of colonialism in India.
- Make an analysis on the social legacy of British colonialism.

Suggested Readings

References	
1	South Indian Studies : Ed. By Dr.H. M. Nayak & B.R. Gopal
2	History of South India : K.A. Neelakantha Sastry

3	Karnataka Through the Ages - R. R. Diwakar
4	Karnataka Samskriti Darshana - M.V. Krishna Rao and T. Keshava Bhat
5	Karnataka Parampare - Ed. By R. R. Diwakar
6	Dakshina Bharatada Ithihasa - B. Sheik Ali G. R. Rangaswamaiah
7	Karnataka Samskritika Ithihasa – Tipperudraswamy
8	Karnatakadalli Chitrakale - Shivarama Karantha
9	Karnataka Parampare - Ed. By R. R. Diwakar
10	Bharatiya Rangabhoomi - Adya Rangacharya

Pedagogy:
The course shall be taught through the lectures, assignments, group discussions and week- end seminars.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	**40**

Discipline Specific Course (DSC)-13

Course Title: European History	
Semester: VI	**Course Code: DSC-13**
Total Contact Hours: 60	**Course Credits: 4**
No. of Teaching Hours/Week:4	**Duration of ESA/Exam: 2 Hours**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60+40=100**

Course Outcomes (COs): At the end of the course students will be able to:

* Understands the foreign policy of European countries as well as formation of alliance and counter alliances
* Understand the success of the Russian revolution of 1917 and socio-economic transformation of Russia under Lenin.
* Trace the causes and consequence of the World War – I and establishment of the League of Nations.
* Trace consequence of the Great Depression and the emergence of dictatorship in Italy and Germany.
* Understand the impacts of World War II.
* In additions this help them to realize the importance of international morality in view of establishment and work of UNO

Course titale	History of Modern Europe (1880-1945)	56.hrs /sem
Unit I	**Chapter-1:** Formation of Alliance and Counter Alliance (1880-1914)-Divide of World into two camps. **Chapter-2:** Eastern Question (1878-1994) and Balkan Wars (1912-13) **Chapter-3:** Young Turk Movement and Italy – Turkish War	**14Hour**
Unit II	**Chapter-4:** First World War: Causes, Results and Versailles Treaty **Chapter-5:** Russian Revolution of 1917 – Communist Regime in USSR –Lenin's New Economic Policy **Chapter-6:** League of Nations: Structure, Achievements and Failures.	**14Hour**
Unit III	**Chapter-7:** Totalitarianism in USSR and Kemal Pasha's benevolent Dictatorship in Turkey **Chapter-8:** Nazism in Germany––Hitler -Nazi Doctrine **Chapter-9:** Fascism in Italy- Mussolini	**14Hour**
Unit IV	**Chapter-10:** Great Depression of 1929 **Chapter-11:** Second World War -Causes, Course and Results **Chapter-12:** United Nations Organization-Main Organs, Work and Relevance **Map Topics;** a) Main battles of the First World War **OR** b) Main battles of the Second World War	**14Hour**

References:

1. H.L.Peacock: *A History of Modern Europe* (1789-1991)
2. A.J.P Taylor: *The Struggle for Mastery in Europe*:1848-1918 ,
3. Stephen White : *Development in Russian Politics*
4. *Stuart Miller*: *Mastering Modern European History*
5. Southgate, G.W: *A Text Book of European History*
6. Stephen J.Lee : *Aspects of European History*1789-1980.
7. Peter Wales *: World Affairs Since 1919,* Methuen and Co. Ltd, 1958.
8. I.M. Roberts: *History of the World*, New York, 1976.
9. Mowat (Ed.):*The New Cambridge Modern History:* Vol.XII Cambridge, 1968.
10. M.G. Gupta: *International Relations since 1919,* Allahabad,1957
11. E.H. Carr; *International Relations – The Two World Wars*
12. Lipson E.; *The League of Nations*
13. Taylor, A.J.P.; *Origin of the Second World War,* London, 1962.
14. Churchill, W.S.; *History of the Second World War,* New York, 1960
15. Dutta, R.P.**;** *Fascism and Social Revolution*
16. Grant A.J.; *Europe in the 19th and 20th Centuries (1789-1950)*

Pedagogy:

The course shall be taught through the Lectures/ tutorials/assignments/self-study/seminars.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	**40**

Course Title: HISTORY OF FREEDOM MOVEMENT AND UNIFICATION IN KARNATAKA	
Semester: VI	**Course Code:** DSC 14
Total Contact Hours: 60	**Course Credits: 4**
No. of Teaching Hours/Week:4	**Duration of ESA/Exam: 2 Hours**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60+40=100**

Learning Outcome:

- To get familiarized with impact of the rebellion of 1857 on Karnataka
- To get acquainted with National Movement in Karnataka
- To know about Belgaum Congress Session
- To understand about Origin and development of unification movement in Karnataka
- To know about Contributions of Various Kannada Organizations.

Unit	Contents of Course- DSC- 14	60 Hours
Unit-I	**Chapter-1:** Introduction: Historical background the disintegration of Karnataka and absorption of Karnataka areas into Madras, Bombay provinces and Hyderabad state Armed Resistances against the Britishrule in Karnataka. **Chapter-2:** Rani of Kittur 1824, Sangoli Rayanna (1829-30), Nagar revolt of 1830-Resistance in Kodagu. **Chapter-3:** The impact of the rebellion of 1857 on KarnatakaBedas of Halagali against Anti arms Act.	**15 Hours**
Unit-II	**Chapter-4:** Venkatappa Nayaka of Surapura, Babasaheb of Naragunda, Bhima rao of Mundargi - effects of the Struggle. **Chapter-5**: The National Movement in Karnataka - Early activities the response to Swadeshi and Non-Co-operation Movements in Karnataka-Influence of Tilak and Gandhi. **Chapter-6:** Belgaum Congress Session (1924) Satygraha campaigns in Karnataka (1930-34)	**15 Hours**
Unit- III	**Chapter-7:** Quit India Movement in Karnataka-its effects **Chapter-8:** Movement for Responsible Government in Princely Mysore state. **Chapter-9:** Origin and development of unification movement in Karnataka: Factors responsible for unification Movement.	**15 Hours**

Unit- IV	**Chapter-10:** Views of different Committees on the issue (Dhar, JVP, SRC): Contributions of Various Kannada Organizations **Chapter-11:**The Kannada Renaissance role of Kannada literatureand Journalism in bringing about Karnataka Consciousness	**15 Hours**
	Chapter-12: The ultimate move towards the formation of Karnataka.	

Suggested Readings

References	
1	S.Chandrashekahar - Karnataka Ekikaranada Charitre
2	R.R.Diwakar - Karnataka through the ages
3	P.B.Desai - History of Karnataka
4	G.S.Halappa - History of Freedom Movement in Karnataka
5	Basavaraja.K.R. - History of Karnataka
6	K. Veerathappa - Studies in Karnataka History and Culture.
7	James Manor - Political change in an Indian State Mysore 1917-
8	M.Shamarao - 1955 - Modern Mysore (2 vols.)
9	H.S. Gopal Rao - Karnataka Ekikaranada Ithihasa

Pedagogy:
The course shall be taught through the lectures, assignments, group discussions and week- end seminars.

General Pattern of History Question Paper

I. Term End Examination for Discipline Specific Core (DSC) Papers

Each paper will be for maximum of **60 mark.** The minimum mark to pass the examination is 40% (24 mark) in each theory paper.

Note: Duration of Examination for Discipline Specific Core (DSC) Papers is **3 hours.**

Question paper pattern for **Discipline Specific Core (DSC) Papers** –

Section A: Multiple Choice Questions
Section B: Short Answer Questions
Section C: Long Answer Questions

Section A: Multiple Choice Questions
All Questions are Compulsory (10x1=10)

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Section B: Short Answer Questions (2x10=20)

Answer any Two questions. Answer the following questions in not more than 500 words

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13.

Section C: Long Answer Questions (2x15=30)
Answer any Two questions. Answer the following questions in not more than 800 words

14.
15.
16.

I. Term End Examination for Discipline Specific Elective (DSE) Papers

Each paper will be for maximum of 60 mark. The minimum mark to pass the examination is 40% (24 mark) in each theory paper.

Note: Duration of Examination for Discipline Specific Elective (DSE) Papers is **2 hours.**

Question paper pattern for **Discipline Specific Elective (DSE) Papers** –

Section A: Short Answer Questions

Section A: Short Answer Questions

Answer any thirty (30 x 2 = 60)

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Proposed Syllabus-

Political Science Discipline

Submitted to

The Registrar
Vidya Sangam
Rani Channamma University
Belagavi

Submitted by

Chairman and Members
Of U G BOS – Ist & IInd Semester (NEP)

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS
As per the Choice Based Credit System (CBCS) designed in accordance with Learning Outcomes-Based Curriculum Framework (LOCF) of National Education Policy (NEP) 2020
For Undergraduate Program in
POLITICAL SCIENCE
(BA/BSc/BCom/BSW/BBA/BCA and other faculties)

w.e.f.
Academic Year 2021-22 and onwards

PREAMBLE

Education empowers Mankind. A holistic education paradigm will effectively focus on developing knowledge, employable skill sets, appropriate attitudes and an overall personality. NEP is focused towards imparting such an education system.

India's first education policy of the 21st century is 'National Education Policy 2020' proposes the revision and revamping of all aspects of the education structure, including its regulation and governance. It seeks to create a new system that is aligned with the developmental aspirations & goals of 21st century education, including SDG4, while building upon India's traditions and value systems.

NEP aims for India to have an education system by 2040 that is second to none, with equitable access to the highest-quality education for all learners regardless of socialor economic background and seeks to ***"ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030***.''

Vision of the National Education Policy 2020

- ✓ An education system that contributes to an equitable and vibrant knowledge society, by providing high-quality education to all.
- ✓ Develops a deep sense of respect towards the fundamental rights, duties and Constitutional values, bonding with one's country, and a conscious awareness of one's role and responsibilities in a changing world.
- ✓ Instills skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen.

As India is enjoying the demographic dividend, which will last till 2055 and to reap the benefits, a good education policy was the need of the hour. Hence there is lot of hopes on the NEP, which has come as cure the edu-ailments and to plug the shortcomings of the education system which marred for 36 years and strengthen our education system. An expectation on NEP is high. As every good policy success lies in the implementation and active participation of its stake holders, so is the NEP. The success or failure of NEP lies in all our hands. Hence let all of us join our hands in making the NEP successful.

As enshrined in the National Education Policy-2020 vision of introducing course curriculum for undergraduate studies under Choice Based Credit System (CBCS), the main objective of framing this curriculum of BA/B.Sc. (Basic/Hons) in Political Science is to impartthe students a holistic understanding of the subject giving substantial weight age to the core contents, skill, value-based and ability enhancement. The syllabus has given due importance on the main streams of the body of knowledge on Political Science" with due recognition of its wide spectrum. The ultimate goal of the syllabus is to enable the students to have an in- depth knowledge on the subject and enhance their scope of employment at every level of exit. Adequate emphasis has been given on the new and emerging techniques and understanding of the subject under the changing regime and global context.

There is a need to strengthen the students to understand essential aspects of political Science in diverse subject areas not only in social sciences, but also among other natural and physical sciences. The curriculum lays focus on creating new knowledge, acquiring new skills and capabilities in Political Science producing an intelligent human resource serving the Political objectives and the society.

Board of Studies: Political Science (UG)

01	**Prof. Y S Balavantagol** Department of Studies in Political Science, Rani Chanamma University, Belagavi.	Chairman
02	**Prof. S. R. Mulla** Anjuman College, Belagavi	Member
03	**Dr. S. H. Patil** R P D College, Belagavi.	Member
04	**Dr. B. M. Turadagi** J S S College, Gokak	Member
05	**Dr. S. P. Talawar** SMAT's Shivanand College, Kagwad	Member

Table of Contents

Sd/-

Date: 25.10.2021 **Chairman UG BOS**

List of Committee Members

Chairman

Dr. Harish Ramaswamy, Vice Chancellor, Raichur University, Raichur.

Member Convener

Dr. K. Prasanna Kumar, Special Officer, Karnataka State Higher Education Council.

Members

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2. **Dr. Chandrakant M Yatanoor**, Professor, Gulbarga University, Kalaburgi
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14. **Shri. H M Krishna**, Associate Professor, Government Arts College, Bengaluru.
15. **Dr. Rabia Begum**, Associate Professor, Govt. Women's First Grade College, Jewargi Colony, Kalaburagi.
16. **Dr. B. Saroja**, Associate Professor, SSA Govt. First Grade College (Autonomous), Ballari,
17. **Dr. S Ananth**, Associate Professor, GFGC, Koppa, Chikamangaluru Dist.
18. **Dr. Basavarajeshwari R Patil**, Assistant Professor, Govt. First Grade College, Kalagahtagi.

Program Objectives in Political Science

- To understand the importance of concepts in Political Science.
- To familiarize the students with the basic ideas thoughts and theories in Political Science.
- To help them to understand and make distinction among Political Theory, Political Philosophy and Political Science and help them to understand the importance of these in the national and global contexts.
- To help them to understand the emergence and growth of modern States and give them an idea of their functioning and relate them to the political realities.
- To equip them to critically relate the theoretical aspects of Political Science to the socio economic and political realities of our times.

Program Learning Outcomes in Political Science:

At the end of the successful completion of the course, the students will be able to-

- Acquire domain knowledge.
- Study and analyze political contexts from critical and constructive prospective.
- Have a better understanding of the working of various political institutions including decentralized institutions state legislatures and parliament and relate this functioning to the greater cause of nation building as a responsible citizen.
- Assess how global national and regional development affects polity and society.
- To gain critical thinking and develop the ability to make logical inferences about socio-economic and political issues, on the basis of comparative and contemporary political discourses in India.
- Contemplate about national and international issues involving States having different political ideologies and historical contexts.
- Pursue higher education such as Post Graduate Studies and Research in Political Science and in other interdisciplinary areas to provide qualitative insights to create a better world.

Sd/-

Date: 25.10.2021 **Chairman UG BOS**

Proposed Structure for Political Science Discipline

Semester I				
Course	**Paper**	**Credits**	**No. of Teaching Hours/Week**	**Total Marks/ Assessment**
DSC-1	**Basic Concepts in Political Science**	**3**	**3**	**100 (60+40)**
DSC-2	**Political Theory**	**3**	**3**	**100 (60+40)**
OE-1	**Human Rights**	**3**	**3**	**100 (60+40)**
Semester II				
DSC-3	**Western Political Thought**	**3**	**3**	**100 (60+40)**
DSC-4	**Indian National Movement and Constitutional Development**	**3**	**3**	**100 (60+40)**
OE-2	**Indian Polity: Issues and Concerns**	**3**	**3**	**100 (60+40)**

Model Curriculum

Name of the Degree Program: BA/BSc/BCom/BBA/BCA… Without Practical Course

Discipline Core: Political Science

Total Credits for the Program:

Starting year of implementation: 2021-22

Program Outcomes:

By the end of the program the students will be able to:

- Acquire domain knowledge.
- Study and analyze political contexts from critical and constructive prospective.
- Have a better understanding of the working of various political institutions including decentralized institutions state legislatures and parliament and relate this functioning to the greater cause of nation building as a responsible citizen.
- Assess how global national and regional development affect polity and society.
- To gain critical thinking and develop the ability to make logical inferences about socio-economic and political issues, on the basis of comparative and contemporary political discourses in India.
- Contemplate about national and international issues involving States having different political ideologies and historical contexts.
- Pursue higher education such as Post Graduate Studies and Research in Political Science and in other interdisciplinary areas to provide qualitative insights to create a better world.

Assessment:

Weight age for assessments (in percentage)

Type of Course	**Formative Assessment / IA**	**Summative Assessment**
Theory	**40**	**60 =100**
Practical	**-**	**-**
Projects	**-**	**-**
Experiential Learning (Internships etc.)	**-**	**-**

Curriculum Structure for the Undergraduate Degree Program

BA / BSc/BCom/BBA/BCA

Total Credits for the Program:

Starting year of implementation: 2021-22

Name of the Degree Program: BA/BSc/BCom/BBA/BCA…Without Practical Course

Discipline/Subject: Political Science

Program Articulation Matrix: Core Courses

This matrix lists only the core courses. Core courses are essential to earn the degree in that discipline/subject. They include courses such as theory, laboratory, project, internships etc. Elective courses may be listed separately

Semester	Title /Name Of the course	Program outcomes that the course addresses (not more than 3 per course)	Pre-requisite course(s)	Pedagogy##	Assessment$
1	**Basic Concepts in Political Science**	1.Political Science, theoretically and will gain knowledge to explain and analyze politics at large. 2.The dynamics of politics. 3.To inculcate the democratic spirit.		The course shall be taught through the Bridge Courses, Lecture, Tutorial, Interactive	60+40=100

				Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.	
	Political Theory	1.The nature and relevance of Political Theory. 2.The different concepts like Liberty, Equality, Justice and Rights. 3.To reflect upon some of the important debates in		-do-	60+40=100

		Political Theory.			
2	**Western Political Thought**	1. And get an introduction to the Schools of Political Thought and Theory making in the West. 2. And introduce the richness and variations in the political perceptions of Western Thinkers. 3. And familiarize themselves to the Thought and Theory of Western Philosophy.		-do-	60+40=100
	Indian National Movements And Constitutional Development	1. Understand how the colonial rule was overthrown by the Indian nationalists. 2. Appreciate the ideals and values of Gandhi that resulted in freedom. 3. Examine the problem of Independent India and the role played by great leaders in solving them.		-do-	60+40=100

Program Articulation Matrix: Elective Course

This matrix lists only the core courses. Core courses are essential to earn the degree in that discipline/subject. They include courses such as theory, laboratory, project, internships etc. Elective courses may be listed separately

Semester	**Title /Name Of the course**	**Program outcomes that the course addresses (not more than 3 per course)**	**Pre-requisite course(s)**	**Pedagogy##**	**Assessment$**
1	Human Rights	1.Explain the basic concept of Human Rights and its various formulations. 2.Have necessary knowledge and skills for analyzing, interpreting, and applying the Human Rights standards and sensitize them to the issues. 3.Develop ability to critically analyse Human Rights situations around them		The course shall be taught through the Bridge Courses, Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises,	60+40=100

				Assignments, Seminars, Group Discussions and Week-end Counseling Classes.	
2	Indian Polity: Issues and Concerns	1. Understand the reasons behind the causes of these issues and also the constitutional provisions that existed. 2. Familiarize with the debates that emerged. 3. Be able to suggest the measures to control such issues.			60+40=100

Sd/-

Date: 25.10.2021 **Chairman UG BOS**

Semester I

BASIC CONCEPTS IN POLITICAL SCIENCE

DSC-1

Course Title: **BASIC CONCEPTS IN POLITICAL SCIENCE**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2Hours**
Formative Assessment Marks: 4 0	Summative Assessment Marks: 60+40=100

Course Objective:

Develop an understanding about the nature and philosophy of Political Science and its interface with society. Enable the students to develop qualities of responsible and active citizens in a democracy.

Learning Outcome:

At the end of the course the students shall understand -

- Political Science, theoretically and will gain knowledge to explain and analyze politics at large.
- The dynamics of politics.
- To inculcate the democratic spirit.

Unit	**Contents of Course- 1**	**45 Hours**
Unit-I	**Chapter -1** Meaning, Nature, Scope and Importance of Political Science, Approaches to the study of Political Science (Traditional and modern). **Chapter- 2** Meaning, Definitions and Elements of State, Theories of State- Idealist Theory, Liberal, Neo-Liberal Theory, Marxist and Gandhian Theory of State **Chapter-3** Civil Society- Meaning and Importance**.**	**15 Hours**
Unit-II	**Chapter-4** Meaning, Characteristics and Kinds of	**15 Hours**

	Sovereignty and Law **Chapter-5** Theories of Sovereignty -Monistic, Pluralistic, Historical, Philosophical, Challenges to the State Sovereignty in the age of Globalization.	
Unit- III	**Chapter-6** Liberty: Meaning and Kinds; Positive and Negative **Chapter-7** Equality: Meaning and Kinds (Social, Economic and Political) **Chapter-8** Power and Justice: Meaning and kinds, Political Obligation: Meaning and Importance	**15 Hours**

Exercise:

1. List out the modern elements of State
2. List out the countries and identify the issues related to equality
3. Identify an issue and discuss the role of civil society

Suggested Readings:

1. Political Theory: Ideas & Concepts, S. Ramswamy, Delhi,Macmillan, 2002.
2. Modern Political Theory, S. P. Verma, New Delhi, Vikas, 1983.
3. Principles of Modern, Political Science, JC Johri, Sterling Publishers Pvt.Ltd. 1995.
4. Principles of Political Science, AC Kapur, New Delhi, Sultan Chand and Sons,2004.
5. Principles of Political Science, N.N Agarwal, Vidya Bhushan, Vishnoo Bhawan, R.Chand & Co, New Delhi, 1998.
6. Political Science Theory, S.C Pant, Prakashan Kendra, Lucknow, 1998.
7. Political Science Theory, S. N Dubey, Lakshmi Narain Agarwal, Agra, 2002.
8. Principle of Modern Political Science, J C Johari, Sterling Publications, New York, 2009.
9. Principles of Political Science, Anup Chand Kapur, S Chand & Co Ltd, 2010.
10. Political Theory and Socio-Political Philosophy, J.C. Johari, Sterling Publication Ltd., New Delhi,2020
11. Politics, Andrew Heywood, Palgrave Foundation, New York, 1997
12. Rajakeeya Sidhant, Meena Deshpande & Dattatrey, Benaluru

Pedagogy:

The course shall be taught through the Bridge Courses, Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Assessment Test-2	10
Seminar/Presentation/Fieldwork/Project work	10
Assignment	5
Attendance	5
Total	**40**

Sd/-

Date: 25.10.2021 **Chairman UG BOS**

POLITICAL THEORY

DSC-2

Course Title: **POLITICAL THEORY**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40=100**

Course Outcome:

This course aims to introduce certain key aspects of conceptual analysis in political theory and the skills required to engage in debates surrounding the application of the concepts.

Learning Outcomes:

At the end of the course the students shall understand -

• The nature and relevance of Political Theory.

• The different concepts like Liberty, Equality, Justice and Rights.

• To reflect upon some of the important debates in Political Theory.

Unit	Contents of Course- 2	45 Hours
Unit-I	**Chapter-1** Meaning, Nature and Importance of Political Theory, Traditional Approaches to Political Theory- Normative, Historical, Philosophical. **Chapter-2** Modern Approaches- Behavioral, Post-Behavioral, David Easton's Political System and Marxian Approach **Chapter-3** Relevance, Decline and Resurgence of Political Theory	**15 Hours**
Unit-II	**Chapter-4** Liberalism: J.S Mill **Chapter-5** Neo- Liberalism: Rawls	**15 Hours**

Unit- III	**Chapter-6** Communitarianism and Multiculturalism: Indian perspective, Colonial Discourse and Post Colonialism. **Chapter-7 Proponents** of Secularism – Nehru, Gandhi **Chapter-8 Models of Democracy:** Classical Democracy, Developmental Democracy and Participatory Democracy .	**15 Hours**

Exercise:

- Write about the Myth and Reality on Communitarianism in India
- Compare the concept of Liberty, Equality and Justice to the Modern world
- Write the understanding of secularism in India

Suggested Readings:

1. Ahmed. V, Theory: Classes, Nations Literatures. Verso, London, 1992.
2. Arendt. H., On Revolution, Viking, New York, 1963
3. Ashcroft. B, The Post-Colonial Studies Reader, Rout ledge London, 1995
4. Bryson. V, Feminist political Theory, Macmillan, London, 1992.
5. Christopher Butler. Postmodernism: A very Short Introduction, OUP Oxford, 2002.
6. Christopher Norris, the Truth about Postmodernism. Wiley- Blackwell, New Jersey, 1993.
7. Connolly. W, Identity/Difference: Democratic Negotiations, Cornell University Press, NY, 1991.
8. Edward Said Orientalism, Pantheon Books, New York, 1978.
9. Elshtain. J. B, Public Man, Private Man: women in Social and Political Thought, Princeton University Press, Princeton NJ, 1981.
10. Fanon. F. Black skin, white Masks, translated by C. L. Markham, Grove Press, New York, 1967.
11. Jean Francis Lyotard. The Postmodern Condition- A report on Knowledge. Parris: Minuit, 1979.
12. Balagangadhara, S.N., and Jakob De Roover, "The Secular State and "Religious Conflict: Liberal neutrality and the Indian Case of Pluralism". The Journal of Political Philosophy 15, no. 1: 67-92, 2007.
13. Bhargava, Rajeev. Ed. Secularism and Its Critics, Oxford University Press, New Delhi, 1998.
14. Veena Das, Dipankar Gupta and Patricia. Eds. Tradition, Pluralism and Identity, Uberoi New Delhi, 1999.
15. Nehru, Jawaharlal. 1946. The Discovery of India. Jawaharlal Nehru Memorial Fund, Oxford University Press, New Delhi, 1988.
16. Rochana Bajpai, The conceptual vocabularies of secularism and minority rights in India, Journal of Political Ideologies, 2002.
17. ರಾಜಾರಾಮ ಹೆಗಡೆ ಮತ್ತ ಸದಾನಂದ ಜೆ.ಎಸ್. (ಸಂ) "ಪೂರ್ವಾವಲೋಕನ", ವಸಂತ ಪ್ರಕಾಶನ, ಬೆಂಗಳೂರು, 2016

Pedagogy:

The course shall be taught through the Bridge Courses, Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Assessment Test-2	10
Seminar/Presentation/Fieldwork/Project work	10
Assignment	5
Attendance	5
Total	**40**

Sd/-

Date: 25.10.2021 **Chairman UG BOS**

HUMAN RIGHTS

Open Elective OE-1

Course Title: **HUMAN RIGHTS**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40=100**

Course Objective:

This course aims to introduce the students to basic concepts and practices of Human Rights in the global and local domain. This course also exposes them to certain recent issues confronting the Human Rights debates.

Learning Outcomes:

After completing this course students will be able to-

- Explain the basic concept of Human Rights and its various formulations.
- Have necessary knowledge and skills for analyzing, interpreting, and applying the Human Rights standards and sensitize them to the issues.
- Develop ability to critically analyse Human Rights situations around them.

Unit	Contents of Course- OE-1	45 Hours
Unit-I	**Chapter-1** Meaning, nature, scope and importance of Human Rights **Chapter-2** The Human Rights of First generation (Civil and Political Rights), Second generation (Economic, Social and Cultural Rights), Third generation (Collective Rights) **Chapter-3** Universal Declaration of Human Rights	**15 Hours**
Unit-II	**Chapter-4** Human Rights, Fundamental Rights and Fundamental Duties in India **Chapter- 5** National Human Rights Commission (NHRC) -	**15 Hours**

	Composition and its function **Chapter-6** Karnataka State Human Rights Commissions (KSHRCs) – Composition and its functions	
Unit- III	**Chapter -7** National Commission and Committees for SCs/STs, Minorities' Commission, Women' Commission **Chapter-8** Major issues, concerns and challenges to Human Rights	**15 Hours**

Exercise:

- Group Discussion on Human Rights and its types (comparison of Western and Eastern concept of Human Rights).
- Students can be asked to do collage making and present the same.
- Find out the different types of complaints received by NHRC and bring out the end results on any one of such case.
- In order to make it more participatory learning, the students are required to visit the website of NHRC (www.nhrc.nic.in), wherein at the left-hand side, a link is provided to the 'instructions. After going through the guidelines issued by NHRC's, briefly explain the guidelines on – Custodial death/rape, Encounter death, and Guidelines on arrest.

Suggested Readings:

1. Baxi Upendra (ed.), The Right to be Human, Lancer International, Crawford, New Delhi, 1987.
2. James (ed.), the Rights of People, Oxford, New York, 1988.
3. Craston, M. What are Human Rights, Bodely Head, London, 1973
4. Rhonda L. Callaway& Julie Harrelson- Stephens, "International Human Rights", Published by viva books private limited, New Delhi, 2010.
5. Janusz Symonides,"Human Rights Concept and Standards", Rawat Publications, New Delhi , 2019.
6. Sunil Deshta and KiranDeshta,"Fundamental Human Rights", Deep and Deep Publications, New Delhi, 2011.
7. qÁ. PÀªÀÄ¯ÁQë vÀqÀ¸ÀzÀ, "ªÀiÁ£ÀªÀ ºÀPÀÄÌUÀ¼À ZÁjwæPÀzÀ±Àð£À ºÁUÀÆ ¹zÁÞAvÀUÀ¼ÀÄ", ¥Àæ¸ÁgÁAUÀ, PÀ£ÁðlPÀ «±Àé«zÁå®AiÀÄ, zsÁgÀªÁqÀ 2015.
8. Donelly, Jack and Rhoda Howard (ed.), International Handbook of Human Rights, Westport, Connecticut: Greenwood Press, 1987.
9. Donelly, Jack, Universal Human Rights in Theory and Practice, New Delhi, Manas, 2005.
10. Dr.Tapan Biswal, "Human Rights Gender and Environment", Viva Books Private Limited Publishers, New Delhi 2006
11. Satya.P. Kanan, "Human Rights Evolution and Development", Wisdom Press, New Delhi 2012.
12. Gerwith, Human Rights: Essays on Justification and Application, University of Chicago Press, Chicago, 1982.
13. Khan, Mumtaz Ali, Human Rights and the Dalits, Uppal Publishing House, New Delhi, 1995.
14. V.T.Patil,"Human Rights Developments in South Asia", Authors Press Publishers, Delhi 2003.
15. Dr.S.K. Gupta, "Statewise Comprehensive Information on Human Right Violation", Published by ALP Books, Delhi. 2009
16. Acharya, B.C. A Handbook of Wome;s Human Rights, Wisdom Press, New Delhi, 2011.
17. South Asia Human Rights Documentation Centre, Introducing Human Rights, Oxford, New Delhi, 2006.
18. Lillich, R. International Human Rights: Law Policy and Practice, Boston: Little Brown and Co., 1991 2nd Edn.
19. CdÄð£ïzÉÃªï, EA¢gÁCdÄð£ïzÉÃªï, ¸ÀÄ¥ÁÛzÁ¸ï ¸ÀA¥ÁzÀPÀgÀÄ, C£ÀÄªÁzÀPÀgÀÄ PÉ. JZï. ²æÃ¤ªÁ¸ï, ªÀiÁ£ÀªÀ ºÀPÀÄÌUÀ¼ÀÄ: MAzÀÄDPÀgÀUÀæAxÀ, £ÁåµÀ£À¯ï §ÄPïlæ¸ïÖ, EArAiÀiÁ

Pedagogy:

The course shall be taught through the Bridge Courses, Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Assessment Test-2	10
Seminar/Presentation/Fieldwork/Project work	10
Assignment	5
Attendance	5
Total	**40**

Sd/-

Date: 25.10.2021 **Chairman UG BOS**

Semester II

WESTERN POLITICAL THOUGHT

DSC-3

Course Title: **WESTERN POLITICALTHOUGHT**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40=100**

Course Objective: The Syllabus is designed to understand Political Philosophy, traditions that evolved in Europe from Ancient to the beginning of modern era. To examine the contributions of the Greek, Medieval and early Modern thinker's Philosophical thought.

Learning Outcomes:

At the end of the course the students shall understand -

- And get an introduction to the Schools of Political Thought and Theory making in the West.
- And introduce the richness and variations in the political perceptions of Western Thinkers.
- And familiarize themselves to the Thought and Theory of Western Philosophy.

Unit	Contents of Course-3	45 Hours
Unit-I	**Chapter -1** Salient Features of the Greek Political Thought, **Plato:** Theory of Justice, Philosopher King, **Aristotle:** State and Its Classification, Theory of Revolution **Chapter -2** Salient Features of Medieval - Political Thought **Chapter -3 St. Thomas Aquinas:** Church v/s State, St**. Augustine:** Theory of Two Swords, **Machiavelli:** On Politicsand State Craft, Views on ends and means	**15 Hours**
Unit-II	**Chapter -4 Hobbes**: Theory of Sovereignty, **Locke**: Social Contract and Theory of Government, Tolerance; **Rousseau**: Social Contract, General Will	**15 Hours**

	Chapter -5 Bentham: Theory of Utilitarianism **Chapter -6 J.S. Mill**: Views on Liberty	
Unit- III	**Chapter -7 A. Hegel -** Dialectical Materialism **B. Karl Marx -** Classless and stateless society **Chapter -8 Jurgen Habermas-** Communicative action, Theory of truth and knowledge **Chapter -9 Hannah Arendt-** Theory of Action, Modernity, Conception of Citizenship.	**15 Hours**

Exercise:

- Compare Greek State with the Roman state and make points
- Imagine the present situation with that of Contractualist's Social Contract Theory and write the summary
- Can we have a classless society in the modern world? Comment

Suggested Readings:

1. A. Hacker, Political Theory: Philosophy, Ideology, Science New York, Macmillan, 1961.

2. G.H. Sabine. A History of Political Theory. New Delhi: Oxford and IBH, 1937.

3. C.L. Wayper. Political Thought. Bombay: B.I. Publications, 1977.

4. Ernest Barker, Greek Political Theory: Plato and his Predecessors. London: Metheun & Co., 1970.

5. M. Butterfield, the State Craft of Machiavelli, New York: The Macmillan Company, 1956.

6. O.P. Bakshi; Politics and Prejudice: Notes on Aristotle's Political Theory. Delhi: The Delhi University Press, 1975.

7. M.A. Shepard, "Sovereignty at the Crossroads: A Study of Bodin", Political Science Quarterly XLV, pp.580-603.

8. L. Colleti. From Rousseau to Lenin. New Delhi: Oxford University Press, 1969.

9. G.H. Sabine. A History of Political Theory. New Delhi: J.L. Thorson, Oxford and IBH, 1937.

10. C.E. Vanghan. The Political Writings of Jean Jacques Rousseau, 2 Vols. New York, Jojn Wiley, 1962.

11. C.L. Wayper, Political Thought. Bombay: B.I. Publication, 1977.

12. H. Warrender. The Political Philosophy of Hobbes: His Theory of Obligation, Oxford: Clarendon Press, 1957.

13. A. Hacker, Political Theory: Philosophy, Ideology Science. New York: Macmillan, 1961.

14. D. Boucher and P. Kelly, (eds) 'Political Thinkers: From Socrates to the Present', Oxford, Oxford University Press. 2009

15. J. Coleman, 'a History of Political Thought: From Ancient Greece to Early Christianity, Oxford, Blackwell Publishers, 2000.

16. Mukherjee, Subrato and Susheela Ramaswamy, 'History of political Thought: Plato to Marx', PHI Publishers, New Delhi, 2011.

17. A. Skoble and T. Machan, 'Political Philosophy: Essential Selections', New Delhi, Pearson Education, 2007.

Pedagogy:

The course shall be taught through the Bridge Courses, Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, and Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Assessment Test-2	10
Seminar/Presentation/Fieldwork/Project work	10
Assignment	5
Attendance	5
Total	**40**

Sd/-

Date: 25.10.2021 **Chairman UG BOS**

INDIAN NATIONAL MOVEMENT AND CONSTITUTIONAL DEVELOPMENT

DSC-4

Course Title: **INDIAN NATIONAL MOVEMENT AND CONSTITUTIONAL DEVELOPMENT**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40=100**

Course Objective:

- To familiarize the students with the ideas of Nationalism and contemplate on how colonial rule was overthrown by the Indian Nationalists.
- To acquaint the students with the problems of Independent India.
- To enable the students to understand the role of India in World affairs and the contributions of great men towards freedom.

Learning Outcome:

At the end of the course the students shall -

- Understand how the colonial rule was overthrown by the Indian nationalists.
- Appreciate the ideals and values of Gandhi that resulted in freedom.
- Examine the problem of Independent India and the role played by great leaders in solving them.

Unit	Contents of Course-4	45 Hours
Unit-I	**Chapter-1** Indian National Movement: The Liberal,The Extremist and Revolutionary Phase **Chapter-2** The Gandhian Phase: Non-Cooperation movement **Chapter-3** Civil Disobedience Movement and the Quit India	**15 Hours**

	movement.	
Unit-II	**Chapter-4** Morley-Minto Reform Act of 1909, Montague Chelmsford Act of 1919: main provisions and Dyarchy **Chapter-5** Government of India Act of 1935: main provisions **Chapter-6** Indian Independence Act of 1947: main provisions, Cabinet Mission Plan	**15 Hours**
Unit- III	**Constituent Assembly Debates on** **Chapter-7** Citizenship State Structure **Chapter-8** Language and Union of States **(The above three should be discussed in the context of Constituent Assembly Debates)**	**15 Hours**

Exercise:

- Think over a situation in India and identify at least two political and socio-economic conditions that are present and two that are not present in Indian democracy
- List out in a table giving some democratic roles of a citizen, explore yourself how democratic you are.
- Write some good qualities required in a citizen

Suggested Readings

1. Bandopadhyay, S. From Plassey to Partition: A History of Modern India. New Delhi: Orient Longman, 2004.

2. Thapar, R. 'Interpretations of Colonial History: Colonial, Nationalist, Post-colonial', in DeSouza, P.R. (ed.) Contemporary India: Transitions. New Delhi: Sage Publications, 2000.

3. Sarkar, S. Modern India (1885-1847). New Delhi: Macmillan, 1983.

4. Jalal, A. and Bose, S. Modern South Asia: History, Culture, and Political Economy. New Delhi: Oxford University Press, 1997.

5. Smith, A.D. Nationalism. Cambridge: Polity Press, 2001.

6. Islam, S. 'The Origins of Indian Nationalism', in Religious Dimensions of Indian Nationalism. New Delhi: Media House, 2004.

7. Chatterjee, P. 'A Brief History of Subaltern Studies', in Chatterjee, Partha Empire & Nation: Essential Writings (1985-2005). New Delhi: Permanent Black, 2010.

8. Mani, B.R. Debrahmanising History, Dominance and Resistance in Indian Society. New Delhi: Manohar Publishers, 2005.

Pedagogy:

The course shall be taught through the Bridge Courses, Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Assessment Test-2	10
Seminar/Presentation/Fieldwork/Project work	10
Assignment	5
Attendance	5
Total	**40**

Sd/-

Date: 25.10.2021 **Chairman UG BOS**

INDIAN POLITY: ISSUES AND CONCERNS

Open Elective OE-2

Course Title: **INDIAN POLITY AND CONCERNS**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40=100**

Course Objective: To make the students aware on different issues that exists in Indian polity. Through this paper students need to understand the emerging issues and their causes to the Indian Democracy.

Learning Outcome:

At the end of the course the students shall -

- Understand the reasons behind the causes of these issues and also the constitutional provisions that existed.
- Familiarize with the debates that emerged.
- Be able to suggest the measures to control such issues.

Unit	Contents of Course-OE-2	45 Hours
Unit-I	**Chapter-1 National Integration and Social Harmony** - Meaning and Need of National Integration and Suggestions for securing National Integration **Chapter-2 Society and Politics in India**: Role of Caste and its Impact on Indian Polity. **Chapter-3 Language and Religion**: Constitutional Provisions	**15 Hours**

Unit-II	**Chapter-4 Development and Inclusiveness:** Issues and Concerns **Chapter-5 Regionalism:** Reasons and implications	**15 Hours**
Unit- III	**Chapter-6 Corruptions**- Causes and Measures **Chapter-7 Terrorism**- Causes and Measures **Chapter-8** Unity in Diversity – Consensus and Challenges	**15 Hours**

Exercise:

- Classify the major factors which are an impediment to National Integration and give your suggestions
- Identify the terrorist's group in the world
- Make a point on 2011 Anti- Corruption movement in India

Suggested Readings:

1. M. Galanter, 'The Long Half-Life of Reservations', in Z. Hasan, E. Sridharan and R. Sudarshan (eds.) India's Living Constitution: Ideas, Practices, Controversies, New Delhi: Permanent Black, 2002.

2. C. Jaffrelot, 'The Politics of the OBCs', in Seminar, Issue, 2005.

3. Singh, M.P. & Saxena, R. Indian Politics: Contemporary Issues and Concerns. New Delhi: PHI Learning, 2008.

4. Vanaik, A. & Bhargava, R. (eds.) Understanding Contemporary India: Critical Perspectives. New Delhi: Orient Blackswan, 2010.

5. Dunkin Jalaki "Bharatadalli Jativyavste ideye?", Malladahalli Publication, Malladahalli.

Pedagogy:

The course shall be taught through the Bridge Courses, Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, and Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Assessment Test-2	5
Seminar/Presentation/Fieldwork/Project work	10
Assignment	5
Attendance	**30**

Sd/-

Date: 25.10.2021 **Chairman UG BOS**

I Semester B. A. Degree Model Question Paper 2021
POLITICAL SCIENCE
Introduction to Political Science (DSC) Regular

Time: 2 Hours Maximum Marks 60

Instructions to Candidates: All parts are compulsory. Subject to internal choice.

PART A

Note: Answer any five questions in 100 words each. All questions carry equal marks. 5x5=25

1. Explain the meaning and scope of Political science
2. Discuss the meaning of Historical Approach.
3. Explain the concept of civil society
4. Discuss the Gandhi an theory of state
5. What is Liberty? Discuss its aspects
6. Explain meaning of Monistic theory of sovereignty
7. What is Political obligation? Explain
8. Explain the concept of power

PART B

Note: Answer any two questions in 300 words each. All questions carry equal marks. 2x10=20

1. Discuss the important elements of state
2. Explain the features of Marxian theory of state
3. What is law? discuss its various kinds
4. Define sovereignty and discuss its features

PART C

Note: Answer any one question in 500 words. All questions carry equal marks. 1x15=15

1. Explain the meaning and importance of political Science
2. Discuss the challenges of state sovereignty in Globalization
3. Discuss meaning and Importance of Justice

Political Science

Discipline Syllabus

(III&IV Semester)

Submitted to

The Registrar
Vidya Sangam
Rani Channamma University
Belagavi

Submitted by

Chairman and Members
Of U G BOS – IIIrd & IVth Semester (NEP)

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS
As per the Choice Based Credit System (CBCS) designed in accordance with Learning Outcomes-Based Curriculum Framework (LOCF) of National Education Policy (NEP) 2020
For Undergraduate Program in
POLITICAL SCIENCE
(BA/BSc/BCom/BSW/BBA/BCA and other faculties)

w.e.f.
Academic Year 2021-22 and onwards

PREAMBLE

Education empowers Mankind. A holistic education paradigm will effectively focus ondeveloping knowledge, employable skill sets, appropriate attitudes and an overall personality. NEP is focused towards imparting such an education system.

India's first education policy of the 21st century is 'National Education Policy 2020' proposes the revision and revamping of all aspects of the education structure, including its regulation and governance. It seeks to create a new system that is aligned with the developmental aspirations & goals of 21st century education, including SDG4,while building upon India's traditions and value systems.

NEP aims for India to have an education system by 2040 that is second to none, with equitable access to the highest-quality education for all learners regardless of socialor economic background and seeks to ***"ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030."***

Vision of the National Education Policy 2020

- ✓ An education system that contributes to an equitable and vibrant knowledge society, by providing high-quality education to all.
- ✓ Develops a deep sense of respect towards the fundamental rights, duties and Constitutional values, bonding with one's country, and a conscious awareness of one's role and responsibilities in a changing world.
- ✓ Instills skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen.

As India is enjoying the demographic dividend, which will last till 2055 and to reapthe benefits, a good education policy was the need of the hour. Hence there is lot of hopes on the NEP, which has come as cure the edu-ailments and to plug the shortcomings of the education system which marred for 36 years and strengthen our education system. An expectation on NEP is high. As every good policy success lies in the implementation and active participation of its stake holders, so is the NEP. The success or failure of NEP lies in all our hands. Hence let all of us join our hands in making the NEP successful.

As enshrined in the National Education Policy-2020 vision of introducing course curriculum for undergraduate studies under Choice Based Credit System (CBCS), the main objective of framing this curriculum of BA/B.Sc. (Basic/Hons) in Political Science is to impart the students a holistic understanding of the subject giving substantial weight age to the core contents, skill, value-based and ability enhancement. The syllabus has given due importanceon the main streams of the body of knowledge on Political Science" with due recognition of its wide spectrum. The ultimate goal of the syllabus is to enable the students to have an in- depth knowledge on the subject and enhance their scope of employment at every level of exit. Adequate emphasis has been given on the new and emerging techniques and understanding of the subject under the changing regime and global context.

There is a need to strengthen the students to understand essential aspects of political Science in diverse subject areas not only in social sciences, but also among other natural and physical sciences. The curriculum lays focus on creating new knowledge, acquiring new skills and capabilities in Political Science producing an intelligent human resource serving the Political objectives and the society.

Board of Studies: Political Science (UG)

01	**Prof. Kamalaxi G Tadasad** Department of Studies in Political Science, Rani Chanamma University, Belagavi.	Chairman
02	**Dr. S. H. Patil** R P D College, Belagavi.	Member
03	**Dr. B. M. Turadagi** J S S College, Gokak	Member

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Sd/-

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List of Committee Members

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Dr. Harish Ramaswamy, Vice Chancellor, Raichur University, Raichur.

Member Convener

Dr. K. Prasanna Kumar, Special Officer, Karnataka State Higher Education Council.

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15. **Dr. Rabia Begum**, Associate Professor, Govt. Women's First Grade College, Jewargi Colony, Kalaburagi.
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17. **Dr. S Ananth**, Associate Professor, GFGC, Koppa, Chikamangaluru Dist.
18. **Dr. Basavarajeshwari R Patil**, Assistant Professor, Govt. First Grade College, Kalagahtagi.

Structure for Political Science Discipline

Semester III				
Course	**Paper**	**Credits**	**No. of Teaching Hours/Week**	**Total Marks/ Assessment**
DSC-5	**Indian Government and Politics**	**3**	**3**	**100 (60+40)**
DSC-6	**Parliamentary Procedures in India**	**3**	**3**	**100 (60+40)**
OE-3	**3.1 Gender and Politics**	**3**	**3**	**100 (60+40)**
	3.2 Understanding Gandhi	**3**	**3**	**100 (60+40)**
	3.3 Citizen, Citizenship and the Indian Constitution	**3**	**3**	**100 (60+40)**
Semester IV				
DSC-7	**Ancient Indian Political Ideas and Institutions**	**3**	**3**	**100 (60+40)**
DSC-8	**Modern Political Analysis**	**3**	**3**	**100 (60+40)**
OE-4	**4.1 Good Governance in India**	**3**	**3**	**100 (60+40)**
	4.2 Understanding Dr.B. R. Ambedkar	**3**	**3**	**100 (60+40)**
	4.3 Political Journalism	**3**	**3**	**100 (60+40)**
Ability Enhancement Compulsory Courses (AECC)	**Constitution of India**	**2**	**2**	**50(30+20)**

Political Science Model Curriculum (III & IV Semester)

Name of the Degree Program: BA/BSc/BCom/BBA/BCA… Without Practical Course

Discipline Core: Political Science

Total Credits for the Program:

Starting year of implementation: 2021-22

Program Outcomes:

By the end of the program the students will be able to:

- Not only upgrade the learning of Political Science as a contemporary discipline but also to inculcate the Indian political ethos and the moral standards of functioning of political institutions in India. These infact, brought laurels to our acumen in politics and Kautilya's Arthashatra stands as a proof of this.
- Understand voluminously about the dimensions of Indian Government, its Parliamentary Procedures, the concerns of Gender in Politics, Gandhian Philosophy and an understanding of the citizens duties and responsibilities in the 3rd semester.
- Understand the papers such as Ancient Indian Political Ideas and Institutions throws light on the wisdom of Indian Political Thought bringing along its side the Modern Political Analysis which is skill based paper.
- Understand the papers which are hybridised like Political Journalism and focused papers like Good Governance and Understanding Dr.B.R.Ambedkar which will bring to the fore facts and normative ways of running governments.

  Thus, these semesters represent both knowledge and skill components and making it contemporary in its content. Learning among the students will thus make it interesting and lively.

Assessment:

Weightage for assessments (in percentage)

Type of Course	Formative Assessment / IA	Summative Assessment
Theory	**40**	**(60+40) =100**
Practical	**-**	**-**
Projects	**-**	**-**
Experiential Learning (Internships etc.)	**-**	**-**
AECC	**20**	**(30+20)=50**

Semester III

INDIAN GOVERNMENT AND POLITICS

DSC-5

Course Title: **INDIAN GOVERNMENT AND POLITICS**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week: **3**	Duration of ESA/Exam: **2 Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40= 100**

Course Objective:

The course will explain the functioning of the Indian government and the performance of both the union and the state governments. It discusses the philosophy of our constitution and the commitment of the Indian state to its citizenry. It will help the students to develop interest in politics and grasp the dynamics/nuances of the politics, dynamics of leadership and the role of socio-economic, religious and lingual issues.

Learning Outcome:

At the end of the course the students shall -

- Learn how the governments both at the union as well state level operates and what are its challenges.
- Understand the characteristics of power structures in India and the response of the political parties to the socio-political dynamics.
- Measure and understand the effects of judicial decisions on policy making and social development in India.

Unit	Contents of Course-5	45 Hours
Unit-I	**Chapter-1**: Constituent Assembly-Composition and Debates on the structure of Indian State **Chapter-2:** Preamble and Salient Features of Indian Constitution **Chapter-3** Fundamental Rights, Duties, Directive Principles of State Policy	**15 Hours**

Unit-II	**Chapter-4:** The Union Executive: The President, Vice-President, Prime Minister and the Council of Ministers. **Chapter-5:** Parliament: Powers and Functions of Lok Sabha and Rajya Sabha, Amendment Process and features of Major Amendments (73^{rd}, 74^{th}, 86^{th}, 101^{st}). **Chapter-6:** Judiciary-Composition, Functions, Judicial Review, and Doctrine of Basic structure	**15 Hours**
Unit- III	**Chapter-7**: Nature of Indian Federal System, Union-State Relations (Sarkaria and Punchhi Commissions Recommendations) **Chapter-8:** Ideology of - National Political Parties, Regional Political Parties, and Coalition Politics. **Chapter-9:** Issues in Indian Politics: Caste, Criminalization, Terrorism, and Distributive Justice.	**15 Hours**

Exercise:

- Debate on the 'basic structure of Indian Constitution' and the need for changes in the constitution, functioning of the Constitution-Cases regard to Governor and President's Rule.
- List out the major amendments to the constitution, Commission and committee to review power sharing.
- Examine the functioning of various political parties, its inclusive approaches, influence of dynasties on their performance.

Suggested Readings

1. Iqbal Narain, State Politics in India, Meenakshi Prakashan, New Delhi, 1967.
2. Rajani Kothari, Politics in India, Orient Longman, 1970.
3. D. Basu, An Introduction to the Constitution of India, New Delhi, Prentice Hall, 1980.
4. Granville Austin, The Indian Constitution: Corner Stone of a Nation, Oxford University Press, India, 1966.
5. C. P. Bhambhari, The Indian State, Fifty Years, New Delhi, Shipra, 1997.
6. V. Pylee, Constitutional Government in India, Bombay, Asia Publishing House, 1977.
7. J. C.Johri, Indian Government and Politics, Vol. 1, Shoban Lal and Company, India, 2012.
8. Weiner, Party Politics in India, Princeton University Press, 1957.
9. A. G. Noorani, Constitutional Questions in India: The President, Parliament and the States, Delhi, Oxford University Press, 2000.
10. A.S. Narang, Indian Government and Politics, Geetanjali Publishing House, New Delhi, 1996.
11. Bidyut Chakrabarty & Rajendra Kumar Pandey, Indian Government and Politics, SAGE, New Delhi, 2008
12. D.D. Basu, An Introduction to the Constitution of India, 25th Edition, LexisNexis, India, 2021.
13. M.P. Singh & Rekha Saxena, Indian Politics: Contemporary issues and Concerns, Prentice Hall of India, Delhi, 2008.
14. M. V. Pylee, An Introduction to the Constitution of India, New Delhi, Vikas, 1998.
15. Nirja Gopal Jayal & Pratap Bhanu Mehta, The Oxford Companion to Politics in India, Oxford University Press, New Delhi, 2010.
16. Sunder Raman. Indian Government and Politics, Allied Publishers, New Delhi, 1988.
17. C. P. Bhambhari, The Indian State Since Independence: 70 Years, New Delhi, Shipra, 2017.

Pedagogy:

The course shall be taught through the Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	**40**

Sd/-

Subject Committee Chairperson

PARLIAMENTARY PROCEDURES IN INDIA

DSC-6

Course Title: **PARLIAMENTARY PROCEDURES IN INDIA**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2 Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40=100**

Course Objective:

The course attempts to make the students familiar with legislative practices in India with an orientation to equip them with the adequate skills of participation in deliberative processes and democratic decision making. This aims at providing the basic understanding of the constitutional provisions relating to parliamentary procedures and the accessories of the same. This will help the students to understand the working of democracy through an institutional mechanism.

Learning Outcome:

At the end of the course the students shall -

- Aim at understanding the procedural aspects of parliamentary system of governments.
- Learn about the privileges of people's representatives and match it with their performance.
- Understand the working of committees, budgetary aspects and deliberative mechanism within the parliament.

Unit	Contents of Course-6	45 Hours
Unit-I	**Chapter-1:** Conceptualising Parliamentary Procedure-Meaning, Objectives and Importance. **Chapter-2**: Powers and Functions of People' Representatives - Parliament and State Legislature.	

	Chapter-3: Parliamentary Procedures in Lok Sabha and Rajya Sabha.	
Unit-II	**Chapter-4**: Kinds of Bills: Ordinary Bills, Money Bills, Finance Bills, Private Member Bills. **Chapter-5:** Drafting of the Bill, First Reading and Departmental Standing Committee, Second Reading, Third Reading, Passage of the Bill, Consent by the President, Gazette Notifications. **Chapter-6:** Parliamentary Committees: Composition and Functioning (Departmental Standing Committees, Select Committees, Joint Parliamentary Committees, Public Accounts Committee, Business, Advisory Committee, Ethics Committee).	**15 Hours**
Unit-III	**Chapter-7:** Motions and Hours in the House: Question Hour, Zero Hour, Half an Hour Discussion, Calling Attention Motion, Adjournment Motion, Privilege motion, Censure motion, 'No-confidence' motion, Cut motion. **Chapter-8:** Parliamentary Questions: Types, Starred and Unstarred Questions, Questions Addressed to Private Members and Short Notice Questions. **Chapter-9:** Parliamentary Privileges: Constitutional Provisions, Codification of Privileges, Privileges of Parliamentarians and Legislators.	**15 Hours**

Exercise:

- The college can organise mock parliaments and teach students the etiquettes of parliamentary behaviour.
- Can organise debates on the codification of privileges and match it with the performance of people's representatives.
- Can organise special lectures by inviting officers/bureaucrats to deliberate on the procedural aspects of democracy.

Suggested Readings

1. M.N. Kaul and S.L. Shakdher, Practice and Procedure of Parliament, Metropolitan, New Delhi, 1968.
2. Subhash C. Kashyap, Our Parliament, National Book Trust, New Delhi, 2021.
3. S H. Belavadi, Theory and Practice of Parliamentary Procedure in India, 1988.
4. Study Material on Parliamentary Practices and Procedures. Lok Sabha Secretariat Parliamentary Research and Training Institute for Democracies (Erstwhile BPST), New Delhi.
5. Apoorva Shankar and Shreya Singh, Parliamentary Procedures A Primer Rajya Sabha, PRS Legislative Research, 2015.
6. ಅನಂತರಾಮಯ್ಯ, ಅನುವಾದಕರು, ನಮ್ಮ ಸಂಸತ್ತು ಸುಭಾಷ ಕಶ್ಯಪ್, ಆರ್ಎಲ್, National Book Trust, India, 2015.
7. Dr. K. S. Chauhan, Parliament Powers Functions And Privileges, LexisNexis, India, 2013.
8. Ajit Ranjan Mukharjea, Parliamentary Procedure in India, Oxford University Press, 1958.
9. M N. Kaul, Parliamentary Institutions and Procedures, National Publishing House, 1978.
10. Jalan, India's Politics, Penguin, New Delhi, 2007.
11. Abbas, H., Kumar, R. & Alam M. A., Indian Government and Politics, Pearson, New Delhi, 2011.
12. Chakravarty, B. & Pandey, K. P, Indian Government and Politics, Sage, New Delhi, 2006.
13. K. Sanyal, Strengthening Parliamentary Committees, PRS, Centre for Policy Research, New Delhi, 2011.

    Available at: http://www.prsindia.org/administrator/uploads/media/Conference %202011/Strengthenin g %20Parliamentary%20Committees.pdf.

Pedagogy:

The course shall be taught through the Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, and Mock Parliaments as Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	**40**

Sd/-

Subject Committee Chairperson

GENDER AND POLITICS

Open Elective- OE- 3.1

Course Title: **GENDER AND POLITICS**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2 Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40=100**

Course Objective:

Learning Outcomes:

At the end of the course the students shall -

- Answer how ideologies have shaped the women in politics
- Bring awareness of the relevance of gender issues in politics.
- Through discussions on women and governance understand the ground realities about politics in relation to women.

Unit	Contents of Course-OE-3.1	45 Hours
Unit-I	**Chapter-1:** Defining Gender, Significance of Gender Studies, Difference between Gender Studies and Women Studies, Feminist Perspectives (with reference to India), Opportunities and Constraints. **Chapter-2:** Gender Imbalance in Political Representation and Electoral Process, Gender Discrimination in Indian Politics –	**15 Hours**

	including LGBTQ, Feminist Critique of Politics. **Chapter-3:** Governance and Gender Structures, Gender Budgeting and Gender Issues in Governance.	
Unit-II	**Chapter-4:** Gender and Empowerment Process: Education, Economic, Political and Socializing and sensitizing gender issues. **Chapter-5:** Gender Differentiation in Political Parties and Leadership, Challenging Gender Stereotypes in Socio-Political sphere. **Chapter-6:** Capacity Building and Role of Women in Karnataka Politics, Women Representation in Local Governments.	**15 Hours**
Unit- III	**Chapter-7:** Women and Poverty, Women and Health, Women and wealth creation, Violence against Women, Women and Armed Conflict. **Chapter-8:** Women and Literature, Women and the Media, Women and the Environment. **Chapter-9**: Women and Societal Challenges: Dowry, Domestic Violence, Girl Child - Programs for Empowerment of Women,	**15 Hours**

Exercise:

- Conduct one day workshop and make an assessment of role of women in politics.
- Collage making, short films and video watching can be done by the students and measures can be discussed to minimise the gender gap.
- Students can make field visits to understand the persistent of patriarchal values and traditions.

Suggested Readings

1. P.K.Swaib and S.N.Tripathy, "Unequal Treatment to Women and Gender", Bias, Sonali Publications, New Delhi, 2006.
2. Malashrilal, Chandra Mohan, Enakshi K.Sharma, Devika Khanna Narula and Amrit Kaur Basra, "Gender and Diversity", Rawat Publications, Jaipur, 2015.
3. Andrew Heywood, "Global Politics", Palgrave Macmillan Publication, New York, 2014.
4. Kranti Rana, "Modern Working Women and the Development Debate", Kanishka Publishers, New Delhi, 1998.
5. Dr.Tanuja Trivedi, "Encyclopedia of Women's Empowerment", Janapada Prakashan, New Delhi, 2012.
6. Bhaswati Das and VimalKhawas, "Gender Issues in Development –Concerns for the 21st century", Rawat Publications, New Delhi, 2009.
7. U. Kalpagam, "Gender and Development in India: Current Issues", Rawat Publication, 2011.
8. B.N.Singh, "Rural Women and Education," vista International Publishing House, Delhi, 2016.
9. Meera Kosambi, "Women writing Gender", Permanent Block Publication, New Delhi, 2012.
10. Brush, Lisa D., Gender and Governance, Rawat Publications, New Delhi, 2007.
11. Sangeeta Bharadwaj, "Gender, Social Structure and Empowerment Status Report of Women in India", Rawat Publication, 2009.
12. Dr.Tapan Biswal, "Human Rights Gender and Environment", Viva Books Private Ltd, New Delhi, 2006.
13. Dr. S. Murty, "Women and Employment", RBSA Publishers, Jaipur, 2001.
14. Singh, Narpat, 'Changing Status of Women' Vista International Publishing House, Delhi, 2008.
15. Anuradhamathu, "Gender and Development in India", Kalpaz Publication, Delhi, 2008.
16. M.Bahati Kumba, "Gender and Social Movements", Rawat Publication, New Delhi, 2003.
17. Saxena, Alka, Women and Political Leadership, Altar Publishing House, New Delhi, 2011.

Pedagogy:

The course shall be taught through the Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	**40**

Sd/-

Subject Committee Chairperson

UNDERSTANDING GANDHI

Open Elective – OE- 3.2

Course Title: **UNDERSTANDING GANDHI**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2 Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40=100**

Course Objective:

The course objective is to bring to the attention of the younger generation the core elements of Gandhian thought and Gandhi's approach to the key issues of contemporary India. This paper covers a wide range of issues including politics, economics, social reconstruction, religion and issues of sustainable development which provides insight into the idea of what Gandhi propagated as a political thinker. His ideas of Hindu-Muslim relations or critique of modern society, Swadeshi etc., makes Gandhi relevant to the current political discourses.

Learning Outcome:

At the end of the course the students shall -

- Be able to explain the idea of truth and non-violence which is the foundation of Gandhian Philosophy.
- Know the position of Gandhi on issues like Hindu- Muslim relations, gender question, cow protection, caste and untouchability questions.
- Answer his reason for his choice of Swadeshi and his critique of modern Civilization.

Unit	Contents of Course- OE-3.2	45 Hours
Unit-I	**Chapter-1:** Background Influences: Historical: South Africa, Intellectual: Thoreau, Ruskin and Tolstoy. **Chapter-2:** Gandhian Experiments: Satyagraha, Non-Violence, Truth, Movements by Gandhi- Champaran, Bardoli, Khilafat, Non- Cooperation, Salt Satyagraha. **Chapter-3:** Social Movements- Ahmedabad Mill Strike, Vaikom Satyagraha.	**15 Hours**
Unit-II	**Chapter-4:** Gandhi as a Leader: Gandhian Methodology: Prayer, Consensus Building and Fasting. **Chapter-5:** Gandhian Views on Politics: Ethics, Morality, Religion and Service. **Chapter-6:** Gandhi's critique on English Parliament, Gandhi on Nation and Nationalism.	**15 Hours**
Unit- III	**Chapter-7:** Gandhi on Swadeshi and Swaraj, Critique on Modern Civilization, Modern Education. **Chapter-8:** Gandhi on Violence (Doctrine of the Sword) Gandhi and Sins, Gandhi's views on Women and Sustainable Development. **Chapter-9** Gandhi as Political Strategist, Gandhi's Views on Hindu-Muslim Relation, Cow Protection, and Untouchability.	**15 Hours**

Exercise:

- Students shall have a group reading of Gandhiji's texts like Hindswarj, My Experiment with truth, Sarvodaya, etc,
- Shall conduct the group discussion on the significance of Satyagraha, Sustainable Development, Swadeshi, etc.
- By reviewing literature on Gandhian critiques students can discuss the strengths and weakness of Gandhian Philosophy and his relevance in 21st century.

Suggested Readings

1. Lal, V, The Gandhi Everyone Loves to Hate, Economic and Political Weekly, 43(40), 2008, pp. 55-64.

2. Power, P, Towards a Re-Evaluation of Gandhi's Political thought. The Western Political Quarterly, 16(1), 1963, pp. 99-108.

3. Gandhi , M. K, Hind Swaraj, Navajivan Publishing House, Ahmedabad, 1939, pp 49-55.

4. Indian Council for Historical Research, The Logic of Gandhian Nationalism Civil Disobedience and the Gandhi- Irwin Pact ,1930-31, Indian Historical Review, 1976.

5. Dey, A. Islam and Gandhi: A Historical Perspective. Social Scientist, 41(3/4), 2013, pp. 19- 34.

6. Chandra, B, Gandhiji, Secularism and Communalism. Social Scientist, 32(1/2), 2004, pp. 3-29.

8. Parekh, B, The Critique of Modernity In Gandhi: A Brief Insight, Sterling Publishing Company, Delhi, 1997. pp. 63-74.

9. Heredia, R, Interpreting Gandhi's Hind Swaraj, Economic and Political Weekly, 34(24), 1999. pp. 1497-1502.

10. Parel, A. J. (Ed.), Introduction. In: Gandhi, freedom and Self Rule, Vistaar Publication, Delhi, 2002.

11. Kumar, R. Class, Community or Nation? Gandhi"s Quest for a popular consensus in India, Modern Asian Studies, 3(4), 1969, 357-376.

12. Parel,A.J. (Ed), Introduction. In: Gandhi, Freedom and Self Rule, Vistaar Publication, Delhi, 2002.

15. Sarah Claerhout Gandhi, Conversion, and the Equality of Religions: more experiments with truth, Numen-International Review for the History of Religions, 61(1), 2014, p.53-82.

16. Collected Works of Mahatma Gandhi Hindu-Muslim Tension: Its Cause and Cure, Young India, 1924, pp. 58-59.

17. Collected Works of Mahatma Gandhi: Save the Cow, Young India, 1921.

18.http://www.gandhiashramsevagram.org/gandhi-literature/mahatma-gandhi-collected-worksvolume-23.pdf.

Pedagogy:

The course shall be taught through the Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	**40**

Sd/-

Subject Committee Chairperson

CITIZEN, CITIZENSHIP AND THE INDIAN CONSTITUTION

Open Elective OE- 3.3

Course Title: **CITIZEN, CITIZENSHIP AND THE INDIAN CONSTITUTION**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2 Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40=100**

Course Objective:
This course aims at understanding the concept of citizenship. This course supports to develop an understanding of mindfulness, empathy and compassion and use these as tools to enhance one's emotional wellbeing and social relationships within a society. It further helps nation building by inculcating responsible citizenship among the students.

Learning Outcome:

At the end of the course the students shall -

- Take part in social reconstruction as responsible individuals and will learn to develop own identities.
- Demonstrate pro-social behaviour towards others, including those belonging to a different race, ethnicity, culture, colour, gender or nationality.
- Understand and appreciate rights and privacy of other fellow citizens.

Unit	Contents of Course- OE- 3.3	45 Hours
Unit-I	**Chapter-1**: **Concept of Citizen:** Subject- Slave-Citizen: a Comparison, Constitutional Provisions **Chapter-2: Citizenship in India: Milestones-** Citizenship and Partition of India (Nehru and Liyaqat Ali Khan Pact) The Citizenship Act, 1955, The Citizenship (Amendment) Act, 2003 and 2005, National Register of Citizens (NRC). **Chapter-3:Citizens and Constitutional Provisions:** Fundamental Rights and Duties, Socio-Economic and Cultural	**15 Hours**

	Rights.	
Unit-II	**Chapter-4: Citizenship Issues in India:** Laws for Immigrants, Laws for Migrants and Asylum seekers, Process of acquiring Citizenship. **Chapter-5: Dual Citizenship:** Needs and Demands- Impact of Globalization, Advantages of Dual Citizenship. **Chapter-6**: **IPC and Citizens Rights:** First Information Report, Arrest, Detention, Bail Provisions, Sedition Act.	**15 Hours**
Unit- III	**Chapter-7**: **Citizen and His Responsibility:** Constitutional Provisions, Right to Privacy, Role of NGO's. **Chapter-8: Citizen and Discrimination:** Caste, Gender (LGBTQ), language, Race, Color, Place of Origin. **Chapter-9: Protection of Citizens:** Women and Property Rights, Rights of Forest Dwellers, and Displaced People (War, Natural Calamities and Rehabilitation)	**15 Hours**

Exercise:

Students and teachers collectively work towards building communication network among vulnerable citizens who have no knowledge about their own rights.
Through activities they may form empowering groups and support immigrants/ migrants resolve their legal issues with authorities like police and government.
They may visit courts, police stations, regional passport offices and spread the laws relating to migrants, immigrants regarding their rights.

Suggested Readings

1. Marcus Raskin, 'Nation Building and Citizenship: Studies of our Changing order' Rutledge India, New Delhi, 1996.
2. Atul Kolhi, 'Democracy and Discontent: India's growing crises of Governability, Cambridge University Press, 1991.
3. Atul Kolhi, The success of India Democracy, Cambridge University Press, 2001.
4. Savitaha Rao, India's Positive Citizen Building- A Great Nation One Action At A Time, Wings Publishing, Bangalore, 2020.
5. Anupama Roy, 'Mapping Citizenship in India', (Oxford India short introductions), Oxford University Press, New Delhi, 2012.
6. Nirag Gopal Jayal, 'Citizenship and its Discontents', Harvard University Press, 2013.
7. Ornit Shani, 'How India become a democratic citizenship and making of the Universal Franchise', Cambridge University Press, New Delhi, 2017.
8. Koenig Lion, 'Cultural Citizenship in India; Politics Power and Media', Oxford University Press, New Delhi, 2016.
9. Blog.mygov.in/we-the-people-we-the-citizen.
10. Subrata .K.Mitra, 'Citizenship as cultural flow, structure agency and flow', e-Book, 2013, springer link.

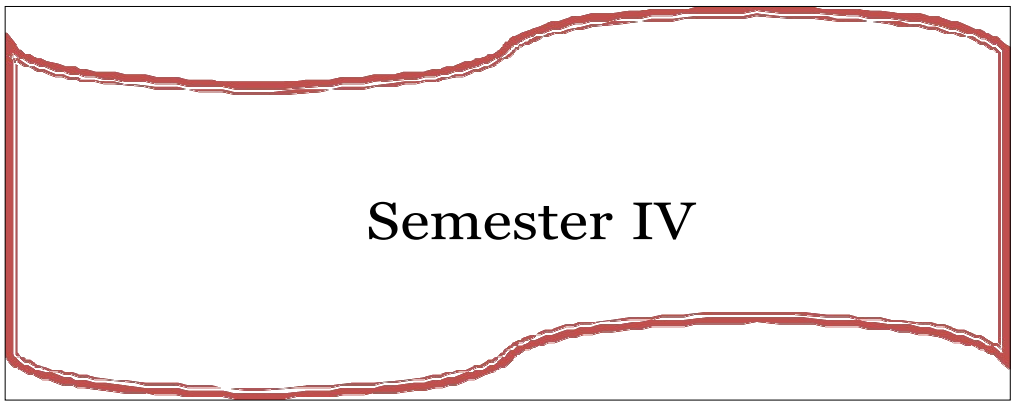
Pedagogy:

The course shall be taught through the Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	**40**

Sd/-

Subject Committee Chairperson


Semester IV

ANCIENT INDIAN POLITICAL IDEAS AND INSTITUTIONS

DSC - 7

Course Title: **ANCIENT INDIAN POLITICAL IDEAS AND INSTITUTIONS**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40=100**

Course Objectives:

The paper aims at developing an understanding of the Social and political philosophy of ancient India to assess the modern notions about socio-political arrangements. Further it helps to analyze the process of decolonizing Indian minds related to India's glorious past. The objective thus being to throw light on the indigenous political theories and their relevance to changing times.

Learning Outcome:

At the end of the course the students shall -

Reflect on the native concepts like Dharma, Rajadharma, Nyaya, Viveka etc., in the light of their modern connotations.

Understand the role of texts and stories in the Indian context by reflecting upon our own experiences.

Revisit our own socio-political structures through the textual and non-textual sources from the early Indian period in order to quell the European representation of Indian Society and heritage.

Unit	Contents of Course- DSC 7	45 Hours
Unit-I	**Chapter-1: Sources of Early Indian Thought:** Sources and Pre and Post-Colonial Period. **Chapter-2: Perspectives:** Orientalists, Nationalists, Gandhiji on Varnashrama Dharma, Dr. Radhakrishan perspective. **Chapter-3**: **Indian Culture**: Colonial Narratives (William Jones, Macaulay) v/s Post-Colonial (Edward Said, and S.N. Balagangadhar)	**15 Hours**
Unit-II	**Chapter-4: Socio-Political Ideas in the Early Indian Thought:** Dharma, Rajadharma, Dandaniti, Nyaya, Vaisheshika, Shunya, Ratnin Ceremony, Varnadharma, and Ashramadharma, values in Thirukural. **Chapter**-5: **Kingship**: Origin Stories, Gopati to Bhupati, Nature and Structure. **Chapter-6**: **Functions of Institutions**: Sabha, Samiti, Vidhata, Paura-Janapada.	**15 Hours**
Unit- III	**Chapter-7**: **Ganasanghas:** Nature, Structure, Functions Role of Stories in Indian Tradition. **Chapter-8: Ramayana (Valmiki)**: Ramarajya, Subaltern and Adhyatmic perspective. **Chapter-9: Mahabharata (Vyasa):** Rajadharma in Shantiparva, Idea of war and Peace.	**15 Hours**

Exercise:

Close reading sessions to be organised to understand the ancient text in its original context by way of discussions.
Students shall visit the nearby historical places and collect artifacts, stories, and other relics with the help of the native people.
Students shall respond to accommodate the important criticisms of Ramayana and Mahabharata by its critics and enact dramas and costumes.

Suggested Readings

1. Alterkar A.S, State and Government in Ancient India, Motilal Banarsidass, Chowk Banaras, 1949.
2. R.S. Sharma, Early Indian Social and Political Thought and Institutions (Aspects of the Political Ideas and Institutions in Ancient India, Motilal Banarsidass, Delhi, 1991.
3. Jayaswal K.P, Hindu Polity, Bangalore Printing and Publishing Co. LTD, Bangalore, 1943.
4. Goshal U.N, History of Hindu Political Theory, Oxford University Press, Culcutta, 1923.
5. Kangle R.P, Kautilya's Arthasastra, Motilal Banarsidass Publishers Pvt.Ltd, New Delhi, 1986.
6. Bhandarkar D.D, Some Aspects of Ancient Indian Culture, Madras, University of Madras, 1940.
7. Romila Thaper. From Lineage to State, Oxford University Press, United Kingdom, 1984.
8. R.S.Sharma, Shudaras in Ancient India, Motilal Banarsidass, Delhi, 1957.
9. Sharma,R. S India's, Ancient Past, Oxford University Press, New Delhi, 2006.
10. Sharma,R. S, Rethinking India's Past, Oxford University Press, New Delhi, 2010.
11. Kraedar Lawarence, "Formation of the state", Prentice Hall, United State, 1968.
12. Kosambi. D.D, "Introduction to the Study of Indian History", Popular Prakashan, Mumbai, 1956.
13. Said Edward, Orientalism, Pantheon Books, USA, 1978.
14. Misra Vibhuti Bhushan, From the Vedas to the Manusamhita, City/Country Brill Academic, United States, 1982.
15. Sircar D.C, Studies in the Religious life of Ancient and Medieval India, Motilal Banarsidass, Delhi, 1971.
16. Aiyangar K.R, Ancient Indian Polity, Oriental Books Agency, Poona, 1941.
17. Pargiter R, Ancient Indian Historical Tradition, Oxford University Press, London, 1922.
18. Levin G.M, Bongard, A Complex Study of Ancient India – Multidisciplinary Approach, American Oriental Society, USA, 1989.
19. Kumar S, "Role of State in Ancient India Economy", Ramanand Vidya Bhawan, Delhi, 1986.
20. Sircar D.C, Political and Administrative System of Ancient and Medieval India. Motilal Banarsidass, Delhi, 1975.
21. Maity S. K and Upendra Thakur, Indological Studies, Abhinav Publications, New Delhi, 1991.
22. Mukherjee Shobha, The Republican trends in Ancient India. Munshiram Manoharial Publishers Private Limited, New Delhi, 1989.
23. Bandyopadhya N.C, Development of Hindu Polity and Political Theories, Munshiram Manoharlal Publishers, New Delhi, 1980.
24. Chattopadhyaya D. Lokayata, Peoples Publishing House, New Delhi, 1959.

25. Kosambi D.D, The Culture and Civilization of Ancient India and Historical Outline, Vikas Publishing House Pvt. Ltd, Noida, 1965.
26. Majumdar R. C, History and Culture of Indian People, Vol.I, Dacca University, Bangladesh, 1977.
27. Kulke, Hermen (Ed), State in India, 1000 to 17000, Oxford University Press, Delhi, 1995.
28. Kane P.V, History of Dharmashastras,Vol-1-5, Bhandarkar Institute Press, Poona, 1930.
29. Balagangadhara S.N, Purvavalokana, (Translated and Edited - Rajaram Hegde and J. S. Sadanand) Vasanta Prakashana, Bangalore, 2016. (2010).

Pedagogy:

The course shall be taught through the lecture, tutorial, interactive sessions, self-guided learning materials, Open Educational Recourses (OER) as reference materials, Close-Reading Sessions of texts, assignments, seminars, group discussions and week-end seminars.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	**40**

Sd/-

Subject Committee Chairperson

MODERN POLITICAL ANALYSIS
DSC-8

Course Title: **MODERN POLITICAL ANALYSIS**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2 Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40=100**

Course Objective:

The objective is to equip students to develop insights into political institutional functioning keeping in insight both the normative and empirical ways of understanding. This paper also throws light on value laden functioning and value neutral aspects of systems output that will help students to understand and evaluate Governments. It aims at scientifically assessing the functioning of the government as result oriented institutions.

Learning Outcome:

At the end of the course the students shall -

- Understand the key concepts of Political Institutional working and science within them.
- Be familiar with the Phenomenon of politics and various explanations relating to the influences that mould the decision making process.
- Help the students to visualize the working of political institutions and the process of decision making through diagrammatic presentations.

. **Unit**	**Contents of Course: DSC-8**	**45 Hours**
Unit-I	**Chapte-1** Genesis and Emergence of Modern Political Analysis, Modern Political Analysis -Meaning, Nature, Scope **Chapter-2** Political System-Types, similarities and differences, classification- Aristotle and Weber. **Chapter-3** Approaches – Traditional- Philosophical, Historical Modern- Behavioral, Systems approach	**15 Hours**

Unit-II	**Chapter-4** Talcott Parson's General Systems theory- Pattern of Inter Relationship, Hierarchical order, Integration. **Chapter-5** David Easton's Input-Output model of Political System, Features, Functions and Critical Evaluation. **Chapter-6** Power-Meaning, significance, and measurement, difference between Power, Authority, Legitimacy and Influence.	**15 Hours**
Unit- III	**Chapter-7** Almond on Structural – Functional Analysis Karl Deutsch's Communication Theory. **Chapter-8** Richard C Snyder's Decision-Making Theory, Arthur F. Bentley and David Truman Group theory of Politics. **Chapter - 9** Political Development - Concept of Political Development - Development syndrome, Theory of Lucian Pye.	**15 Hours**

Exercise:

The department can lead the students to a nearby political institution and explain to them the process of administrative decision making.

The department may invite functionaries of these institutions to deliberate upon issues of redundancy and simplifying administration.

Assignments can be given to the students to innovate methods of simplification of administrative procedures in offices of Governments and offer consultancy.

Suggested Readings

1. Almond, G. and Coleman. J.S. "The politics of the Developing Areas", Princeton University Press, Princeton NJ, 1960.
2. Almond, G.A. and Verba, S, "The Civic Culture: political Attitudes and Democracy in Five Nations", Princeton NJ, Princeton University Press, 1963.
3. Amin, S, "Accumulation on an old Scale: A Critique of the Theory of Underdevelopment", Monthly Review Press, New York, 1974.
4. Apter, D.E, "The Politics of Modernization", University of Chicago Press, Chicago, 1965.
5. Gabriel Almond, "Cooperative Politics: A Development approach" Little Brown, Boston, 1966.
6. Hannah Arendt, "The Origins of Totalitarianism", Harcourt Press, New York, 1951.
7. Johari, J.C, "Comparative Government and Politics", Sterling Publishers Private Limited, New Delhi, 1982.
8. Powell, G.B, Russell J.D, and Kaare Strom, "Comparative Political Today, A World View". London Press, New York, 1970.
9. Rod Hague. Martin Harrop, Shaun Breslin, "Comparative Government and Politics", Palgrave Macmillan press, UK, 1992.
10. Verba S and Almond, "The Civic Culture Revisited", little Brown, Boston, 1980.
11. Dahl, Robert A, Modern Political Analysis, Prentice Hall of India, New Delhi, 1981.

Pedagogy:

The course shall be taught through the Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	**40**

Sd/-

Subject Committee Chairperson

GOOD GOVERNANCE IN INDIA

Open Elective OE - 4.1

Course Title: **GOOD GOVERNANCE IN INDIA**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2 Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40=100**

Course Objective:

The course directed to familiarize the student to understand the elements of Good Governance which has the effect on day today life. The purpose is to show to them that states are changing their approach to Administration giving importance to stakeholders. Some of the programs mentioned in the syllabi exemplifies the same. The aim is to help students to link the theory in the class room with realities in the outside world.

Learning Outcome:

At the end of the course the students shall -

- Understand the difference between traditional form of Administration and the concept of Governance
- Get a perspective of changing modes of Governance with the examples drawn from central and state Governments.
- Appreciate the participation of citizens in day to day Administration through a charter and other programmes like Sakala, Bhoomi etc,.

Unit	**Contents of Course: OE-4.1**	**45 Hours**
Unit-I	**Chapter- 1** Meaning, Characteristics, and need for Good Governance. **Chapter-2** Theories and Concepts of Governance- Public Choice and Public Value Theory, Good Governance and	**15 Hours**

	Globalization. **Chapter-3** Corporate Governance- Networking and Collaborative Governance	
Unit-II	**Chapter-4** Public Service Guarantee Act 2011: Features, Provisions, Right to Information Act- Meaning, Characteristics and Importance. **Chapter-5** E-Governance - Meaning, Characteristics, Importance ICT Policy and Governance. **Chapter-6** Citizens Charter, Digital India, Gender and Governance.	**15 Hours**
Unit- III	**Chapter-7** Sakala Project, Bhoomi Yojana, SWAYAM and eKissan, eCourt. **Chapter-8** People's Participation and Role of Civil Society, Ethics and Accountability in Governance. **Chapter-9** Challenges before good governance in India.	**15 Hours**

Exercise:

Students and the department can undertake survey regarding causes and consequences of failed administration.
Through activities they can visit their respective villages and prepare papers regarding the working of programmes like Sakala, Bhoomi etc,.
The department may invite officers connected to Governance projects and have interaction with the students.

Suggested Readings

1. Kanak Kanti Bagchi, Good Governance and Development, Abhijeet Publications, New Delhi, 2009,

2. C.P Bharthwal Ed. Good Governance in India, Deep and Deep, New Delhi, 2003.

3. Dhameja Alka Ed, Contemporary Debates in Public Administration, Prentice Hall of India, New Delhi, 2003.

4. World Bank, Governance and Development, Washington, DC, 1992.

5. Niraja Gopal Jayal, Ed, Democratic Governance in India, Sage, New Delhi, 2003.

Pedagogy:

The course shall be taught through the Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	**40**

Sd/-

Subject Committee Chairperson

UNDERSTANDING Dr. B.R. AMBEDKAR

Open Elective OE -4.2

Course Title: **UNDERSTANDING Dr. B.R.AMBEDKAR**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2 Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40=100**

Course Objective:

This course is designed to familiarize the students with arguments and position of Dr. B.R. Ambedkar on key social, political, constitutional and democratic issues in India and enable them to critically examine his perceptions. Besides the constitutional questions and fight for the oppressed communities which are largely popular in academic and political discourses, has been designed to make students to understand his ideas. On the partition of the country and the Indian historiography his views have been valuable and this paper intends to bring to the reach of the students.

Learning Outcome:

At the end of the course the students shall -

- Be able to understand his life, mission, vision and his key role in the making of the Indian Constitution.
- Be able to appreciate and sensitize his views on democracy, citizenship, freedom, equality equal treatment and justice.
- Understand his views on the some of the important debates like Aryan Invasion Theory, Uniform Civil Code, Islam and partition of India.

. **Unit**	**Contents of Course OE 4.2**	**45 Hours**
Unit-I	**Chapter: 1**- Dr. B. R. Ambedkar's Journey of Life and Experiences. **Chapter: 2**- Dr. B. R. Ambedkar's perception on Hindu Social Order, Caste and Untouchability (refer Annihilation of Caste).	**15 Hours**

	Chapter-3- Dr. B. R. Ambedkar's Initiatives: Mahad Satyagraha, Kalaram Temple Entry Movement.	
Unit-II	**Chapter: 4-** Dr. B. R.Ambedkar and Round Table Conference: His Memorandum, Communal Award and Poona Pact. **Chapter: 5-** Dr. B. R. Ambedkar on Partition of India, Dr. B. R. Ambedkar's contribution as the Chairman of the Drafting Committee. **Chapter 6** - Dr. B. R.Ambedkar's deliberations on key issues in the Constituent Assembly (Article 370, Uniform Civil Code, Hindu Code Bill, and Affirmative Action).	**15 Hours**
Unit- III	**Chapter: 7-**Dr. B. R.Ambedkar's Political Ideas: Democracy, Equality, Freedom and Justice. **Chapter: 8:** Dr. B. R. Ambedkar's views: on Islam, Buddhism, on Religious Conversion. **Chapter: 9-**Dr. B. R.Ambedkar and Language Question, Dr. B. R.Ambedkar on Education and Women Empowerment and Nationalism.	**15 Hours**

Exercise:

Students and teachers collectively debate on the issues of Reservation, Constitutional provisions of reservation, reservation within reservation, creamy layer theory, etc,.
Give assignments to students to visit colonies of Scheduled Caste and Scheduled Tribes and discuss it in the group about the perception that they have carried.
Debate on the need for social reform, inclusiveness, changing the cultural and religious outlook among the Indian citizens keeping the view inhuman practice like untouchability, exploitation. And further visit courts, police stations, etc, to understand conflict resolution mechanisms.

Suggested Readings

1. Ambdekar, B.R. "What Congress and Gandhi have Done Untouchables"http://www.ambedkar.org/ambcd/41A.What%20Congress%20and%20Gandhi%20Preface.htm.
2. Ambedkar Annihilation of Caste, Navayana, 11th Edition, 2015.
3. Dhanjaya Keer, Dr.Ambedkar-Life and Mission, Popular Prakashana, Bombay, 1964.
4. Valerian Rodrigues, Essential Writings on Ambedkar, OUP, New Delhi, 2003.
5. Marcus Raskin, 'Nation Building and Citizenship: Studies of our Changing order' Rutledge India, New Delhi, 1996.
6. Atul Kolhi, 'Democracy and Discontent: India's growing crises of Governability, Cambridge University Press, 1991.
7. Atul Kolhi, The Success of Indian Democracy, Cambridge University Press, 2001.
8. Savitaha Rao, India's Positive Citizen Building- A Great Nation One Action At A Time, Wings Publishing, Bangalore, 2020.
9. Nirag Gopal Jayal, 'Citizenship and its Discontents', Harvard University Press, 2013.
10. Koenig Lion, 'Cultural Citizenship in India; politics power and media', Oxford University Press, New Delhi, 2016.
11. Subrata K. Mitra, 'Citizenship as cultural flow; structure agency and flow', e-Book, Springer link, 2013.
12. Sharma, A, Dr. B.R. Ambedkar on the Aryan Invasion and the Emergence of the Caste System in India, Journal of the American Academy of Religion, 73(3), 2005, pp. 843-870.
13. Ambedkar, B. R. (1946). Pakistan or The Partition of India, In Narke, H. (2nd ed.), 2014.
14. Dr. B. R. Ambedkar Writing and Speeches, Vol. 8. Delhi: Dr. Ambedkar Foundation, Ministry of Social Justice & Empowerment, Govt. of India.

    Available at: https://mea.gov.in/Images/attach/amb/Volume_08.pdf.
15. Misra, J., & Mishra, J. Dr. B.R. Ambedkar and The Constitution - Making In India, Proceedings of the Indian History Congress, 1991, 52, pp. 534-541.
16. Constituent Assembly Debates, Ambedkar's speech on Draft Constitution on 4th November 1948, CAD Vol. VII, Lok Sabha Secretariat, Government of India, 3rd Print, pp. 31-41.
17. Ambedkar, B. R. Thoughts on Linguistic States. Bombay: Ramakrishna Press, 1955.
18. Dr. Babasaheb Ambedkar Writings & Speeches – Vol.1, to Vol. 17- Published by Social Justice and Empowerment, Govt. of India and Ambedkar Foundation, New Delhi, 2015.

Pedagogy:

The course shall be taught through the Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	**40**

Sd/-

Subject Committee Chairperson

POLITICAL JOURNALISM

Open Elective OE- 4.3

Course Title: **POLITICAL JOURNALISM**	
Total Contact Hours: **45**	Course Credits: **3**
No. of Teaching Hours/Week:**3**	Duration of ESA/Exam: **2 Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60+40=100**

Course Objective:

The objective is to equip students to develop insights into political reporting with an understanding of writing skills supported by grammatical strength and economy of words. Further to provide a broad overview of the nuances of interpreting the political phenomena that takes place in political institutions starting from the grassroots to the parliament.

Learning Outcome:

At the end of the course the students shall -

- Understand the skills of reporting and research insights about the system and its structural contours focusing on Politics.
- Carry out political reporting covering Government and Governance, campaigns and candidates, tactics and strategies and policy issues in the public arena.
- Develop writing and interpretative skills.

. **Unit**	**Contents of Course- OE-4.3**	**45 Hours**
Unit-I	**Chapter-1:** Defining Political Journalism, Traditional and Modern views about State and Politics. **Chapter-2**: Understanding of Political Development: Caste, Religion, Linguistic and Party Perspectives. **Chapter-3:** Defining the Role of Mass Media- Print, Electronic	**15 Hours**

	and Web (Social Media).	
Unit-II	**Chapter-4: Political Culture-** Shared Beliefs, Values, Ideologies and Norms. **Chapter-5: Political Participation** –Modes of participation, Political Apathy. **Chapter- 6: Methods of Political Journalism-** Interviews, Political Debates, Commentary on Legislations.	**15 Hours**
Unit- III	**Chapter-7: Communication-** Defining Communication, Shaping Public Opinion. **Chapter-8: Skills of Writing** - Vocabulary, Epitomizing, Punctuation. **Chapter-9: Report Writing-** Journalistic Writing Skills, Yellow Journalism, Use of Facts and Figures and Interpretations.	**15 Hours**

Exercise:

Conducting classroom Common seminars on Media and Politics

Making students to read and write newspaper headlines focusing on politics**,**

Visit to media houses and talks with senior political news room heads.

Suggested Readings

1. Iorio, Sharon Hartin. Qualitative Research In Journalism, Erlbaum Associates, London, 2004.

2. Merritt, Davis, Public Journalism And Public Life, Erlbaum Associates, London, 2004.

3. Kuhn, Raymond, Political Journalism New Challenges, New Practices, Rutledge, New York, 2003.

4. Sedorkin, Gail, & Mcgregor, Judy. Interviewing – A Guide For Journalist And Writers, Crows Nest, Allen and Unwin, N.S.W, 2002.

5. Mcnair, Brian, Journalism And Democracy, Rutledge, London, 2000.

6. Bovie, Waxen G, Discovering Journalism, Greenwood Press, West Port CT, 1999.

7. Winch, Samuel P, Mapping The Cultural Space Of Journalism, Praeger, West Port CT, 1997.

8. Jangam, R.T. (et al), Political Analysis, Oxford and IBH Publication, New Delhi, 1997.

9. Johari, J.C, Comparative Politics, Sterling Publishers, New Delhi, 1982.

10. Dahl, Robert A, Modern Political Analysis, Prentice Hall of India, New Delhi, 1981.

Pedagogy:

The course shall be taught through the Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	**40**

Sd/-

Subject Committee Chairperson

CONSTITUTION OF INDIA (Common Syllabus for all the UG Courses)

Ability Enhancement Compulsory Courses (AECC)	
Course Title: **CONSTITUTION OF INDIA**	
Total Contact Hours: **24**	Course Credits: 2
No. of Teaching Hours/Week:2	Duration of ESA/Exam: 1 **Hours**
Formative Assessment Marks: 2**0**	Summative Assessment Marks: **30+20=50**

Course Objective:

The purpose of the course is to familiarize the students with the key elements of Indian constitution. The course has been designed to cover the journey of the India from its emergence as a Republic. This will enable the students to understand various political Institutions that are operationalised under the Indian Constitution.

Learning Outcomes:

After completing this course students will be able to-

- Understand the philosophy of the Constitution and its structure.
- Measure the powers and functions of various offices under the Constitution.
- Appreciate the role of Constitution in a Democracy

Unit	Contents of Course:	24 Hours
Unit-I	**Chapter- 1Making of Indian Constitution** : Constituent Assembly- Composition, Objectives, Preamble and Salient features of the Indian Constitution. **Chapter-2** Fundamental Rights, Fundamental Duties, Directive Principles.	**8 Hours**
Unit-II	**Chapter-3 Union Government**-President, Prime Minister and Cabinet. **Chapter-4 State Government**- Governor, Chief Minister and Cabinet.	**8 Hours**

Unit- III	**Chapter-5Judiciary**- Supreme Court and High Court: Composition, Powers and Functions. **Chapter-6Electoral Process**: Election Commission- Composition, Powers and Functions, Electoral Reforms.	**8 Hours**

Exercise:

- Department can debate on the role of Constitution in the country's development.
- Students can empirically evidence the effectiveness of concepts like –Freedom, Equality, Justice, Rights and Duties by conducting surveys.
- Can hold special lectures on various provisions of Constitution like working of Election Commission, Art 246, 356 etc.

Suggested Readings:

1. Durga Das Basu, Introduction to the Constitution of India, Gurgaon; LexisNexis, (23rd edn.) 2018.

2. M.V. Pylee, India's Constitution, New Delhi; S. Chand Pub., (16th edn.) 2017.

3. J.N. Pandey, The Constitutional Law of India, Allahabad; Central Law Agency, (55th edn.) 2018.

4. Constitution of India (Full Text), India.gov.in., National Portal of India, https://www.india.gov.in/sites/upload_files/npi/files/coi_part_full.pdf

6. K B Merunandan, Bharatada Samvidhana Ondu Parichaya, Bangalore, Meragu Publications, 2015.

7. ಪ್ರೋ. ಎಚ್. ಎಂ. ರಾಜಶೇಖರ ಭಾರತ ಸರ್ಕಾರ ಮತ್ತು ರಾಜಕೀಯ, ಕಿರಣ ಪ್ರಕಾಶನ, ಮೈಸೂರು 2020.

8. K. Sharma, Introduction to the Constitution of India, Prentice Hall of India, New Delhi, 2002.

9. P.M Bakshi, Constitution of India, Universal Law Publishing House, New Delhi, 1999.

10. D. C. Gupta, Indian Government and Politics, Vikas publishing House, New Delhi, 1975.

11. S. N. Jha, Indian Political System,: Historical Developments, Ganga Kaveri Publishing House, Varanasi, 2005.

12. Arora & Mukherji, Federalism in India, Origin and Developments, Vikas Publishing House, New Delhi, 1992.

Pedagogy:

The course shall be taught through the Lecture, Tutorial, Interactive Sessions, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials, Practical Exercises, Assignments, Seminars, Group Discussions and Week-end Counseling Classes.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Assessment Test-1	5
Seminar/Presentation/Group Discussion	5
Assessment Test-2	5
Assignment	5
Total	**20**

Sd/-

Subject Committee Chairperson

General Pattern of Political Science Question Paper (NEP- 2020)

I. Term End Examination for Discipline Specific Core (DSC) and Discipline Specific Elective(DSE) Papers

Each paper will be for maximum of 60 mark. The minimum mark to pass the examination is 40% (24 mark) in each theory paper.

Note: Duration of Examination for Discipline Specific Core (DSC) and Discipline Specific Elective (DSE) Papers is **2 hours.**

Question paper pattern for **Discipline Specific Core (DSC) and Discipline Specific Elective (DSE) Papers** –

Section A: Multiple Choice Questions
Section B: Short Answer Questions
Section C: Long Answer Questions

Section A: Multiple Choice Questions

All Questions are Compulsory (10x1=10)

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Section B: Short Answer Questions (2x10=20)

Answer any two questions. Answer the following questions in not more than 500 words

11.
12.
13. 13.

Section C: Long Answer Questions (2x15=30)

Answer any two questions. Answer the following questions in not more than 800 words

14. 14.

15. 15.

16. 16.

II. Term End Examination for Open Elective Papers (OE)

Each paper will be for maximum of 60 mark. The minimum mark to pass the examination is 40% (24 marks) in each theory paper.

Note: Duration of Examination for **Open Elective Papers (OE)** is **2 hours.**

Question paper pattern for **Open Elective Papers** –

Section A: Multiple Choice Questions
Section B: Short Answer Questions
Section C: Long Answer Questions
Section D: Essay type Answer Questions

Section A: Multiple Choice Questions

All Questions are Compulsory (10x1=10)

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Section B: Short Answer Questions (3x5=15)

Answer any Three questions. Answer the following questions in not more than 3-5 sentences.

11.
12.
13.
14.

Section C: Long Answer Questions (2x10=20)

Answer any Two questions. Answer the following questions in not more than 800 words

15.

16.

17. 17.

Section D: Essay type Answer Questions (1x15=15)

Answer any One question. Answer the following question in not more than 1000 words

18. 18.

19. 19.

III. Term End Examination for Constitution of Indian (IC)

Paper will be for maximum of 30 mark. The minimum mark to pass the examination is 40% (12 marks).

Note: Duration of Examination for **Indian Constitution** (IC) is **1 hour.**

Question paper pattern for **Indian Constitution** –

Section A: Multiple Choice Questions
Section B: Short Answer Questions
Section C: Long Answer Questions

Section A: Multiple Choice Questions

All Questions are Compulsory (10x1=10)

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Section B: Short Answer Questions (2x5=10)

Answer any Two questions. Answer the following questions in not more than 3-5 sentences.

11.

12.

13.

Section C: Long Answer Questions (1x10=10)

Answer any One question. Answer the following question in not more than 500 words

14.

15.

Proposed Syllabus-
Political Science Discipline

Submitted to

The Registrar
Rani Channamma University,
Vidyasangama, N. H. – 04
Belagavi

Submitted by

Chairman and Members

of U G BOS – Vth & VIth Semester

Board of Studies: Political Science (UG)

01	**Prof. Kamalaxi Tadasad** Department of Studies in Political Science, Rani Chanamma University, Belagavi.	Chairman
02	**Sri. V. B. Patil**, Assistant Professor Dept. of Political Science, Shri Shantaveer Arts College, Babaleshwar	Member
03	**Sri. Patil Balasab Golanagouda**, Assistant Professor Dept. of Political Science, C. M. Managuli Arts, Science and Commerce College, Sindagi	Member

Structure for Political Science Discipline

Core paper no.	Paper Title	Credit	No. of Teaching Hours/Week	Total Marks/ Assessment
V Semester				
DSC-9	International Relations-Concepts and Perspectives	4	4	**100 (60+40)**
DSC-10	Comparative Government and Politics	4	4	**100 (60+40)**
DSC-11	Karnataka Government and Politics	4	4	**100 (60+40)**
SEC-4	Cyber Security	2	3	**50 (30+20)**
	Total	**14**		
VI Semester				
DSC-13	Theoretical aspects of International Relations	4	4	**100 (60+40)**
DSC-15	Public Policy Analysis	4	4	**100 (60+40)**
DSC-16	Modern Indian Political Thinkers	4	4	**100 (60+40)**
	Internship/Project	2		**50 (30+20)**
	Total	**14**		

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 9-16)

Programe Outcome	**POL C9**	**POL C10**	**POL C11**	**POL C12**	**POL E1**	**POL C13**	**POL C14**	**POL C15**	**POL C16**	**POL E2**
Disciplinary knowledge	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Professional skills	**-**	**-**	**-**	**-**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Application of skills to chosen specialization	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Experimental learning and critical thinking	**Y**	**Y**	**-**	**Y**	**-**	**Y**	**Y**	**Y**	**Y**	**Y**
Application on to administration related problems	**Y**	**Y**	**Y**	**-**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Knowledge of e resources and social media	**Y**	**Y**	**Y**	**-**	**Y**	**Y**	**Y**	**Y**	**-**	**Y**
Skills in scientific writing and effective presentation	**Y**	**-**	**Y**	**-**	**Y**	**Y**	**Y**	**Y**	**-**	**Y**
Critical evaluation of theoretical approaches	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**

Course Title: International Relations -Concepts and Perspectives	
Semester: V	**Course Code: DSC-9**
Total Contact Hours: 60	**Course Credits: 4**
No. of Teaching Hours/Week:4	**Duration of ESA/Exam: 3 Hours**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60+40=100**

Unit	Contents of Course- DSC-9	60 Hours
Unit-I	**Chapter-1:** International Politics and International Relations, Meaning, Nature, Scope of International Relations **Chapter-2:** Evolution of International Relations (From city state to Modern Nation State System) **Chapter-3:** Development of International Relations as an academic discipline	**15 Hours**
Unit-II	**Chapter-4:** World War I: Causes and Consequences, World War II: Causes and Consequences **Chapter-5**: Cold War: Origin of Cold War, Causes and effects. **Chapter-6:** National Interest – Meaning, Elements, Kinds and Instruments for Promotion of National Interests	**15 Hours**
Unit- III	**Chapter-7:** National Power Meaning, Elements of National Power, Limitations and Evaluation of National Power. **Chapter-8:** Balance of Power – Meaning, Nature, Techniques of Maintaining the Balance of Power and Relevance of Balance ofPower in Modern Age **Chapter-9:** Collective security, Diplomacy (Old and New)	**15 Hours**

Unit- IV	**Chapter-10:** Arms Race, Arms control and Disarmament **Chapter-11:** Peaceful Settlement of International Disputes. **Chapter-12:** World order: Unipolar, Bipolar and Multipolar	**15 Hours**

Formative Assessment	
Assessment Occasion/ type	***Weightage in Marks***
Assessment Test-1	*10*
Seminar/Presentation/Group Discussion	*10*
Assessment Test-2	*10*
Assignment	*10*
Total	***40***

Course Title: Comparative Government and Politics (With special reference to UK, USA and China)	
Semester: V	**Course Code: DSC-10**
Total Contact Hours: 60	**Course Credits: 4**
No. of Teaching Hours/Week:4	**Duration of ESA/Exam: 3 Hours**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60+40=100**

Unit	Contents of Course- DSC-10	60 Hours
Unit-I	**Chapter-1:** Comparative Government and Politics: Meaning, Nature, Scope and Importance of Comparative Government and Politics **Chapter-2:** Approaches to the study of Comparative Government and Politics Traditional (Philosophical, Historical, Legal and Institutional) and Modern Approaches (System, Structural Functional, Communication and Decision Making) **Chapter-3:** Types of Government and Politics: Parliamentary, Unitary, Presidential and Federal Government.	**15 Hours**
Unit-II	**Chapter-4:** Method of representation: Direct, Indirect, Proportional, Functional. **Chapter-5**: Constitutionalism- Meaning, Principles (separation of powers, responsibility and accountability, popular sovereignty, Rule of Law, Judicial independence, Individual rights, civilian control over military) Problems and Prospects of Constitutionalism **Chapter-6:** Political Party and Pressure Groups: Definition and classification based on ideology (Single to Multi party systems, Republican-Democratic, Labour-Conservative, Communist, Democratic parties), Pressure Group-Definition, role and Characteristic	**15 Hours**
Unit- III	**Chapter-7:** Political Process: Political Socialisation, Political Culture, Political Representation **Chapter-8:** Legislature (USA, UK, China) **Chapter-9:** Executive (USA, UK, China)	**15 Hours**

Unit- IV	**Chapter-10:** Judicial System (USA, UK, China) **Chapter-11:** Party System (USA, UK, China) **Chapter-12:** Election Process (USA, UK, China)	**15 Hours**

Course Title: Karnataka Government and Politics	
Semester: V	**Course Code: DSC-11**
Total Contact Hours: 60	**Course Credits: 4**
No. of Teaching Hours/Week:4	**Duration of ESA/Exam: 3 Hours**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60+40=100**

Unit	Contents of Course- DSC-11	60 Hours
Unit-I	**Chapter-1:** State Politics in India: Nature and Importance **Chapter-2:** Princely State of Mysore: Evolution of Legislature, Mysore Representative Assembly. **Chapter-3:** Administration and Governance in the Princely State and Reorganization of State**.**	**15 Hours**
Unit-II	**Chapter-4:** Unification Movement: Factors, Role of Vidyavardhaka Sangha and Kannada Sahitya Parishat. **Chapter-5:** Contributions to Unification Movement: Alur Venkatarao: Karnatakatva, Deputy Chennabasappa, Gudleppa Hallikere and Sir Siddappa Kambli. **Chapter-6:** 1924 Belgaum Conference: Hardekar Manjappa and Huilgol Narayan Rao: Swadeshi and Nationalism	**15 Hours**
Unit- III	**Chapter-7:** Caste and Politics: Dominant Caste, Backward Class Movement and AHINDA and Identity Politics. **Chapter-8:** Regionalism and Regional Disparities: Dr. Nanjundappa Report. **Chapter-9:** Language and Politics: Inter State Disputes and Karnataka's Relations with Centre.	**15 Hours**
Unit- IV	**Chapter-10:** Era of Coalitions in Karnataka: (2004 - 2018) its effects on policy making, administration and party politics **Chapter-11:** Politics of Polarisation: Growth of Polarisation in Karnataka politics (INC, JDS, JDU, BJP, AAP, SDP, MES) **Chapter-12:** Demand for Separate State: Challenges for development in North Karnataka with special reference to Kittur and Kalyana Karnataka (Art 371J)	**15 Hours**

SEMESTER VI

Course Title: Theoretical aspects of International Relations	
Semester: VI	**Course Code: DSC-13**
Total Contact Hours: 60	**Course Credits: 4**
No. of Teaching Hours/Week:4	**Duration of ESA/Exam: 3 Hours**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60+40=100**

Unit	Contents of Course- DSC-13	60 Hours
Unit-I	**Chapter-1:** Meaning, Nature, Functions and importance of Theories in International Relations. **Chapter-2:** Classical v/s Scientific – Debate. **Chapter-3:** Realism and Neo-Realism Theories	**13 Hours**
Unit-II	**Chapter-4:** Liberal, Neo-Liberalism, Marxist theory and Neo-Marxist Theory. **Chapter-5:** Game Theory, Bargaining and Decision-Making Theory. **Chapter-6:** Systems Theory-Meaning, Nature and importance.	**16 Hours**
Unit- III	**Chapter-7:** Communication Theory and Decision Making Theory. **Chapter-8:** Dependency theory and Self-Reliance theory. **Chapter-9:** Samuel P Huntington: Clash of Civilisations.	**16 Hours**
Unit- IV	**Chapter-10:** Power Cycle theory and Feminist Theory**.** **Chapter-11:** Theory building in International Relations: stages of Theorization **Chapter-12:** Future of International Relations: Challenges.	**15 Hours**

Course Title: Public Policy Analysis	
Semester: VI	**Course Code: DSC-15**
Total Contact Hours: 60	**Course Credits: 4**
No. of Teaching Hours/Week:4	**Duration of ESA/Exam: 3 Hours**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60+40=100**

Course Title: Public Policy Analysis

Unit	Contents of Course- DSC-15	60 Hours
Unit-I	**Chapter-1:** Introduction to Public Policy: Concept, its evolution - a historical perspective **Chapter-2:** Public Policy - Meaning, definition and need for Public Policy. **Chapter-3:** Public Policy - Constitutional and cultural basis in formulating Public Policy.	**15 Hours**
Unit-II	**Chapter-4:** Approaches to Public Policy Making- unified, integrated and sectorial**.** **Chapter-5:** Formulation of Public Policy - Role of Legislature, Parliament, Cabinet and NITI Ayog. **Chapter-6:** Role of Research and Research institutions in Public Policy Making (ISEC, IPP, NIRD).	**15 Hours**
Unit- III	**Chapter-7:** Linkage between Public Policy and Planning - Agenda setting, Selection of Goals, Cost Estimation, Implementation and Evaluation. **Chapter-8:** Federal Political System and Planning Process, Coordination and Cooperation between Centre and State **Chapter-9:** Decentralized Planning, Role of Panchayati Raj and People's Participation, monitoring and evaluation.	**15 Hours**
Unit- IV	**Chapter-10:** Public Policy implementation- top down approach, Bottom up approach, incremental model, strategic planning. **Chapter-11:**Resolving problems in implementation- Defining problem, identification of issues, preparing problem statement, policy alternatives and resetting goals. **Chapter-12:**Measuring policy impact-cost benefit analysis, MBO, PERT and CPM	**15 Hours**

Course Title: Modern Indian Political Thinkers	
Semester: VI	**Course Code: DSC-16**
Total Contact Hours: 60	**Course Credits: 4**
No. of Teaching Hours/Week:4	**Duration of ESA/Exam: 3 Hours**
Formative Assessment Marks: 40	**Summative Assessment Marks: 60+40=100**

Unit	Contents of Course- DSC-16	60 Hours
Unit-I	**Introduction to Modern Indian Political Thought** **Chapter-1:** Early Social Reformers: Raja Ram Mohan Roy, JyotibaPhule. **Chapter-2:** Spiritual Nationalism: Swami Vivekananda, Dayananda Sarasvati. **Chapter-3:** Moderate Nationalists: DadabaiNaoroji, M.G.Ranade.	**15 Hours**
Unit-II	**Chapter-4 :** Extremist Nationalists: Arabindo and B.G. Tilak Savarkar: Hindutva and social reform. **Chapter-5:** Emancipatory Phase: Sir Syed Ahamed Khan, and M. Jinnah, Rabindranath Tagore: critique of nationalism **Chapter-6:** Views on caste system and Social Justice Dr. B.R. Ambedkar and Ramaswamy Naiker	**15 Hours**
Unit- III	**Chapter-7:** Shades of Nationalism I : Mahatma Gandhi **Chapter-8:** Shades of Nationalism II : Jawaharlal Nehru **Chapter-9:** National Integration: Vallabhbhai Patel.	**15 Hours**
Unit- IV	**Chapter-10:** Socialist thoughts: M.N. Roy, Jayaprakash Narayan and Ram Manohar Lohiya. **Chapter-11:** Volunteerism and Bhoodhan Movement: Vinobha Bhave **Chapter-12:** Self Respect Movement. E. V. Ramaswami. Feminist thought: Pandita Ramabai	**15 Hours**

Course Title: Internship for Under-Graduate (UG) Programme	
Semester: VI	**Course Code:**
Total Contact Hours/days:	**Course Credits: 2**
No. of Hours/Week: NA	**Duration of ESA/Exam:**
Formative Assessment Marks: 50	**Summative Assessment Marks:**

Department of Political Science Internship Guidelines

1. Core Learning Outcomes

As a result of the internship experience students will be able to:
1. Apply appropriate workplace behaviors in a professional setting.
2. Demonstrate content knowledge appropriate to job assignment.
3. Exhibit evidence of increased content knowledge gained through practical experience.
4. Describe the nature and function of the organization in which the internship experience takesplace.
5. Explain how the internship placement site fits into their broader career field.
6. Evaluate the internship experience in terms of their personal, educational and career needs.

2. Specific Learning Outcomes

Specific Learning Outcomes will be determined jointly with the student's Faculty Internship Advisor and Worksite Supervisor. Specific Learning Outcomes are linked individually to the Core Learning Outcomes and must describe the tasks that the student will perform and learn on the job. They must state specifically what the student will be able to do at the end of the work experience as a result of the internship placement.

Some outcomes will represent reinforcement activities. They will provide the opportunity to perform and to reinforce familiar skills in the student's new working environment. Others will represent activities which are unfamiliar and which will provide opportunities to acquire newsets of skills.

3. Course Description

Provides the student with an opportunity to gain knowledge and skills from a planned work experience in the student's chosen career field. In addition to meeting Core Learning Outcomes, jointly developed Specific Learning Outcomes are selected and evaluated by the Faculty Internship Advisor, Worksite Supervisor, and the student. Internship placements are directly related to the student's program of study and provide learning experiences not available in the classroom setting. Internships provide entry-level, career-related experience, and workplace competencies that employer's value when hiring new employees. Internships may also be used as

an opportunity to explore career fields. Students must meet with the Internship & Apprenticeship Coordinator prior to registering.

The purpose of the Internship Program is to provide each student practical experience in a standard work environment. The Internship Coordinator and Faculty Internship Advisor will assist students in making the job a valuable and productive experience. Success in this job will help ensure development of skills necessary for a lasting and rewarding career in the future.

4. Eligibility requirements for Internship Education

As prescribed by the respective Universities / BoS

5. Course Requirements

1. Students must schedule an orientation with the Internship & Apprenticeship Coordinator and meet with his/her Faculty Internship Advisor/ HoD/ to determine eligibility and discuss internship opportunities. For Paralegal and Human Services programs, students must meet with their Faculty Advisor prior to meeting with the Internship & Apprenticeship Coordinator.

2. Students must secure their own internship employer.

3. Students must complete all the admission formalities for Internship Education prior to the commencement of their internship experience.

4. The student, Worksite Supervisor, HoD/Principal, and the Internship & Apprenticeship Coordinator must sign the Memorandum of Understanding (MOU) between the employer, student and college. The signed MOU must be submitted to the Internship & Apprenticeship Coordinator in order to register for the class.

5. The internship shall be paid or unpaid.

6. Additional Requirements

1. Complete all assignments in the Internship Education Student Workbook.
2. Achieve the Core Learning Outcomes.
3. Meet the Specific Program Outcomes.
4. Students must remain at the internship worksite placement for the agreed upon period for which they are registered. If there are significant changes in the work schedule, in the job expectations, or the working conditions, students are required to contact their Faculty Internship Advisor.

7. Attendance Policy

1. Students are required to report to work on time and according to the requirements of the student's individualized work schedule.
2. Students are expected to conform to all attendance policies established by the employer and must notify the Worksite Supervisor and Faculty Internship Advisor in the event of absence from work.
3. When the employer is open for business on college holidays, the student is expected to report to work as scheduled.

8. All internships shall have the following requirements

1. Internships must be arranged one semester in advance. Given work requirement variation in internships, it may be necessary to earn academic credit in the semester following the work of the internship.

2. The Internship Coordinator/Faculty will assist students in choosing the area of Internship.

3. The workplace Internship & Apprenticeship Coordinator, in consultation with the faculty member, will provide a memo detailing workplace expectations, including the work to be performed; dress code; and the time frame for the work must be received before the Faculty Advisor can agree to supervise the internship.
4. The supervising faculty member (Faculty Advisor) will maintain contact with the workplace Internship & Apprenticeship Coordinator, throughout the internship to assess the satisfaction of the supervisor and to assure the quality of the internship experience for the student.

5. Workplace supervisors (Internship & Apprenticeship Coordinator) will be requested to complete evaluations of the student following the internship. These evaluations will not be used to calculate the grade of the student.

6. All interns will submit a weekly journal to the Faculty Advisor. The journal will detail the work the student has completed that week and will analyze the work in terms of its illumination of principles, concepts and/or methods learned in Political Science.

7. All interns will complete a research paper which examines the literature relevant to the organization and work conducted during the internship and analyzes the work of the internship in that context.

9. Evaluation:

As prescribed by the respective Universities /BoS

Websites to Check for Internships With the Govt. of India

1. Ministry of External Affairs (MEA) - https://www.internship.mea.gov.in/
2. NITI Aayog - https://www.niti.gov.in/internship
3. Reserve Bank of India (RBI) Internship - https://opportunitycell.com/rbi-internship-reserve-bank-of-india-research-internship/
4. Law and Justice Ministry Internship - https://www.lawctopus.com/ministry-of-law-and-justice-internship/
5. Finance Ministry Internship-
6. List of Indian Government Internships Program https://pmjandhanyojana.co.in/indian-government-internship-programs/
7. Department of Public Enterprises - https://dpe.gov.in/schemes/scheme-internship
8. Internship with Directorate General of Foreign Trade - http://dgft.gov.in/exim/2000/EmpCorner/internship.pdf
9. Internship with Technology Information Forecasting and Assessment Council (TIFAC) - http://www.tifac.org.in/index.php?option=com_content&view=article&id=9403:internship-opportunity-spring-summer-2017&catid=49:latest-news&Itemid=17
10. Internship with Ministry of HRD - http://mhrd.gov.in/internship-scheme

Other Departments include

1. Internship with Department of Telecom, BSNL, MTNL, TEC, CDOT, TRAI
2. The Woman Internship Programme of CARE India
3. Internships at PRS Legislative Research
4. Internship with Ministry of Women and Child Development
5. Internship with Serious Fraud Office
6. Digital India Internship Scheme
7. National Productivity Council Internship
8. Internship with Competition Commission of India
9. CCI Internship Program
10. Internship with National Museum, Ministry of Culture
11. Internship with National Human Rights Commission (NHRC)
12. Internship with Central Information of Commission
13. Internship with Centre for Public Policy and Research

Annexure "A"

FORMAT OF INTERNSHIP COMPLETION CERTIFICATE

(To be given on Letter Head)

Date:

TO WHOMSOEVER IT MAY CONCERN

This is to certify that <Mr/ Ms>_____a student of < name of the institution studying> has successfully completed <his/her> Internship with _____. During the period of Internship he/ she worked under in the following areas.

i.
ii.

2. He/She has shown special flair for _____ and<his/her> performance in preparation of the report has been rated as_____(1 to 10 Points/Grade)

3. During the period <his/her> internship program <he/she> was punctual and hardworking.

4. I wish <him/her> every success in <his/her> career and life.

Signature

Annexure "B"

FORMAT FOR NOC TO BE OBTAINED FROM COLLEGE/INSTITUTION

(To be given on Letter Head)/To be signed by HOD/Principal

Date:

Sub:- No Objection Certificate for Internship Programme at_____.

It is certified that<Mr/Ms> is a bonafide student <Student ID no>of<Semester> of <name of the programme> of this <College/Institution>.

The <College/Institution>.has no objection for doing the Internship programme at _____ for the period from ----- to -----. It is also certified that <he/she> is not registered for any course requiring,<his/her> attendance in the class during the said period.

The conduct of the student as recorded by the <College/Institution> has been found good/ satisfactory/unsatisfactory.

(Signature and Seal)

General Pattern of Political Science Question Paper (NEP- 2020)

I. Term End Examination for Discipline Specific Core (DSC) Papers

Each paper will be for maximum of **60 mark.** The minimum mark to pass the examination is 40% (24 mark) in each theory paper.

Note: Duration of Examination for Discipline Specific Core (DSC) Papers is **3 hours.**

Question paper pattern for **Discipline Specific Core (DSC) Papers** –

Section A: Multiple Choice Questions
Section B: Short Answer Questions
Section C: Long Answer Questions

Section A: Multiple Choice Questions All

Questions are Compulsory (10x1=10)1.

2.
3.
4.
5.
6.
7.
8.
9.
10.

Section B: Short Answer Questions (2x10=20)

Answer any Two questions. Answer the following questions in not more than 500 words

11.
12.
13.

Section C: Long Answer Questions (2x15=30)

Answer any Two questions. Answer the following questions in not more than 800 words

14.
15.
16.

II. Term End Examination for Discipline Specific Elective (DSE) Papers

Each paper will be for maximum of 60 mark. The minimum mark to pass the examination is 40%(24 mark) in each theory paper.

Note: Duration of Examination for Discipline Specific Elective (DSE) Papers is **2 hours.**

Question paper pattern for **Discipline Specific Elective (DSE) Papers** –

Section A: Multiple Choice QuestionsSection B: Short Answer Questions Section C: Long Answer Questions

Section A: Multiple Choice

Questions All Questions are

Compulsory (10x1=10)1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

Section B: Short Answer Questions (2x10=20)

Answer any Two questions. Answer the following questions in not more than 500 words

11.

12.

13.

Section C: Long Answer Questions (2x15=30)

Answer any Two questions. Answer the following questions in not more than 800 words

14.

15.

16.

RANI CHANNAMMA UNIVERSITY
BELAGAVI

REGULATIONS AND COURSE STRUCTURE
GOVERNING THE CHOICE BASED CREDIT SYSTEM SEMESTER SCHEME WITH MULTIPLE ENTRY AND EXIT OPTIONS IN
BACHELOR OF COMMERCE
IN THE
FUCULTY OF COMMERCE

BACHELOR OF COMMERCE (Basic/Hons.)

Ist and IInd Semestersw.e.f.

Academic Year 2021-22 and Onwards

Under

New Education Policy - 2020

Curriculum Framework and Scheme of Teaching & Evaluation to be introduced from the Academic Year 2021-22

Based on

NATIONAL EDUCATION POLICY 2020 GUIDELINES

Four Year Undergraduate Program

Bachelor of Commerce (B.Com.)

A. B.Com. Regulations

B. Program Structure

C. Course Contents

D. Annexure

REGULATIONS TO B.COM Hon's DEGREE (NEP-2020 - SEMESTER SCHEME) 2021–22

A. TITLE AND COMMENCEMENT

a. These regulations shall be called as 'Regulations' governing Three Years Bachelor Degree titled Bachelor of Commerce (B.Com Programme) and Four Years honors degree titled Bachelor of Commerce (B.Com Honors) undergraduate Programmes as per NEP-2020 for the Rani Channamma University, Belagavi (framed under NEP-2020, w.e.f. 2021-22)

b. These regulations are framed as per section 44(1c) of K.S.U. Act 2000 for introduction of Programmes.

c. As per Section 44(3) of K.S.U. Act 2000, these Regulations shall come into effect from the academic year: 2021-22 after H.E. the Chancellor's assent.

B. DEFINITIONS

In these Regulations, unless the context otherwise requires:

a. **University'** means Rani Channamma University as specified under Sec. 3(c) of KSU Act.2000.

b. **"Discipline"** means faculty *of* Commerce

c. **"College"** means the Higher Education Institution affiliated to University.

d. **"Student"** means a person admitted to, and pursuing, a specified credit-based course/programme of study in a higher education institution.

e. **"Programme"** or "Programme of study" means a higher education programme pursued for a degree specified by the Commission under sub-section (3) of section 22 of the University Grants Commission Act, 1956 (3 of 1956).

f. **"Course"** means subject or papers having specified units which go to comprise a specified programme of study.

g. **Credit Based Semester System (CBSS):** Under the CBSS, the requirement for awarding a degree/diploma/certificate is prescribed in terms of number of credits to be earned.

h. **Credit:** A unit by which the course work is measured. It determines the number of hours of instructions required per week in a semester. One credit is equivalent to one hour of lecture or tutorial or two hours of practical work/field work per week in a semester. It is a standard methodology of calculating teaching hours of the course per week in the semester system.

i. **Grade Point:** It is a numerical weight allotted to each letter grade on a 10 point scale.

j. **Credit Point:** It is the product of grade point and number of credits for a course.

k. **Letter Grade:** It is an index of the performance of students in a said course. Grades are denoted by letters O, A+, A, B+, B, C, P and F.

l. **Semester:** Each semester will consist of over 16 weeks of academic work equivalent to 90 actual teaching days. The odd semester may be generally scheduled from June to November and even semester from January to May.

m. **Semester Grade Point Average:** It is a measure of performance of work done in a semester. It is the ratio of total credit points secured by a student in various courses registered in a semester and the total course credits taken during that semester. It shall be expressed up to two decimal places.

n. **Cumulative Grade Point Average (CGPA):** It is a measure of overall cumulative performance of a student over all the semesters of a programme. The CGPA is the ratio of total credit points secured by a student in various courses in all the semesters and sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.

o. **Board of Studies** means the Board of Studies in Commerce (Graduate Studies) of Rani Channamma University.

p. **Academic Council** means Academic Council of Rani Channamma University" as specified under Sec. 2(1) read with Sec. 30 of the KSU Act.2000.

q. **Academic Year:** Two consecutive (one odd + one even) semesters constitute on academic year.

C. FACULTY OF COMMERCE:

i) **Bachelor of Commerce (B.Com), Bachelor of Commerce with Honors (B.Com.)(Hons.);**

ii) Bachelor of Commerce (Logistics & Supply Chain Management), B.Com. (LSCM), Bachelor of Commerce with Honors (LSCM), B.Com. (Hons.) (LSCM)

iii) Bachelor of Commerce, B.Com. (Accounting and Finance), Bachelor of Commerce with Honors B.Com.(Hons.) (Accounting and Finance);

iv) Bachelor of Commerce (Tourism & Travel Management), B.Com. (TTM);

v) Bachelor of Commerce, B.Com. (Tax Procedure), Bachelor of Commerce with Honors B.Com. (Hons.) (TP);

vi) Bachelor of Commerce, B.Com. (Computer Applications); Bachelor of Commerce, B.Com. (Vocational), Bachelor of Commerce with Honors B.Com.(Hons.) (Vocational);

vii) Bachelor of Commerce (Banking & Finance), B.Com. (BF); Bachelor of Commerce, B.Com (Hons.);

viii) Bachelor of Commerce- Business Analytics, B.Com. (BA); Bachelor of Commerce with Honors, B.Com. (BA) (Hons.);

ix) Bachelor of Commerce (Insurance & Actuarial Studies), B.Com. (IAS), Bachelor of Commerce (IAS) with Honors, B.Com. (IAS) (Hons

x) Bachelor of Hotel Management (BHM);

xi) Bachelor of Hotel Management and Catering Technology (BHMCT);
xii) Bachelor of Tourism & Travel Management (BTTM);

D. DURATION OF PROGRAMMES, CREDITS REQIUREMENTS AND OPTIONS:

The undergraduate degree should be of either a three or four year duration, with multiple entry and exit options within this period, The four years multidisciplinary Bachelor's programme is the preferred option as it allows the opportunity to experience the full range of holistic and multidisciplinary education with a focus on major and minor subjects as per the student's preference. The four-year programme may also lead to a degree with Research, if the student completes a rigorous research project in the major area(s) of study. The undergraduate programmes shall extend over four academic years (Eight Semesters) with multiple entry and exit options. The students can exit after the completion of one academic year (Two semesters) with the Certificate in a discipline or a field; Diploma after the study of Two academic years (Four Semesters) and Regular Bachelor Degree after the completion of Three academic years (Six Semesters). The successful completion of Four Years undergraduate Programme would lead to Bachelor Degrees with Honors in a discipline/subject. Each semester shall consist of at least 16 weeks of study with a minimum of 90 working days (excluding the time spent for the conduct of final examination of each semester).

Exit with	**Minimum Credits Requirement***	**NSQF Level**
Certificate at the Successful Completion of First Year (Two Semesters) of Four Years Multidisciplinary UG Degree Programme	50	5
A Diploma at the Successful Completion of the Second Year (Four Semesters) of Four Years Multidisciplinary UG Degree Programme	100	6
Basic Bachelor Degree at the Successful Completion of the Third Year (Six Semesters) of Four Years Multidisciplinary Undergraduate Degree Programme	148	7
Bachelor Degree with Honors in a Discipline at the Successful Completion of the Four Years (Eight Semesters) Multidisciplinary Undergraduate Degree Programme	190	8

***Details of courses to be successfully completed equal to minimum credits requirement are described later**

The students shall be required to earn at least fifty per cent of the credits from the Higher Education Institution (HEI) awarding the degree or diploma or certificate: Provided further that, the student shall be required to earn the

required number of credits in the core subject area necessary for the award of the degree or Diploma or Certificate, as specified by the degree awarding HEI, in which the student is enrolled.

A candidate who successfully completes a three year Bachelor's degree, with a minimum CGPA of 7.5 and wishes to pursue the fourth year of the undergraduate programme by research, shall be allowed to continue the programme with Research to obtain the Bachelor's degree with honors by research, while other candidates may continue their studies in the fourth year of the undergraduate programme with or without a research project along with other courses as prescribed for the programme to complete their Bachelor's degree with honors. Candidates who successfully complete their four years Bachelor's degree with honors, either by research or course work with research component and a suitable grade are eligible to enter the 'Doctoral (Ph.D.) Programme' in a relevant discipline or to enter the 'Two Semester Master's Degree programme". Candidates, who wish to complete the undergraduate and the postgraduate programmes faster, may do so by earning the required number of credits and fulfilling all other requirements in N-1 semesters (where N is the number of semesters of an undergraduate programme). This facility is available for the programmes with a minimum duration of three years or six semesters. For example, a candidate may obtain his/her Six Semesters Bachelor's degree, after successfully completing five semesters of the programme, provided he/she has earned required/ prescribed number of credits and fulfills all other requirements for awarding the degree. Likewise, a candidate may obtain his/her Eight Semesters Bachelor's degree with honors, after successfully completing seven semesters of the programme, provided he/she has earned required number of credits and fulfills all other requirements for awarding the Bachelor's degree with honors. Similarly, candidates may complete both the undergraduate and the postgraduate programmes in slow track. They may pursue the three years or six semester programmes in 4 to 5 years (8 to 10 semesters) and four years or eight semester programmes in 5 to 6 years (10 to 12 semesters). As a result, the higher education institutions have to admit candidates not only for programmes, but also for subjects or courses. But the new admissions are generally made in the beginning of an academic year or the beginning of odd semesters.

E. CREDIT REQUIREMENTS:

The candidates shall complete courses equivalent to a minimum of
148 credits to become eligible for the Regular Bachelor Degree,
190 credits to become eligible for the Bachelor Degree with Honors
233 credits to become eligible for the Integrated Master's Degree.

Master's Degree Programmes will be of One Academic Year (Two Semesters) for the Four Years Honors Degree holders and it will be of Two Academic Years

(Four Semesters) for the three years basic or three years Honors Degree holders. Two Years Master's Degree Programmes will have exit option at the end of One Academic Year (Two Semesters) with the Post-graduate Diplomas in the respective disciplines/ subjects, provided they complete courses equal to a minimum of 42 credits:
42 Credits after the Bachelor Degree to become eligible for the PG Diploma 84 Credits after the Bachelor Degree to become eligible for the Masters Degree.
It is optional to the candidate to exit or not, after two, four and six semesters of the undergraduate programme with Certificate, Diploma and with Regular Bachelor Degree, respectively. He/she will be eligible to rejoin the programme at the exit level to complete either the diploma, degree or the honours degree. Further, all the candidates will be awarded Bachelor degrees on successful completion of Three academic years (Six Semesters) of the undergraduate programmes.
A student will be allowed to enter/re-enter only at the Odd Semester and can only exit after the Even Semester. Re-entry at various levels as lateral entrants in academic programmes should be based on the earned credits and proficiency test records.

ACADEMIC BANK OF CREDITS (ABC):

The Academic Bank of Credits (ABC), a national-level facility will promote the flexibility of the curriculum framework and interdisciplinary/multidisciplinary academic mobility of students across the Higher Education Institutions (HEIs) in the country with appropriate "credit transfer" mechanism. It is a mechanism to facilitate the students to choose their own learning path to attain a Degree/ Diploma/Certificate, working on the principle of multiple entry and exit as well as anytime, anywhere, and any level of learning. ABC will enable the integration of multiple disciplines of higher learning leading to the desired learning outcomes including increased creativity, innovation, higher order thinking skills and critical analysis. ABC will provide significant autonomy to the students by providing an extensive choice of courses for a programme of study, flexibility in curriculum, novel and engaging course options across a number of higher education disciplines/ institutions. The multiple entry and exit options for students is facilitated at the undergraduate and Master's levels. It would facilitate credit accumulation through the facility created by the ABC scheme in the "Academic Bank Account" opened for students across the country to transfer and consolidate the credits earned by them by undergoing courses in any of the eligible HEIs. The ABC allows for credit redemption through the process of commuting the accrued credits in the Academic Bank Account maintained in the ABC for the purpose of fulfilling the credits requirements for the award of certificate/ diploma/degree by the authorized HEIs. Upon collecting a certificate, diploma or degree, all the credits earned till then, in respect of that certificate, diploma or degree, shall stand debited and

deleted from the account concerned. HEIs offering programmes with the multiple entry and exit system need to register in the ABC to enable acceptance of multidisciplinary courses, credit transfer, and credit acceptance. The validity of credits earned will be for a maximum period of seven years or as specified by the Academic Bank of Credits (ABC). The procedure for depositing credits earned, its shelf life, redemption of credits, would be as per UGC (Establishment and Operationalization of ABC scheme in Higher Education) Regulations, 2021.

F. OBJECTIVES OF THE COURSE:

a. To provide an effective and holistic commerce education to the needy by using the available facilities.
b. To develop strong manpower with necessary business and technical skills for promoting commercial activities.
c. To produce the capable professionals to ensure the best business practices on contemporary issues in the global business.
d. To encourage young minds to contribute in nation building through providing opportunity to learn different aspects about business.
e. To cater to the manpower needs of companies in Accounting, Taxation, Auditing, Financial analysis and Management.
f. To develop business analysts for companies, capital markets and commodity markets.
g. To prepare students to take up higher education to become business scientists, researchers, consultants and teachers, with core competencies.
h. To develop human resources to act as think tank for Business Development related issues and to develop entrepreneurs.
i. To develop business philosophers with a focus on social responsibility and ecological sustainability.
j. To develop IT enabled global middle level managers for solving real life business problems and addressing business development issues with a passion for quality competency and holistic approach.
k. To develop ethical managers with interdisciplinary approach.
l. To prepare students for professions in the field of Accountancy-Chartered Accountancy, Cost and Management Accountancy, Company Secretary, Professions in Capital and Commodity Markets, Professions in life and non-life insurance and professions in Banks by passing the respective examinations of the respective professional bodies.
m. To develop the students for competitive examinations of UPSC, KPSC, Banking Selection, Staff Selection Commission, etc.

G. ELIGIBILITY FOR ADMISSION:

B.Com: Candidates who have passed the twelth standard Commerce (Pre-University course/10+2) of the Pre-University Board in the State of Karnataka) or any other course considered as equivalent thereto by the University from time to time.

H. MEDIUM OF INSTRUCTION:

The medium of instruction and examination shall be English or Kannada.

I. SUBJECTS OF STUDY:

The Components of Curriculum for Four Years Multidisciplinary Undergraduate Programme: The Category of Courses and their Descriptions are given in the following Table and in Appendix A and Appendix B.

Sl. No.	Category of Courses
1	Languages
2	Ability Enhancement Courses
3	Skill Enhancement/ Development Courses / Vocational courses
4	Foundation/ Discipline based Introductory Courses
5	Major Discipline Core Courses
6	Open or Generic Elective Courses
7	Project work/ Dissertation/ Internship/ Entrepreneurship
8	Sports, Cultural and Extension Activities

ABILITY ENHANCEMENT COURSES:

Ability Enhancement (AE) Courses can be divided into two categories:

a) **AE Compulsory Courses (AECC):** The universities may have common curriculum for these papers. There may be one paper each at least in the first four semesters viz. (i) Environmental Studies and (ii) Constitution of India.

   In addition to these, two languages shall be studied in the first four semesters of the Undergraduate Programmes.

b) **Skill Enhancement Courses (SEC):** The universities may offer from a common pool of papers listed by KSHEC/ National Regulatory Bodies such as UGC or GEC/ NHERC or the universities may frame some papers, in addition to the list suggested.

LANGUAGES:

Two languages are to be studied out of which one shall be Kannada and the other shall be either English or an Indian Language or other Foreign language: English, Sanskrit, Hindi, Tamil, Telugu, Malayalam, Marathi, Konkani, Urdu, Persian, Arabic, German, French, Latin, Russian, Japanese and any other language prescribed/ approved by the university.

SKILL ENHANCEMENT COURSES (COMMON FOR ALL PROGRAMMES):

i) Any four skill enhancement/development courses are to be studied in the first six semesters, one per semester as prescribed by the concerned faculty and approved by the Academic Council. The courses may include the following:

Semester	B.Com.
I/II	Digital Fluency/ Creativity and Innovation
III/IV	Artificial Intelligence/Critical thinking & problem solving
V	Cyber Security/ Entrepreneurship
VI	Professional Communication / German / French
VII/VIII	Science and Society/ Cultural Awareness

ii) One soft core course or allied subject each in the seventh and eight semesters of the honors programme and the integrated Masters degree programme or in the first and second semesters of the post-graduate programmes, and one open elective in the ninth semester of the integrated master's programmes are to be studied as prescribed by the respective Board of studies and approved by the Academic council. The soft core courses may include research methodology course, one of the foreign languages such as German, French etc. or any other course prescribed by the university from time to time.

VOCATIONAL SUBJECTS:

Advertising, Computer Applications, Communicative English, Electronic Equipment Maintenance, Entrepreneurship Development, Instrumentation, Office/Home Management and Secretarial Practice, Sales Promotion and Management, Tax Procedure and Practice, Tourism and Travel Management and any other subjects introduced from time to time.

SPORTS, CULTURAL AND EXTENSION ACTIVITIES:

A student shall opt for two of the following activities offered in the college, in each of the first six semesters of the undergraduate programmes. The activity carries a credit each for each of the activities and will be internally assessed for 25 marks.

a) Physical Education or Activities related to Yoga/ Sports and Games
b) N.S.S. / N.C.C / Ranger and Rovers/Red cross
c) Field studies / Industry Implant Training
d) Involvement in campus publication or other publications
e) Publication of articles in news papers, magazines
f) Community work such as promotion of values of National Integration, Environment, Human rights and duties, Peace, Civic sense etc.

g) A Small project work concerning the achievements of India in different fields
h) Evolution of study groups/seminar circles on Indian thoughts and ideas
i) Activity exploring different aspects of Indian civilizations
j) Involvement in popularization programmes such as scientific temper
k) Innovative compositions and creations in dance/music/theatre and visual arts.
l) Any other activities such as Cultural Activities as prescribed by the University.
Evaluation of Co-curricular and Extension Activities shall be as per the procedure evolved by the university from time to time.

J. CONTINUOUS FORMATIVE EVALUATION/ INTERNAL ASSESSMENT:

Total marks for each course shall be based on continuous assessments and semester end examinations. As per the decision taken at the Karnataka State Higher Education Council, it is necessary to have uniform pattern of 40 : 60 for IA and Semester End theory examinations respectively and 50 : 50 for IA and Semester End practical examinations respectively, in all the Universities, their Affiliated and Autonomous Colleges.

Total Marks for each course = 100%
Continuous assessment (C1) = 20% marks
Continuous assessment (C2) = 20% marks
Semester End Examination (C3) = 60% marks.

Evaluation process of IA marks shall be as follows.

a) The first component (C1) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, project work etc. This assessment and score process should be completed after completing 50% of syllabus of the course/s and within 45 working days of semester program.
b) The second component (C2) of assessment is for 20% marks. This shall be based on test, assignment, seminar, case study, field work, internship / industrial practicum / project work etc. This assessment and score process should be based on completion of remaining 50 percent of syllabus of the courses of the semester.
c) During the 17^{th} – 19^{th} week of the semester, a semester end examination shall be conducted by the University for each course. This forms the third and final component of assessment (C3) and the maximum marks for the final component will be 60%.
d) In case of a student who has failed to attend the C1 or C2 on a scheduled date, it shall be deemed that the student has dropped the test. However, in case of a student who could not take the test on scheduled date due to genuine reasons, such a candidate may appeal to the Program Coordinator / Principal. The Program Coordinator / Principal in consultation with the concerned teacher shall decide about the genuineness of the case and decide to conduct special test to such candidate on the date fixed by the concerned teacher but before commencement of the concerned semester

end examinations.

e) For assignments, tests, case study analysis etc., of C1 and C2, the students should bring their own answer scripts (A4 size), graph sheets etc., required for such tests/assignments and these be stamped by the concerned department using their department seal at the time of conducting tests / assignment / work etc.

f) The outline for continuous assessment activities for Component-I (C1) and Component-II (C2) of a course shall be as under.

Outline for continuous assessment activities for C1 and C2

Activities	C1	C2	Total Marks
Session Test	10% marks	10% marks	20%
Seminars/Presentations/Activity	10% marks		10%
Case study /Assignment / Field work / Project work etc.		10% marks	10%
Total	**20% marks**	**20% marks**	**40%**

g) For practical course of full credits, Seminar shall not be compulsory. In its place, marks shall be awarded for Practical Record Maintenance. (the ratio is 50% : 50%)

h) Conduct of Seminar, Case study / Assignment, etc. can be either in C1 or in C2 component at the convenience of the concerned teacher.

i) The teachers concerned shall conduct test / seminar / case study, etc. The students should be informed about the modalities well in advance. The evaluated courses / assignments during component I (C1) and component II (C2) of assessment are immediately provided to the candidates after obtaining acknowledgement in the register by the concerned teachers(s) and maintained by the Chairman in the case of a University Post-Graduate Department and the Principal / Director in the case of affiliated institutions. Before commencement of the semester end examination, the evaluated test, assignment etc. of C1 and C2 shall be obtained back to maintain the m till the announcement of the results of the examination of the concerned semester.

j) The marks of the internal assessment shall be published on the notice board of the department / college for information of the students.

k) The Internal assessment marks shall be communicated to the Registrar (Evaluation) at least 10 days before the commencement of the University examinations and the Registrar (E) shall have access to the records of such periodical assessments.

l) There shall be no minimum in respect of internal assessment marks.

m) Internal assessment marks may be recorded separately. A candidate, who has failed or rejected the result, shall retain the internal assessment marks.

K. CONDUCT OF EXAMINATIONS:

A candidate shall register for all the courses/papers of a semester for which he/she fulfills the requirements, when he/she appears for examination of that semester for the first time.

(a) There shall be Theory and Practical examinations at the end of each semester, ordinarily during November-December for odd semesters and during May -June f or even semesters, as prescribed in the Scheme of Examinations.

(b) Unless otherwise stated in the schemes of examination, practical examinations shall be conducted at the end of each semester. They shall be conducted by two examiners, one internal and one external and shall never be conducted by both internal examiners. The statement of marks sheet and the answer books of practical examinations shall be sent to the Registrar (Evaluation) by the Chief Superintendent of the respective Colleges immediately after the practical examinations.

(c) The candidate shall submit the record book for practical examination duly certified by the course teacher and the H.O.D/staff in-charge. It shall be evaluated at the end of the Semester at the practical examination.

L. MINIMUM FOR A PASS:

(a) No candidate shall be declared to have passed the Semester Examination as the case may be under each course/paper unless he/she obtains not less than 35% marks in written examination / practical examination and 40% marks in the aggregate of written / practical examination and internal assessment put together in each of the courses and 40% marks (including IA) in Project work and viva wherever prescribed.

(b) A candidate shall be declared to have passed the program if he/she secures at least 40% of marks or a CGPA of 4.0 (Course Alpha-Sign Grade P) in the aggregate of both internal assessment and semester end examination marks put together in each unit such as theory papers / practical / field work / internship / project work / dissertation / viva-voce, provided the candidate has secured at least 40% of marks in the semester end examinations in each unit.

(c) The candidates who pass all the semester examinations in the first attempts are eligible for ranks provided they secure at least CGPA of 6.00 (Alpha-Sign Grade B^{+}).

(d) A candidate who passes the semester examinations in parts is eligible for only Class, CGPA and Alpha-Sign Grade but not for ranking.

(e) The results of the candidates who have passed the last semester examination but not passed the lower semester examinations shall be declared as NCL (Not Completed the Lower Semester Examinations). Such candidates shall be eligible for the degree only after completion of all the lower semester examinations.

(f) If a candidate fails in a subject, either in theory or in practicals, he/she shall appear for that subject only at any subsequent regular examination, as prescribed for completing the programme. He/she must obtain the minimum marks for a pass in that subject (theory and practicals, separately) as stated above.

M. PEDAGOGY/ANDRAGOGY/HEUTAGOGY

The programme consists of Lectures and Practical sessions both inside and outside the classroom. Lectures will be supplemented with tutorial classes which encompass Student Seminars, Case Studies, Group Discussions, Role play activities and hands on computer use.

N. TEACHING AND EVALUATION

M.Com graduates with any specialization with B.Com, as basic degree from a recognized university are only eligible to teach and to evaluate the subjects (except languages and compulsory additional subjects) mentioned in this regulation. The Discipline Specific Courses shall be compulsorily taught by M.Com graduates only. Languages and additional subjects shall be taught by the post graduates as recognized by the respective board of studies.

O. MEDIUM OF INSTRUCTION

The medium of instruction shall be in English. However, a candidate will be permitted to write the examination either in English or in Kannada.

P. SCHEME OF EXAMINATION

Guidelines for Continuous Internal Evaluation and Semester End Examination

The Members of the Committee deliberated on the framework of Continuous Internal Evaluation (CIE) as well Semester End Examination (SEE) for the courses. The CIE and SEE will carry 40% and 60% weightage each, to enable the course to be evaluated for a total of 100 marks, irrespective of its credits. The evaluation system of the course is comprehensive & continuous during the entire period of the Semester. For a course, the CIE and SEE evaluation will be on the following parameters:

a. **Continuous & Comprehensive Evaluation (CCE):** The CCE will carry a maximum of20 % weightage (20 marks) of total marks of a course. Before the start of the academic session in each semester, a faculty member should choose for his/her course, minimum of four of the following assessment methods with four marks each:

i. Individual Assignments
ii. Seminars/Class Room Presentations/ Quizzes
iii. Group Discussions /Class Discussion/ Group Assignments
iv. Case studies/Case lets
v. Participatory & Industry-Integrated Learning/ Filed visits
vi. Practical activities / Problem Solving Exercises
vii. Participation in Seminars/ Academic Events/Symposia, etc.
viii. Mini Projects/Capstone Projects
ix. Any other academic activity

b. **Internal Assessment Tests (IAT):** The IAT will carry a maximum of 40% weightage (40 marks) of total marks of a course, under this component, two tests will have to be conducted in a semester for 25 marks each and the same is to be scaled down to 10 marks each. Standard format is given below.

c. In case of 50 percent of CIE weightage courses, faculty members can choose assessments methods accordingly for the required marks as mentioned above.

Template for IAT

Internal Assessment Test - Bachelor of Commerce (B.Com.)

Duration: 1 Hour Total Marks: 25

SECTION-A

I. Answer any two of the following questions. Questions are asked on Remembering. (2 x 2= 4)

1.
2.
3.

SECTION- B

II. Answer any two of the following questions. Questions are asked on Understanding and Applying. (2 x5= 10)

4.
5.
6.

SECTION- C

III. Answer any one of the following questions. Questions are asked on analyzing and evaluating. (1x 11=11)

7.
8.

Note: Internal Test question papers format is prepared based on Revised Bloom's Taxonomy.
(https://www.apu.edu/live_data/files/333/blooms_taxonomy_action_verbs.pdf)

Q. MINIMUM PERCENTAGE FOR PASS

i. A candidate shall be declared to have passed the examination only when he/she obtains not less than 40% marks in written examination in each paper (exclusive of IA marks) and 40% marks in the aggregate of semester end examination.

ii. A candidate who fails in any paper under Group – I, II, III IV, V VI and VII shall take the examinations only in the failed paper(s) at any specific examination within the period of six years from the date of admission to the first semester.

R. POWER TO REMOVE DIFFICULTIES

If any difficulty arises in giving effect to the provisions of these regulations, the Vice- Chancellor may by order make such provisions not inconsistent with the Act, Statutes, Ordinances or other Regulations, as appears to be necessary or expedient to remove the difficulty. Every order made under this rule shall be subject to ratification by the Appropriate University Authorities.

S. MODIFICATION TO THE REGULATIONS

Notwithstanding the foregoing, any amendments / modifications issued or notified by the University Grants Commission/ Higher Education Commission of India and its verticals such as National Higher Education Regulatory Council, General Education Council or the State Government, from time to time, shall be deemed to have been incorporated into these Regulations and shall constitute an integral part of these Regulations.

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B. PROGRAM STRUCTURE OF B.COM.

Semester I								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L+T+P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
1	B.Com.1.1	Financial Accounting	DSC-1	3+0+2	60	40	100	4
2	B.Com.1.2	Management Principles and Applications	DSC-2	4+0+0	60	40	100	4
3	B.Com.1.3	Principles of Marketing	DSC-3	4+0+0	60	40	100	4
4	B.Com.1.4	1. Entrepreneurship Development 2. Accounting for Everyone	OEC-1	3+0+0	60	40	100	3
5	Lang.1.1	Language – I	AECC	3+1+0	60	40	100	3
6	Lang.1.2	Language –II	AECC	3+1+0	60	40	100	3
7	SEC-SB-1	Digital Fluency	SEC-SB	1+0+2	25	25	50	2
8	SEC-VB-1	Yoga/Sports	SEC-VB	0+0+2	-	25	25	1
9		H&W/NCC/NSS/R&R/CA		0+0+2	-	25	25	1
Sub –Total (A)					**385**	**315**	**700**	**25**

Semester II								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L+T+P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
10	B.Com.2.1	Advanced Financial Accounting	DSC-4	3+0+2	60	40	100	4
11	B.Com.2.2	Business Mathematics **OR** Corporate Administration	DSC-5	4+0+0	60	40	100	4
12	B.Com.2.3	Law & Practice of Banking	DSC-6	4+0+0	60	40	100	4
13	B.Com.2.4	1. Event Management 2. Investing in Stock Markets	OEC-2	3+0+0	60	40	100	3
14	Lang. 2.1	Language - I	AECC	3+1+0	60	40	100	3
15	Lang. 2.2	Language –II	AECC	3+1+0	60	40	100	3
16	AECC	Environmental Studies	AECC	2+0+0	30	20	50	2
17	SEC-VB-2	Yoga/Sports	SEC-VB	0+0+2	-	25	25	1
18		H&W/NCC/NSS/R&R/CA		0+0+2	-	25	25	1
Sub –Total (B)					**390**	**310**	**700**	**25**

Exit Option with Certification – With ability to solve well defined problems

Notes:

- One Hour of Lecture is equal to 1 Credit.
- One Hour of Tutorial is equal to 1 Credit (Except Languages).
- Two Hours of Practical is equal to 1 Credit

Acronyms Expanded

- AECC : Ability Enhancement Compulsory Course
- DSC © : Discipline Specific Core (Course)
- SEC-SB/VB : Skill Enhancement Course-Skill Based/Value Based
- OEC : Open Elective Course
- DSE : Discipline Specific Elective
- SEE : Semester End Examination
- CIE : Continuous Internal Evaluation
- L+T+P : Lecture + Tutorial + Practical(s)

Note:

1. Practical Classes may be conducted in the Business Lab or in Computer Lab or in Class room depending on the requirement. One batch of students should not exceed 50 students. Two Hours of Practical Class is equal to 1 Hour of Teaching, however, whenever it is conducted for the entire class (i.e., more than 50 students) 2 Hours of Practical Class is equal to 2 Hours of Teaching.
2. OEC subjects in the first four semesters should be offered to students of other programs.

C. COURSE CONTENTS

Name of the Program: Bachelor of Commerce (B.Com.)

Course Code: B.Com. 1.1

Name of the Course: FINANCIAL ACCOUNTING

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**3+0+2**	**56 Hrs**

Pedagogy: Classrooms lecture, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

1. Understand the theoretical framework of accounting as well accounting standards.
2. Demonstrate the preparation of financial statement of manufacturing and non-manufacturing entities of sole proprietors.
3. Exercise the accounting treatments for consignment transactions & events in the books of consignor and consignee.
4. Understand the accounting treatment for royalty transactions & articulate the Royalty agreements.
5. Outline the emerging trends in the field of accounting.

Module	Syllabus	Teaching Hours
I	**CONVERSION OF SINGLE ENTRY SYSTEM INTO DOUBLE ENTRY SYSTEM:** Need for conversion, Steps involved in Conversion; Differentiation between single entry and Double entry system, Conversion of Single entry to double entry, problems relating thereto.	12
II	**ACCOUNTS OF PROFESSIONALS**: Accountants - Lawyers and Doctors only - Fees a/c, Petty Cash Book - Clients Ledger - Receipts & Payments a/c - Income & Expenditure a/c & Balance Sheet.	10
III	**FARM ACCOUNTING**: Meaning – Objectives - Books of Accounts to be maintained under Single Entry & Double Entry for Farm Accounting - Preparation of Farm Revenue Account to ascertain the Profit or Loss of various sections like Crop, Livestock, Dairy & Poultry - Preparation of Balance Sheet for Agriculture, Dairy Farming & Poultry Farming.	12
IV	**ROYALTY ACCOUNTS**: Meaning and Importance - Minimum Rent - Short-workings, recoupment of Short Workings, Strike Period; Entries and Accounts in the Books of Lessee and Lessor (Excluding Sub Lease)	12
V	**FIRE INSURANCE ACCOUNTING:** Introduction - Need - Loss of Stock Policy - Steps for ascertaining Fire Insurance Claim - Treatment of Salvage - Average Clause - Treatment of Abnormal Items - Computation of Fire Insurance Claims.	10

Skill Developments Activities:

1. Visit any sole proprietor firm and identify the steps involved in the conversion of single entry into double entry system.
2. Visit any hospital or Lawyers office and list out the transactions of the same.
3. Collect and analyse the financial statements of Dairy and poultry farming.
4. Collect Royalty Agreements and draft dummy royalty agreements with imaginary figures.

5. Visit the nearby general insurance company and prepare a report on claim settlement procedure.
6. Any other activities, which are relevant to the course.

Reference Books:

1. ICAI Study Materials on Principles & Practice of Accounting, Accounting and Advanced Accounting.
2. S. P. Iyengar (2005), Advanced Accounting, Sultan Chand & Sons, Vol. 1.
3. Robert N Anthony, David Hawkins, Kenneth A. Merchant, (2017) Accounting: Text and Cases, McGraw-Hill Education, 13th Edition.
4. Charles T. Horngren and Donna Philbrick, (2013) Introduction to Financial Accounting, Pearson Education, 11th Edition.
5. J. R. Monga, Financial Accounting: Concepts and Applications. Mayur Paper Backs, New Delhi, 32nd Edition.
1. S. Anil Kumar, V. Rajesh Kumar and B. Mariyappa – Financial Accounting, Himalaya Publishing House, New Delhi.
6. S. N. Maheshwari, and. S.K. Maheshwari. Financial Accounting. Vikas Publishing House, New Delhi, 6th Edition.
7. B. S. Navi and R. A. Sanadi, Financial Accounting, Shriniketan Publications
8. B. S. Raman (2008), Financial Accounting Vol. I & II, United Publishers & Distributors
9. Compendium of Statements and Standards of Accounting. The Institute of Chartered Accountants of India, New Delhi.

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)

Course Code: B.Com. 1.2

Name of the Course: MANAGEMENT PRINCIPLES AND APPLICATIONS

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4 +0+0**	**56 Hrs**

Pedagogy: Classrooms lecture, Case studies, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

1. Understand and identify the different theories of organisations, which are relevant inthe present context.
2. Design and demonstrate the strategic plan for the attainment of organisational goals.
3. Differentiate the different types of authority and chose the best one in the presentcontext.
4. Compare and chose the different types of motivation factors and leadership styles.
5. Choose the best controlling techniques for better productivity of an organisation.

Module	Syllabus	Teaching Hours
I	**INTRODUCTION TO MANAGEMENT**: Introduction - Meaning and Importance of Management - Managerial Functions - Essence of Manager ship - Evolution of the Management Thoughts: Classical Organizational Theories - Neo-Classical Theories - Modern Organizational Theories.	10
II	**PLANNING**: Introduction - Meaning - Nature - Purpose - Types of Plans - Planning Process; Strategic Planning: Concept – Process - Importance and Limitations; Environmental Analysis and Diagnosis: Meaning - Importance and Techniques (SWOT/TOWS/WOTS-UP-BCG Matrix - Competitor Analysis); Decision Making - Concept-Importance - Committee and Group Decision Making Process.	10
III	**ORGANIZING:** Introduction-Meaning-Concept and Process of Organizing – An Overview-Span of Management - Different Types of Authority (Line, Staff and Functional)-Decentralization- Delegation of Authority; Formal and Informal Structure-Principles of Organizing; Network Organisation Structure	12
IV	**STAFFING AND LEADING:** Staffing: Introduction, Concept of Staffing -Staffing Process; Motivation: Concept - Importance-Extrinsic and Intrinsic Motivation-Major Motivation Theories: Maslow's Need Hierarchy Theory-Hertzberg's Two-Factor Theory-Vroom's Expectation Theory; Leadership: Concept- Importance-Major Theories of Leadership (Likert's Scale Theory, Blake and Mouten's Managerial Grid Theory, House's Path Goal Theory, Fred Fielder's Situational Leadership), Transactional Leadership, Transformational Leadership, Transforming Leadership; Communication: Concept - Purpose-Process - Oral and Written Communication- Formal and Informal Communication Networks - Barriers to Communication-Overcoming Barriers to Communication.	12
V	**CONTROLLING AND COORDINATION:** Control: Concept-Process-Limitations-Principles of Effective Control-Major Techniques of Control – Ratio Analysis, ROI, Budgetary	12

	Control, EVA, PERT/CPM, Emerging Issues in Management; Coordination: Meaning-Nature-Importance-Principles of Coordination.	

Skill Developments Activities:

- Collect the photographs and bio-data of any three leading contributors ofmanagement thoughts.
- Visit any business organisation and collect the information on types of planning adopted by them.
- Visit any business organisation and collect different types of authority followed and also the draw the organizational structure.
- Analyse the leadership styles of any select five companies of different sectors.
- Visit any manufacturing firm and identify the controlling system followed.
- Any other activities, which are relevant to the course.

Reference Books:

1. Harold Koontz and Heinz Weihrich (2017), Essentials of Management: An International and Leadership Perspective, McGraw Hill Education, 10th Edition.
2. Stephen P Robbins and Madhushree Nanda Agrawal (2009), Fundamentals of Management: Essential Concepts and Applications, Pearson Education, 6th Edition.
3. James H. Donnelly, (1990) Fundamentals of Management, Pearson Education, 7th Edition.
4. B. P. Singh and A. K. Singh (2002), Essentials of Management, Excel Books
5. P C Tripathi & P N Reddy (2005), Principles of Management, TMH Publications, 3rd Edition.
6. Koontz Harold (2004), Essentials of Management, Tata McGraw Hill.

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.) Course **Code: B.Com. 1.3** **Name of the Course: PRINCIPLES OF MARKETING**		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4+0+0**	**56 Hrs**

Pedagogy: Classrooms lecture, Case studies, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the students will be able to

1. Understand the basic concepts of marketing and asses the marketing environment.
2. Analyse the consumer behaviour in the present scenario and marketing segmentation.
3. Discover the new product development & identify the factors affecting the price of a product in the present context.
4. Judge the impact of promotional techniques on the customers & importance of channels of distribution.
5. Outline the recent developments in the field of marketing.

Module	Syllabus	Teaching Hours
I	**INTRODUCTION TO MARKETING:** Introduction - Nature – Scope - Importance of Marketing; Concepts & Approaches of Marketing: Need-Want-Demand-Customer Value-Customer Creation; Evolution of Marketing; Selling Vs Marketing; Marketing Environment: Concept – Importance - Micro and Macro Environment - Marketing Management – Meaning - Importance.	12
II	**CONSUMER BEHAVIOUR & MARKET SEGMENTATION:** Consumer Behaviour: Nature and Importance-Consumer Buying Decision Process; Factors Influencing Consumer Buying Behaviour; Market Segmentation: Concept, Importance and Bases; Target Market Selection-Positioning Concept - Importance and Bases; Product Differentiation Vs. Market Segmentation. Marketing Mix: Product-Price-Place & Promotion.	12
III	**PRODUCT AND PRICING:** Product: Concept and Importance - Product Classifications-Concept of Product Mix; Branding-Packaging and Labeling; Product - Support Services; Product Life Cycle; New Product Development Process; Consumer adoption Process - Pricing: Significance - Factors affecting Price of a Product - Pricing Policies and Strategies.	12
IV	**PROMOTION AND DISTRIBUTION:** Promotion: Nature and Importance of Promotion; Communication Process; Types of Promotion: Advertising, Personal Selling, Public Relations & Sales Promotion, and Their Distinctive Characteristics; Promotion Mix and Factors Affecting Promotion Mix Decisions. Distribution Channels and Physical Distribution: Channels of Distribution - Meaning and Importance; Types of Distribution Channels; Functions of Middle Man; Factors affecting choice of Distribution Channel; Wholesaling and Retailing; Types of Retailers; E-Retailing, Physical Distribution.	12
V	**RECENT DEVELOPMENTS IN MARKETING:** Social Marketing - Online Marketing - Direct Marketing - Services Marketing - Green Marketing, Rural Marketing; Consumerism, Search Engine Marketing - Mobile Marketing - Marketing Analytics - Social	08

	Media Marketing - Email Marketing - Live Video Streaming Marketing - Network Marketing, - Any other recent developments in Marketing.	

Skill Developments Activities:

- Analyse the marketing environment of your locality and identify need, wants & purchasing power of customers.
- Collect consumer behaviour towards home appliances in your locality.
- Visit any organisation and collect the information towards pricing of the products.
- Visit any wholesalers/Retailers; collect the role of them in marketing.
- Identify the recent developments in the field of marketing.
- Any other activities, which are relevant to the course.

Reference Books:

1. Philip Kotler (2015), Principles of Marketing. 13th edition. Pearson Education.
2. Saxena Rajan, (2017) Marketing Management, Tata McGraw-Hill Publishing Company Ltd., New Delhi. Fifth Edition.
3. Kumar Arun & Meenakshi N (2016), Marketing Management, Vikas Publishing House Pvt. Ltd., New Delhi. Third Edition
4. Panda Tapan (2008), Marketing Management, Excel books, New Delhi, Second Edition.
5. Michael, J. Etzel, Bruce J. Walker, William J Stanton and Ajay Pandit. Marketing: Concepts and Cases. (Special Indian Edition)., McGraw Hill Education
6. William D. Perreault, and McCarthy, E. Jerome., Basic Marketing. Pearson Education.
7. Majaro, Simon. The Essence of Marketing. Pearson Education, New Delhi.
8. Iacobucci and Kapoor, Marketing Management: A South Asian Perspective. Cengage Learning.
9. Chhabra, T.N., and S. K. Grover. Marketing Management. Fourth Edition.

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)

Course Code: B.Com. 1.4 Open Elective Course

Name of the Course: 1. ENTREPRENEURSHIP DEVELOPMENT

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	**3+0+0**	**42 Hrs**

Pedagogy: Classroom lecture, Case studies, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the students will be able to

1. Analyze the problems and challenges of entrepreneurs
2. Understand the various institutions involved in entrepreneurship development
3. Have broad idea of entrepreneurship stimulation.
4. Understand the various schemes available for rural entrepreneurship.
5. Know the government support available to entrepreneurship activities.

Module	Syllabus	Teaching Hours
I	**INTRODUCTION TO ENTREPRENEURSHIP:** Evolution of Entrepreneurship - Introduction to the concept of Entrepreneurs - Entrepreneurship and Enterprise - Reasons for growth of Entrepreneurship - Characteristics and Classification of Entrepreneurs - Intrapreneurs - Women Entrepreneurs - Problems and Challenges; Competency requirement for entrepreneurs.	8
II	**ENTREPRENEURSHIP DEVELOPMENT:** Concept - Objectives - Process - EDP in India - Problems and measures - Institutions involved in Entrepreneurship Development - NIESBUD - TCOs - CEDOK - SFCs and KVIC	10
III	**ENTREPRENEURSHIP STIMULATION:** Concept - Public and private system of stimulation - Support and sustainability of entrepreneurship –Requirement - Availability and access to finance - Marketing assistance – Technology and industrial accommodation - Role of industries/entrepreneur's associations and self-help groups - Business incubators - Concept - Role and functions - Angel investors - Venture capital and private equity fund.	8
IV	**RURAL ENTREPRENEURSHIP:** Concept - Rural Entrepreneurial Environment - Problems of Rural Entrepreneurs - Schemes for Rural Entrepreneurship Development - TRYSEM - DOWCRA - Stories of successful Entrepreneurs - Ratan Tata - Dhirubai Ambani - Narayan Murthy - Azim Premji - Laxmipathi Mittal.	8
V	**GOVERNMENT SUPPORT FOR ENTREPRENEURSHIP:** Start-up India - Make in India - Atal Innovation Mission (AIM) - Support to Training and Employment Programme (STEP) - Jan Dhan - Aadhaar - Mobile (JAM) - Digital India - Trade Related Entrepreneurship Assistance and Development (TREAD) - Pradhan Mantri Kausalya Vikas Yojana (PMKVY) - National Skill Development Mission (NSDM). (Concepts only)	8

Skill Developments Activities:

- Visit to small-scale industry and prepare a SWOC analysis report.
- Draft the success stories of business entrepreneurs in your region.

- List out at least ten successful entrepreneurs in Karnataka.
- List out the problems of rural entrepreneurs
- List out the government support schemes for the entrepreneurship.

Reference Books:

1. Tandon B.C: Environment and Entrepreneur; Chugh Publications, Allahabad.
2. Siner A David: Entrepreneurial Mega books; John Wiley and Sons, NewYork.
3. Srivastava S. B: A Practical Guide to Industrial Entrepreneurs; S. Chand, New Delhi.
4. Prasanna Chandra: Project Preparation, Appraisal, Implementation; TMH, New Delhi
5. Kuratko and Rao, *Entrepreneurship: A South Asian Perspective,* Cengage Learning.
6. Robert Hisrich, Michael Peters, Dean Shepherd, *Entrepreneurship,* McGraw-Hill Education.
7. Desai, Vasant. *Dynamics of Entrepreneurial Development and Management*. Mumbai, Himalaya Publishing House.
8. Dollinger, Mare J. *Entrepreneurship: Strategies and Resources*. Illinois, Irwin.
9. Holt, David H. *Entrepreneurship: New Venture Creation*. Prentice-Hall of India, New Delhi.
10. Singh, Nagendra P. *Emerging Trends in Entrepreneurship Development*. New Delhi
11. S. S. Khanka, *Entrepreneurial Development,* S. Chand & Co, Delhi.
12. Hifrich, Manimala, Peters & Shepherd, *Entrepreneurship,* McGraw-Hill
13. Kumar Arya, Entrepreneurship, Pearson
14. Bamford and Bruton, Entrepreneurship, McGraw Hill

Note: Latest edition of textbooks may be used

Name of the Program: Bachelor of Commerce (B.Com)

Course Code: B.Com. 1.4 Open Elective Course

Name of the Course: 2. ACCOUNTING FOR EVERYONE

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	**3+0+0**	**42 Hrs**

Pedagogy: Classrooms lecture, Case studies, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

1. Analyse various terms used in accounting;
2. Make accounting entries and prepare cash book and other accounts necessary while running a business;
3. Prepare accounting equation of various business transactions;
4. Analyse information from company's annual report;
5. Comprehend the management reports of the company.

Module	Syllabus	Teaching Hours
I	**INTRODUCTION TO ACCOUNTING**: Meaning - Importance and Need - Its objectives and relevance to business establishments and other organizations, and individuals - Accounting information: meaning - users and utilities - sources of accounting information - Some Basic Terms – Transaction – Account – Asset – Liability – Capital - Expenditure & Expense – Income – Revenue – Gain – Profit – Surplus – Loss – Deficit - Debit – Credit - Accounting Year - Financial Year.	08
II	**TRANSACTIONS AND RECORDING OF TRANSACTIONS:** Features of recordable transactions and events - Basis of recording – vouchers and another basis - Recording of transactions: Personal account - Real Account and Nominal Account; Rules for Debit and Credit; Double Entry System - journalizing transactions; Preparation of Ledger - Cash Book including bank transactions. (Simple Problems)	08
III	**PREPARATION OF FINANCIAL STATEMENTS:** Fundamental Accounting Equation; Concept of revenue and Capital; Preparation of financial statements. (Simple problems)	10
IV	**COMPANY ACCOUNTS:** Explanation of certain terms – Public Limited Company, Private Limited Company - Share - Share Capital - Shareholder - Board of Directors - Stock Exchange - Listed Company - Share Price - Sensex – BSE - NSE; Annual report etc. Contents and disclosures in Annual Report - Company Balance Sheet and Statement of Profit and Loss - Content Analysis based on annual report including textual analysis.	08
V	**MANAGEMENT REPORTS**: Reports on Management Review and Governance; Report of Board of Directors - Management discussion analysis - Annual Report on CSR – Business responsibility report – Corporate governance report – Secretarial audit report.	08

Skill Developments Activities:

- Download annual reports of business organisations from the websites and go through the contents of the annual report and present the salient features of the annual report using some ratios and content analysis including textual analysis.
- Prepare accounting equation by collecting necessary data from medium sized firm.

- Prepare financial statements collecting necessary data from small business firms.
- Collect the management reports of any large scale organisation and analyse the same.
- Any other activities, which are relevant to the course.

Reference Books:

1. Hatfield, L. (2019). Accounting Basics. Amazon Digital Services LLC.
2. Horngren, C. T., Sundem, G. L., Elliott, J. A., & Philbrick, D. (2013). Introduction to Financial Accounting. London: Pearson Education.
3. Siddiqui, S. A. (2008). Book Keeping & Accountancy. New Delhi: Laxmi Publications Pvt. Ltd.
4. Sehgal, D. (2014). Financial Accounting. New Delhi: Vikas Publishing House Pvt.Ltd.
5. Tulsian, P. C. (2007). Financial Accounting. New Delhi: Tata McGraw Hill PublishingCo. Ltd.
6. Mukharji, A., & Hanif, M. (2015). Financial Accounting. New Delhi: Tata McGraw Hill Publishing Co. Ltd.
7. Maheshwari, S. N. & Maheshwari, S. K. (2018). Financial Accounting. New Delhi: Vikas Publishing House Pvt. Ltd.
8. Khan, M.Y. and Jain, P.K. Management Accounting. McGraw Hill Education.
9. Arora, M.N. Management Accounting, Vikas Publishing House, New Delhi

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com)

Course Code: B.Com. 2.1

Name of the Course: ADVANCED FINANCIAL ACCOUNTING

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**3+0+2**	**56 Hrs**

Pedagogy: Classrooms lecture, Case studies, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

1. Learn various methods of accounting for hire purchase transactions.
2. Deal with the inter-departmental transfers and their accounting treatment.
3. Demonstrate various accounting treatments for dependent & independent branches.
4. Prepare financial statements from incomplete records.

Module	Syllabus	Teaching Hours
I	**CONSIGNMENT ACCOUNTS:** Meaning of Consignment and Important Terms Used in Consignment. Valuation of Stock, Normal Loss, Abnormal Loss; Problems Relating to Consignment in the Books of Consignor and Consignee, Cost-Price Method and Invoice-Price Method – Theory and Practical Problems.	10
II	**BRANCH ACCOUNTS:** Dependent Branches: Features - Books of Accounts - Methods of Accounting of Dependent Branches: Debtors System, Stock and Debtors (Cost price & Invoice Price	10
III	**HIRE PURCHASE ACCOUNTING**: Hire Purchase System: Features – Accounting Treatment in the Books of Hire Purchaser and Hire Vendor - and Practical Problems. **(**excluding Repossession).	12
IV	**PARTNERSHIP: LLP** The Concept of Limited Liability Partnership: Meaning – Objectives Features – Merits in Conversion of Joint Stock Companies into Ltd. Liability Partnership.	12
V	**COOPERATIVE SOCIETY ACCOUNTING:** Introduction - Need - Registration, Types of Societies, Books of Accounts to be Maintained, Accounting Standards Applicable, Types of Audit, and Provisions of Co-op Societies Act. (Theory only)	12

Skill Developments Activities:

- Collect the copy of consignment and analyze the different books maintained
- Visit a branch, prepare the report on the method of their accounting
- Visit a nearby industry and study the process for hire purchase system of their installations
- Draft the accounting procedure of conversion of partnership into joint stock company
- Visit a nearby cooperative society, list out the books maintained and accounting standards applicable to them.
- Any other activities, which are relevant to the course.

Reference Books:

1. ICAI Study Materials on Principles & Practice of Accounting, Accounting andAdvanced Accounting.
2. SP Iyengar (2005), Advanced Accounting, Sultan Chand & Sons, Vol. 1.
3. Robert N Anthony, David Hawkins, Kenneth A. Merchant, (2017) Accounting: Textand Cases, McGraw-Hill Education, 13th Edition.
4. Charles T. Horngren and Donna Philbrick, (2013) Introduction to Financial Accounting,

Pearson Education, 11th Edition.
5. J.R. Monga, Financial Accounting: Concepts and Applications. Mayur Paper Backs, New Delhi, 32nd Edition.
6. S.N. Maheshwari, and. S. K. Maheshwari. Financial Accounting. Vikas Publishing House, New Delhi, 6th Edition.
7. B.S. Raman (2008), Financial Accounting Vol. I & II, United Publishers & Distributors
8. Compendium of Statements and Standards of Accounting. The Institute of Chartered Accountants of India, New Delhi.

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com)

Course Code: B.Com. 2.2

Name of the Course: BUSINESS MATHEMATICS

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4+0+0**	**56 Hrs**

Pedagogy: Classrooms lecture, Case studies, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

1. Understand the number system and indices applications in solving basic business problems.
2. Apply concept of commercial arithmetic concepts to solve business problems.
3. Make use of theory of equation in solving the business problems in the present context.
4. Understand and apply the concepts of Set Theory, Permutations & Combinations and Matrices solving business problems.
5. Apply measurement of solids in solving simple business problems.

Module	Syllabus	Teaching Hours
I	**NUMBER SYSTEM AND INDICES:** Introduction - Meaning - Natural Numbers - Even & Odd Numbers - Prime, Rational Number and its Features & Irrational Numbers - Simple Problems on Finding Sum of Natural, Odd and Even numbers- HCF and LCM - Problems thereon; Indices - Introduction - Laws of Indices, Application of laws for Simplification, Simple problems.	12
II	**COMMERCIAL MATHEMATICS:** Introduction - Meaning of Simple and Compound Interest and Problems thereon – Annuities - Types & Problems on Present and Future Value of Annuity; Ratios and Proportions - Meaning and Problems thereon - Problems on Speed - Time and Work.	10
III	**THEORY OF EQUATION:** Introduction – Meaning - Types of Equations – Simple or Linear Equations and Simultaneous Equations (only two variables), Elimination and Substitution Methods only. Quadratic Equation - Factorization and Formula Method ($ax^2 + bx + c = 0$ form only). Simple problems-Application of equations to business.	12
IV	**SET THEORY, PERMUTATIONS & COMBINATIONS:** Introduction - Meaning & Types of Sets - Laws of Sets - Venn Diagram - Problems thereon; Meaning and problems on Permutations and Combinations.	12
V	**MATRICES AND DETERMINANTS**: Meaning – Types – Operation on Matrices – Additions – Subtractions and Multiplication of two Matrices – Transpose – Determinants – Minor of an Element – Co-factor of an Element –Inverse – Crammer's Rule in two Variables – Problems	10

Skill Developments Activities:

- Show the number of ways in which your telephone number can be arranged to get odd numbers.
- Visit any Commercial Bank in your area and collect the information about types of loans and the rates of interest on loans.
- Use Matrix principles to implement food requirement and protein for two families.
- Measure your classroom with the help of a tape and find the cost of the carpet for the floor area of the classroom.
- Any other activities, which are relevant to the course.

Reference Books:

1. Saha and Rama Rao, Business Mathematics, HPH.
2. S.N.Dorairaj, Business Mathematics, United Publication.
3. R. Gupta, Mathematics for Cost Accountants.
4. S. P. Gupta, Business Mathematics.
5. Madappa and Sridhara Rao, Business Mathematics.
6. Padmalochana Hazarika, Business Mathematics.
7. Dr.B.H.Suresh, Quantitative Techniques, Chetana Book House.
8. Dr. Padmalochan Hazarika, A Textbook of Business Mathematics, S. Chand, New Delhi, No. 4, 2016.
9. A. P. Verma, Business Mathematics, Asian Books Private Limited, New Delhi, No. 3, January 2007.
10. D. C. Sancheti & V. K. Kapoor, Business Mathematics, S. Chand, New Delhi, 2014
11. A Lenin Jothi, Financial Mathematics, Himalaya Publications, Mumbai, No. 1, 2009.
12. B. M. Aggarwal, Business Mathematics, Ane Books Pvt. Ltd., No. 5, 2015

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com)

Course Code: B.Com. 2.2

Name of the Course: CORPORATE ADMINISTRATION

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4+0+0**	**56 Hrs**

Pedagogy: Classrooms lecture, Case studies, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

1. Understand the framework of Companies Act of 2013 and different kind ofcompanies.
2. Identify the stages and documents involved in the formation of companies in India.
3. Analyse the role, responsibilities and functions of Key management Personnel in Corporate Administration.
4. Examine the procedure involved in the corporate meeting and the role of company secretary in the meeting.
5. Evaluate the role of liquidator in the process of winding up of the company.

Module	Syllabus	Teaching Hours
I	**INTRODUCTION TO COMPANY:** Introduction - Meaning and Definition - Features - Highlights of Companies Act 2013 - Kinds of Companies – One Person Company - Private Company-Public Company - Company limited by Guarantee-Company limited by Shares - Holding Company- Subsidiary Company - Government Company - Associate Company- Small Company - Foreign Company-Global Company-Body Corporate-Listed Company.	12
II	**FORMATION OF COMPANIES:** Introduction - Promotion Stage: Meaning of Promoter, Position of Promoter & Functions of Promoter, Incorporation Stage: Meaning & contents of Memorandum of Association & Articles of Association, Distinction between Memorandum of Association and Articles of Association, Certificate of Incorporation, Subscription Stage – Meaning & contents of Prospectus, Statement in lieu of Prospects and Book Building, Commencement Stage - Document to be filed, e-filing, Register of Companies - Certificate of Commencement of Business; Formation of Global Companies: Meaning – Types – Features - Legal Formalities – Administration.	12
III	**COMPANY ADMINISTRATION:** Introduction - Key Managerial Personnel – Managing Director - Whole time Directors - the Companies Secretary, Chief Financial Officer - Resident Director, Independent Director, Auditors - Appointment - Powers - Duties & Responsibilities. Managing Director - Appointment - Powers - Duties & Responsibilities - Audit Committee - CSR Committee - Company Secretary - Meaning - Types - Qualification - Appointment - Position - Rights - Duties - Liabilities & Removal or dismissal.	12
IV	**CORPORATE MEETINGS:** Introduction - Corporate meetings: types – Importance - Distinction; Resolutions: Types -Distinction; Requisites of a valid meeting - Notice - Quorum - Proxies - Voting - Registration of resolutions; Role of a company secretary in convening the meetings.	10
V	**WINDING UP:** Introduction - Meaning - Modes of Winding up – Consequence of Winding up - Official Liquidator - Role & Responsibilities of Liquidator - Defunct Company - Insolvency Code.	10

Skill Developments Activities:

- Collect the Companies Act 2013 from the Ministry of Corporate Affairs website and prepare the highlights of the same.
- Visit any Registrar of the companies; find out the procedure involved in the formation of the companies.
- Visit any Company and discuss with Directors of the same on role and responsibilities and prepare report on the same.
- Collect the copy of notice of the Meeting and Resolutions, Prepare the dummy copy of Notice and resolutions.
- Contact any official liquidator of an organisation and discuss the procedure involved on the same and prepare report.
- Any other activities, which are relevant to the course.

Reference Books:

1. S.N Maheshwari, Elements of Corporate Law, HPH.
2. Balchandran, Business Law for Management, HPH
3. Dr. P.N. Reddy and H.R. Appanaiah, Essentials of Company Law and Secretarial Practice, HPH.
4. K. Venkataramana, Corporate Administration, SHBP.
5. N.D. Kapoor: Company Law and Secretarial Practice, Sultan Chand.
6. M.C. Bhandari, Guide to Company Law Procedures, Wadhwa Publication.
7. S.C. Kuchal, Company Law and Secretarial Practice.
8. S.C. Sharma, Business Law, I.K. International Publishers

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com)

Course Code: B.Com. 2.3

Name of the Course: LAW AND PRACTICE OF BANKING

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4+0+0**	**56 Hrs**

Pedagogy: Classrooms lecture, Case studies, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

1. Summarize the relationship between Banker & customer and different types offunctions of banker.
2. Analyse the role, functions and duties of paying and collecting banker.
3. Make use of the procedure involved in opening and operating different accounts.
4. Examine the different types of negotiable instrument & their relevance in the present context.
5. Estimate possible developments in the banking sector in the upcoming days.

Module	Syllabus	Teaching Hours
I	**INTRODUCTION TO BANKING:** Introduction- Meaning - Need - Importance - Primary, Secondary & Modern functions of banks - Origin of banking- Banker and Customer Relationship (General and special relationship) - Origin and growth of commercial banks in India - Types of Banks in India - Banks' Lending - changing role of commercial banks. RBI: History - Role & Functions.	12
II	**PAYING AND COLLECTING BANKER:** Paying banker: Introduction - Meaning – Role – Functions - Duties - Precautions and Statutory Protection and rights - Dishonor of Cheques - Grounds of Dishonor – Consequences of wrongful dishonor of Cheques; Collecting Banker: Introduction – Meaning - Legal status of collecting banker - Holder for value - Holder in due course – Duties & Responsibilities - Precautions and Statutory Protection to Collecting Banker.	12
III	**CUSTOMERS AND ACCOUNT HOLDERS:** Introduction - Types of Customers and Account Holders - Procedure and Practice in opening and operating accounts of different customers: Minors - Joint Account Holders- Partnership Firms - Joint Stock companies - Executors and Trustees - Clubs and Associations and Joint Hindu Undivided Family.	10
IV	**NEGOTIABLE INSTRUMENTS:** Introduction – Meaning & Definition – Features – Kinds of Negotiable Instruments: Promissory Notes - Bills of Exchange - Cheques - Crossing of Cheques – Types of Crossing; Endorsements: Introduction - Meaning - Essentials & Kinds of Endorsement – Rules of endorsement.	12
V	**RECENT DEVELOPMENTS IN BANKING:** Introduction - New technology in Banking - E-services - Debit and Credit cards - Internet Banking-Electronic Fund Transfer - MICR – RTGS – NEFT – ECS - Small banks-Payment banks- Digital Wallet-Crypto currency - KYC norms – Basel Norms - Mobile banking - E-payments - E-money. Any other recent development in the banking sector.	10

Skill Developments Activities:

- Refer RBI website and identify the different types of banks operating in India.
- Visit any Public sector bank & discuss with the branch manager about the role and functions as a paying and collecting banker.
- Collect and fill dummy account opening forms as different types of customer.

- Draft specimen of Negotiable instruments: bill of exchange, Promissory Notes and Cheques.
- Identify and prepare report on pros and cons of recent development in the field ofbanking sector.
- Any other activities, which are relevant to the course.

Reference Books:

1. Gordon & Natarajan, Banking Theory Law and Practice, HPH, 24th Edition
2. S. P Srivastava (2016), Banking Theory & Practice, Anmol Publications
3. Maheshwari. S.N. (2014), Banking Law and Practice, Kalyani Publishers, 11 edition
4. Shekar. K.C (2013), Banking Theory Law and Practice, Vikas Publication, 21st Edition.
5. Dr. Alice Mani (2015), Banking Law and Operation, SBH.

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)

Course Code: B.Com. 2.4 Open Elective Course

Name of the Course: 1. EVENT MANAGEMENT

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	**3+0+0**	**42 Hrs**

Pedagogy: Classroom lecture, Case studies, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

1. Develop their own career opportunity and build their life through event management activities.
2. Train students in skills to plan, manage and implement various types of events.
3. Gain confidence and enjoyment from involvement in the event management.
4. Identify best practice in the development and delivery of successful conferences and corporate gatherings.
5. Obtain a sense of responsibility for the multi-disciplinary nature of event management.

Module	Syllabus	Teaching Hours
I	**INTRODUCTION:** Understanding the concept of event and event management, Concept and design, Historical Perspective, , Size & type of event, Event Team, Planning and SWOT analysis, Emergency planning, Code of ethics.	08
II	**EVENT ORGANIZATION:** Operations and logistics, Catering, organizing accommodations, managing environment, Training and development.	08
III	**HRD IN EVENT MANAGEMENT:** HR Selection, Staffing, Staff motivation, Measuring performance, Monitoring control and evaluation, Event sponsorship.	08
IV	**STRATEGIC EVENT MANAGEMENT:** Strategic alternatives for growth, Segmentation and targeting markets for events, Job opportunities in event management, Event tourism.	08
V	**EVENT MARKETING AND ADVERTISING:** Nature of event Marketing, Process of event marketing, Marketing mix, Sponsorship, Image, Branding, Advertising Publicity and Public relations, Case studies on various aspects of event management**,** Presentations on event management.	10

Skill Developments Activities:

- Visit any event organized by the business organizations and list out the steps in conducting an event.
- Visit any organization which conduct event as its business operations and prepare a report.
- Conduct an activity to demonstrate the selection process for an educational event
- Conduct an event in the institution and evaluate the effectiveness of conducting an event.
- Prepare an advertisement copy of any event of your interest.
- Any other activities, which are relevant to the course.

Reference Books:

1. Singh, Sita Ram- Event Management, ATH Publishers, New Delhi.
2. Mahendi Ratta, Vaibhav- Career in Event Management, Publisher Abhishek, Chandigarh
3. Wagen Lynn Van Der- Event Management, Carlos Brenda R. Dorling Kindersley (India) Pvt. Ltd. And Pearson Education, Inc.

4. Mani K, Shulle, W. Ray- Event Processing, Tata Mc. Graw Hill New Delhi.
5. Saggere, Sanjay V.Gaur, Sanjaya Singh, Event Marketing and Mgt., Vikas Pub. House.
6. Divaker Sharma, Event Planning Management, Deep and Deep Publication.
7. Savita Mohan, Event Management and Public Relations, Enkay Publication House.
8. Successful Event Management By Anton Shone & Bryn Parry

Note: Latest edition of textbooks may be used.

Name of the Program: Bachelor of Commerce (B.Com)

Course Code: B.Com. 2.4 Open Elective Course

Name of the Course: 2. INVESTING IN STOCK MARKETS

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	**3+0+0**	**42 Hrs**

Pedagogy: Classrooms lecture, Case studies, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

1. Explain the basics of investing in the stock market, the investment environment as well as risk & return;
2. Analyse Indian securities market;
3. Examine EIC framework and conduct fundamental analysis;
4. Perform technical analysis;
5. Invest in mutual funds market.

Module	Syllabus	Teaching Hours
I	**BASICS OF INVESTING:** Basics of Investment & Investment Environment. Risk and Return, Avenues of Investment - Equity shares, Preference shares, Bonds & Debentures, Insurance Schemes, Mutual Funds, Index Funds. Indian Security Markets - Primary Market, Secondary Market and Derivative Market. Responsible Investment.	10
II	**FUNDAMENTAL ANALYSIS**: Top down and bottom up approaches, Analysis of international & domestic economic scenario, Industry analysis, Company analysis (Quality of management, financial analysis: Both Annual and Quarterly, Income statement analysis, position statement analysis including key financial ratios, Cash flow statement analysis, Industry market ratios: PE, PEG, Price over sales, Price over book value, EVA), Understanding Shareholding pattern of the company.	08
III	**TECHNICAL ANALYSIS**: Trading rules (credit balance theory, confidence index, filter rules, market breath, advances v/s declines and charting (use of historic prices, simple moving average and MACD) basic and advanced interactive charts. Do's & Don'ts of investing in markets.	08
IV	**INDIAN STOCK MARKET**: Market Participants: Stock Broker, Investor, Depositories, Clearing House, Stock Exchanges. Role of stock exchange, Stock exchanges in India- BSE, NSE and MCX. Security Market Indices: Nifty, Sensex and Sectoral indices, Sources of financial information. Trading in securities: Demat trading, types of orders, using brokerage and analyst recommendations	08
V	**INVESTING IN MUTUAL FUNDS**: Concept and background on Mutual Funds: Advantages, Disadvantages of investing in Mutual Funds, Types of Mutual funds- Open ended, close ended, equity, debt, hybrid, index funds and money market funds. Factors affecting choice of mutual funds. CRISIL mutual fund ranking and its usage, calculation and use of Net Asset Value.	08

Skill Developments Activities:

- Work on the spreadsheet for doing basic calculations in finance.
- Learners will also practice technical analysis with the help of relevant software.
- Practice use of Technical charts in predicting price movements through line chart, bar chart, candle and stick chart, etc., moving averages, exponential moving average.

- Calculate of risk and return of stocks using price history available on NSE website.
- Prepare equity research report-use of spreadsheets in valuation of securities, fundamental analysis of securities with the help of qualitative and quantitative data available in respect of companies on various financial websites, etc.
- Any other activities, which are relevant to the course.

Reference Books:

1. Chandra, P. (2017). Investment Analysis and Portfolio Management. New Delhi: Tata McGraw Hill Education.
2. Kevin, S. (2015). Security Analysis and Portfolio Management. Delhi: PHI Learning. Ranganatham,
3. M., & Madhumathi, R. (2012). Security Analysis and Portfolio Management. Uttar Pradesh: Pearson (India) Education.
4. Pandian, P. (2012). Security Analysis and Portfolio Management. New Delhi: Vikas Publishing House.

Note: Latest edition of text books may be used.

D. Annexure

Appendix-A

MODEL PROGRAMME STRUCTURE FOR BACHELOR OF COMMERCE, B.COM. BASIC/HONS.)
COMMERCE AS PROGRAMME CORE

Sem.	Discipline Core (DSC) (Credits)	Discipline Elective (DSE) /Open Elective (OE) (Credits)	Ability Enhancement Compulsory Courses (AECC), Languages (Credits) (L+T+P)		Skill Enhancement Courses (SEC)			Total Credits
					Skill based (Credits) (L+T+P)	Value based (Credits) (L+T+P)		
I	B.Com C1 (4) B.Com C2 (4) B.Com C3 (4)	OE-1 (3)	L1-1(3), L2-1(3) (4 hrs. each)		SEC-1: Digital Fluency (2) (1+0+2)	Yoga (1) (0+0+2)	Health & Wellness(1) (0+0+2)	25
II	B.Com C4 (4) B.Com C5 (4) B.Com C6 (4)	OE-2 (3)	L1-2(3), L2-2(3) (4 hrs. each)	Environmental Studies (2)		Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Exit option with Certificate in Commerce (with the completion of courses equal to a minimum of 48 credits)								
III	B.Com C7 (4) B.Com C8 (4) B.Com C9 (4)	OE-3 (3)	L1-3(3), L2-3(3) (4 hrs each)		SEC-2: AI or some other SEC(2)(1+0+2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
IV	B.Com C10 (4) B.Com C11 (4) B.Com C12 (4)	OE-4 (3)	L1-4(3), L2-4(3) (4 hrs each)	Constitution of India (2)		Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	25
Exit option with Diploma in Commerce (with the completion of courses equal to a minimum of 96 credits)								
V	B.Com C13 (4) B.Com C14 (4) B.Com C15 (4)	B.Com E1 (3) Vocational-1 (3) Internship (2)			SEC-3: Cyber Security or some other SEC(2) (1+0+2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	24
VI	B.Com C16 (4) B.Com C17 (4) B.Com C18 (4)	B.Com E2 (3) Vocational-2 (3) Internship (2)			SEC-4: Professional Communication (2)	Sports (1) (0+0+2)	NCC/NSS/R&R(S&G)/ Cultural (1) (0+0+2)	24
Exit Option with Bachelor of Commerce Degree, B.Com. (with the completion of courses equal to a minimum of 140 credits)								
VII	B.Com C19 (4) B.Com C20 (4) B.Com C21 (4	B.Com E3 (3) Vocational-3 (3) Res. Methodology (3)						21
VIII	B.Com C22 (3) B.Com C23 (3) B.Com C24 (3)	B.Com E4 (3) Vocational-4 (3) Res. Project(6)*						21
Award of Bachelor of Commerce Degree with Honors, B.Com.(Hons.) (with the completion of courses equal to a minimum of 180 credits								

*In lieu of the research Project, two additional elective papers/ Internship may be offered

Appendix B

COURSE PATTERNS, SCHEMES OF EXAMINATIONS AND CREDITS

B.Com. Degree & Honors Degree Programmes

a) I/ II/ III/ IV Semesters

Sem.	Subjects	Course /Paper	Instructionhrs / week	Hrs. of Exam	Marks			Credits
					IA	Exam	Total	
I-IV	Discipline Core	3T	3 x 4	3 x 2	3x40	3x60	3x100	3x4
	Open Elective	1T	1 x 3	1 x 2	1x40	1x60	1x100	1x3
I-IV	2 Languages	2T	2 x 4	2 x 2	2x40	2x60	2x100	2x3
II &IV	ES or CoI	1T	1 x 3	1 x 2	1x20	1x30	1 x 50	1x2
I &III	SEC	T+P	1 + 2	2	1x25	1x25	1 x 50	1x2
I-IV	Yoga/ Sports	1P	1 x 2	-	1x25	-	1 x 25	1x1
I-IV	H&W/NCC/NSS/R&R/CA	1P	1 x 2	-	1x25	-	1 x 25	1x1

b) V/VI Semester

Sem.	Subjects	Course/ Paper	Instruction hrs / week	Hrs. of Exam	Marks			Credits
					IA	Exam	Total	
V/VI	Discipline core	3T	3 x 4	3 x 2	3x40	3x60	3x100	3x4
	Discipline Elective	1T	1 x 3	1 x 2	1x40	1x60	1x100	1x3
	Vocational Course	1T	1 x 3	1 x 2	1x40	1x60	1x100	1x3
	Internship	3 to 4 weeks		Report & presentation	1x25	1x25	1x50	1x2
	SEC	T+P	1+2	1	1x25	1x25	1x50	1x2
V/VI	Yoga/ Sports	1P	1x2	-	1x25	-	1x25	1x1
	H&W/NCC/NSS/R&R/CA	1P	1x2	-	1x25	-	1x25	1x1

c) VII/VIII Semester

Sem.	Subjects	Course/ Paper	Instruction hrs/ week	Duration of Exam (hrs)	Marks			Credits
					IA	Exam	Total	
VII	Discipline Core	3T	3 x 4	3 x 2	3x40	3x60	3x100	3x4
	Discipline Elective	1T	1 x 3	1 x 2	1x40	1x60	1x100	1x3
	Vocational Course	1T	1 x 3	1 x 2	1x40	1x60	1x100	1x3
	Research Methodology	1T	1x 3	1x 2	1x40	1x60	1x100	1x3
VIII	Discipline Core	3T	3 x 3	3 x 2	3x40	3x60	3x100	3x3
	Discipline Elective	1T	1 x 3	1 x 2	1x40	1x60	1x100	1x3
	Vocational Course	1T	1 x 3	1 x 2	1x40	1x60	1x100	1x3
	Research Project*		12	Viva+Report Evaluation	60	40+100 Viva	1x200	1x6

* Two Discipline Elective papers may be offered in lieu of the project work.

d) IX/ X Semester

Sem.	Subjects	Course/ Paper	Instruction hrs/ week	Duration of Exam (hrs.)	Marks			Credits
					IA	Exam	Total	
IX	Discipline Core without Practical	3T	3 x 4	3 x 2	3x40	3x60	3x100	3 x 4
	Discipline Elective	3T	3 x 3	3 x 2	3x40	3x60	3x100	3 x 3
	Open Elective	1T	1 x 3	1 x 2	1x40	1x60	1x100	1 x 3
X	Discipline Core	2T	2 x 4	2 x 2	2x40	2x60	2x100	2 x 4
	Discipline Elective	2T	2 x 3	2 x 2	2x40	2x60	2x100	2 x 3
	Research Project*	1RP	16	Viva+Report Evaluation	60	40+100 (Viva)	1x200	1 x 8

Note: Abbreviations used

T- Theory; **P-** Practical; **AECC-** Ability Enhancement Compulsory Courses, **ES**-Environmental Studies; **CoI**- Constitution of India; **SEC-** Skill Enhancement Courses,**CC/EA & CA**- Co-curricular/Extension and Cultural Activities.

Appendix-C

QUESTION PAPER PATTERN

Maximum Marks: 60 **Exam Duration: 2 Hours**

Section – A (5X2=10)

1. **Answer any five sub questions, each sub question carries two marks**
   - **a.**
   - **b.**
   - **c.**
   - **d.**
   - **e.**
   - **f.**
   - **g.**

Section – B (3X5=15)

Answer any three questions; each question carries five marks (in case of practical papers four problems and one theory question)

2.
3.
4.
5.
6.

Section – C (2X10=20)

Answer any two questions; each question carries fifteen marks (in case of practical papers three problems and one theory question)

7.
8.
9.
10.

Section - D (1X15=15)

Compulsory question (Case study/problem)

11.

RANI CHANNAMMA UNIVERSITY
BELAGAVI

NAAC Accredited with B+ Grade - 2021

BACHELOR OF COMMERCE
IN THE
FUCULTY OF COMMERCE

BACHELOR OF COMMERCE
(Basic/Hons.)
IIIrd and IVth Semesters w.e.f.

Academic Year 2022-23 and Onwards

Under

New Education Policy - 2020

Semester III								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L + T + P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
16	Lang.1.1	Language - I	AECC	3+1+0	60	40	100	3
17	Lang.1.2	Language – II	AECC	3+1+0	60	40	100	3
18	B.Com.3.1	Corporate Accounting	DSC	3+0+2	60	40	100	4
19	B.Com.3.2	Business Statistics	DSC	3+0+2	60	40	100	4
20	B.Com.3.3	Cost Accounting	DSC	3+0+2	60	40	100	4
	B.Com.3.4	Financial Education & Investment Awareness	SEC/SB	1+0+2	30	20	50	2
21	B.Com.3.5	Sports/NCC/NSS/R&R(S&G) /Culture	SEC/VB	0+0+4		50	50	2
22	B.Com.3.6	Advertising Skills/Entrepreneurial Skills	OEC	3+0+0	50	50	100	3
Sub –Total (C)					380	320	700	25

Semester IV								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L + T + P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
23	Lang.1.1	Language - I	AECC	3+1+0	60	40	100	3
24	Lang.1.2	Language – II	AECC	3+1+0	60	40	100	3
25	B.Com.4.1	Advanced Corporate Accounting	DSC	3+0+2	60	40	100	4
26	B.Com.4.2	Costing Methods & Techniques	DSC	3+0+2	60	40	100	4
27	B.Com.4.3	Business Regulatory Framework	DSC	4+0+0	60	40	100	4
28	B.Com.4.4	Constitution of India	AECC	2+0+0	50	50	100	3
29	B.Com.4.5	Artificial Intelligence	SEC	1+0+2	30	20	50	2
30	B.Com.4.6	Sports/NCC/NSS/others (if any)	SEC-VB	1+0+2		50	50	2
Sub –Total (D)					380	320	700	25

EXIT OPTION WITH DIPLOMA – Ability to solve broadly defined problems.

Curriculum of III Semester Courses

Corporate Accounting

Business Statistics

Cost Accounting

1. Advertising Skills
   or
2. Entrepreneurial Skills

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: B.Com.3.1
Name of the Course: Corporate Accounting

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	3+2 Hrs	56 Hrs

Pedagogy: Classroom lectures, Case studies, Tutorial Classes, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

a) Understand the treatment of underwriting of shares.
b) Comprehend the computation of profit prior to incorporation.
c) Know the valuation of intangible assets.
d) Know the valuation of shares.
e) Prepare the financial statements of companies as per companies act, 2013.

Syllabus:	**Hours**
Module No. 1: Underwriting of Shares	**10**

Introduction -Meaning of Underwriting – SEBI regulations regarding underwriting; Underwriting commission. Underwriter – functions - Advantages of Underwriting, Types of underwriting - Marked and Unmarked Applications –Determination of Liability in respect of underwriting contract – when fully underwritten and partially underwritten – with and without firm underwriting problem.

Module No. 2: Profit Prior to Incorporation	**10**

Introduction - Meaning – calculation of sales ratio – time ratio – weighted ratio – treatment of capital and revenue expenditure – Ascertainment of pre-incorporation and post- incorporation profits by preparing statement of Profit and Loss and Balance Sheet as per schedule III of companies Act, 2013.

Module No. 3 Valuation of Intangible Assets	**10**

Introduction - Valuation of Goodwill –factors influencing goodwill, circumstances of valuation of goodwill- Methods of Valuation of Goodwill: Average Profit Method, Capitalization of average Profit Method, Super Profit Method, Capitalization of Super Profit Method, and Annuity Method-Problems. Brand valuation and Intellectual Property Rights (IPR).

Module No. 4: Valuation of Shares	**10**

Introduction - Meaning – Need for Valuation – Factors Affecting Valuation – Methods of Valuation: Intrinsic Value Method, Yield Method, Earning Capacity Method, Fair Value of shares. Rights Issue and Valuation of Rights Issue, Valuation of Warrants.

Module 5: Financial Statements of Companies	**16**

Statutory Provisions regarding preparation of financial statements of companies as per schedule III of companies act,2013 and IND AS-1 – Treatment of Special Items – Tax deducted at source – Advance payment of Tax – Provision for Tax – Depreciation – Interest on debentures – Dividends – Rules regardingpayment of dividends –Transfer to Reserves – Preparation of Statement of profit and loss and Balance Sheet.

Skill Development Activities:

1. Compile the list of Indian companies which have issued shares through IPO / FPO in the current financial year.
2. Determine Underwriters' Liability in case of an IPO, with imaginary figures. • Present the format of 'Statement of Profit and Loss', 'Balance Sheet' and 'Statement of Changes in Equity', with imaginary figures
3. Collect financial statement of a company and calculate intrinsic value of an equity share.
4. Collect annual report of a Company and List out its assets and Liabilities.
5. Collection of latest financial statements of a company and find out the intrinsic value ofshares
6. Collect the annual reports of company and calculate the value of goodwill under different methods
7. Any other activities, which are relevant to the course.

Text Books:

1. J.R. Monga, Fundamentals of Corporate Accounting. Mayur Paper Backs, NewDelhi.
2. M.C. Shukla, T.S. Grewal, and S.C. Gupta. Advanced Accounts. Vol.-II. S. Chand & Co., New Delhi.
3. S.N. Maheshwari, and S. K. Maheshwari. Corporate Accounting. Vikas PublishingHouse, New Delhi.
4. Ashok Sehgal, Fundamentals of Corporate Accounting. Taxman Publication, NewDelhi.
5. V.K. Goyal and Ruchi Goyal, Corporate Accounting. PHI Learning.
6. Jain, S.P. and K.L. Narang. Corporate Accounting. Kalyani Publishers, New Delhi.
7. Bhushan Kumar Goyal, Fundamentals of Corporate Accounting, InternationalBook House
8. P. C. Tulsian and Bharat Tulsian, Corporate Accounting, S.Chand
9. Amitabha Mukherjee, Mohammed Hanif, Corporate Accounting, McGraw HillEducation
10. Arulanandam& Raman ; Corporate Accounting –II
11. Madegowda J – Advanced corporate accounting, HPH
12. Soundarajan. A & K. Venkataramana, Corporate Accounting, VBH.
13. S. P. Jain and K. L. Narang – Corporate Accounting
14. S. Bhat- Corporate Accounting.

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: B.Com. 3.2
Name of the Course: Business Statistics

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**3+2 Hrs**	**56 Hrs**

Pedagogy: Classroom lectures, Case studies, Tutorial Classes, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

a. Familiarizes statistical data and descriptive statistics for business decision-making.
b. Comprehend the measures of variation and measures of skewness.
c. Demonstrate the use of probability and probability distributions in business.
d. Validate the application of correlation and regression in business decisions.
e. Show the use of index numbers in business.

Syllabus:	**Hours**
Module No. 1: Statistical Data and Descriptive statistics.	**14**

Nature and Classification of data: Univariate, bivariate and multivariate data; Measures of Central Tendency: Mathematical averages including arithmetic mean, Properties and applications. Positional Averages -Mode and Median (including graphic determination).

Module No. 2: Measures of Variation: and Skewness	**12**

Measures of Variation: absolute and relative. Range, quartile deviation, mean deviation, standard deviation, and their coefficients, Properties of standard deviation/variance.
Skewness: Meaning, Measurement using Karl Pearson and Bowley's measures; concept of Kurtosis.

Module No. 3: Probability Distributions	**10**

Theory of Probability. Approaches to the calculation of probability; Calculation of event Probabilities. Addition and multiplication laws of probability (Proof not required); Conditional probability and Bayes' Theorem (Proof not required)- Expectation and variance of a random variable - Probability distributions - Binomial distribution: Probability distribution function, Constants, Shape, Fitting of binomial distribution - Poisson distribution: Probability function, (including Poisson approximation to binomial distribution), Constants, Fitting of Poisson distribution - Normal distribution:
Probability distribution function, Properties of normal curve, Simple problems.

Module No. 4: Correlation and Regression Analysis	**12**

Correlation Analysis: Meaning of Correlation: - types of correlation- Positive and negative correlation-simple, partial, and multiple correlation. linear and Non-linear correlation and Scatter diagram, Pearson's co-efficient of Correlation; Correlation and

Probable error; Spearman's Rank Correlation co-efficient. -problems.
Regression Analysis: meaning and definition- regression lines, Regression equations and estimation; Properties of regression coefficients; Relationship between Correlation and Regression coefficients- problems.

Module 5: Index Numbers	**8**

Meaning and uses of index numbers; Construction of index numbers: Fisher's ideal index number with Time Reversal and Factor Reversal Tests. Construction of consumer price indices Using Aggregative Expenditure method and Family Budget method.

Skill Development Activities:

1. Application of MS Excel Functions in statistical decision making and studentsshould submit output of the same.
2. Collect the age statistics of 10 new married couples calculate Correlation coefficient.
3. Recall the use of probability theory in business.
4. Identify the applicability of correlation and regression in business decisionmaking.
5. Construct consumer price indices with imaginary figures.
6. Any other activities, which are relevant to the course.

Text Books:

1. Gupta, S.P., and Archana Agarwal. Business Statistics, Sultan Chand and Sons,New Delhi.
2. Vohra N. D., Business Statistics, McGraw Hill Education.
3. Gupta, S.C. Fundamentals of Statistics. Himalaya Publishing House.
4. Anderson, Sweeney, and Williams, Statistics for Students of Economics and Business, Cengage Learning.
5. CB Gupta
6. DN Elhance Fundamentals of statistics
7. Sen Chetty and Kapoor mathematical statistics

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: B.Com. 3.3
Name of the Course: Cost Accounting

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**3+2 Hrs**	**56 Hrs**

Pedagogy: Classrooms lecture, Case studies, Tutorial classes, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the students will be able to

a) Understand concepts of cost accounting & Methods of Costing.
b) Outline the Procedure and documentations involved in procurement of materials& compute the valuation of Inventory.
c) Make use of payroll procedures & compute idle and over time.
d) Discuss the methods of allocation, apportionment & absorption of overheads.
e) Prepare cost sheet & discuss cost allocation under ABC.

Syllabus:	**Hours**
Module No. 1: Introduction to Cost Accounting	**12**

Introduction- Meaning and definition- Objectives, Importance and Uses of Cost Accounting, Difference between Cost Accounting and Financial Accounting; Various Elements of Cost and Classification of Cost; Cost object, Cost unit, Cost driver, cost centre; Cost reduction and Cost control; Methods and Techniques of Costing (Meanings Only); Use of IT in Cost Accounting; Limitations of Cost Accounting; Cost Sheet: Meaning and Cost heads in a Cost Sheet, Presentation of Cost Information in Cost Sheet . Problems on
Cost Sheet, Tenders and Quotations.

Module No. 2: Material Cost	**12**

Materials: Meaning, Importance and Types of Materials – Direct and Indirect Material
Materials material control. - Inventory control Technique of inventory control, problems on level setting and EOQ. Procurement- Procedure for procurement of materials and documentation involved in materials accounting – Material Storage: Duties of Store keeper, pricing of material issues, preparation of Stores Ledger Account
– FIFO, LIFO, Simple Average Price and Weighted Average Price Methods – Problems.

Module No. 3: Employee Cost	**10**

Introduction – Employee Cost – types of labour cost -Labour Cost Control – time keeping and time booking and Payroll Procedure -Preparation of Payroll: Idle Time Causes and Treatment of Normal and Abnormal Idle time, Over Time Causes and Treatment -Labour Turnover- Meaning, Reasons and Effects of Labour turnover. Methods of Wage Payment: Time rate system and piece rate system, and the Incentive
schemes- Halsey plan, Rowan plan and Taylor differential piece rate system-problems.

Module No. 4: Overheads C ost	**12**

Introduction- Meaning and Classification of Overheads; Accounting and Control of Manufacturing Overheads: Estimation and Collection, Cost Allocation, Apportionment, Re-apportionment and Absorption of Manufacturing Overheads; Problems on Primary and Secondary overheads distribution using Reciprocal Service Methods (Repeated Distribution Method and Simultaneous Equation Method); Absorption of Overheads:
Meaning and Methods of Absorption of Overheads; Problems on Machine Hour Rate.

Module No. 5: Reconciliation of Cost and Financial Accounts	10

Introduction – meaning of reconciliation, Reasons for differences in Profits under Financial and Cost Accounts; Procedure for Reconciliation – Ascertainment of Profits as per Financial Accounts and Cost Accounts and Reconciliation of Profits of both sets of
Accounts – Preparation of Reconciliation Statement – Problems.

Skill Developments Activities:

1. Visit any Manufacturing entity, collect the method of inventory valuation adopted & procedure involved in procuring inventory.
2. Draw the format of five documents used for material accounting
3. Prepare dummy Payroll with imaginary figures.
4. Visit any large-scale organization, identify the techniques used for controlling administrative, Selling & distribution overheads.
5. Visit any manufacturing entity and collect the cost date and prepare the cost sheet.
6. Any other activities, which are relevant to the course.

Text Books:

1. Charles T. Horngren, Srikant M. Datar, Madhav V. Rajan, Cost Accounting:A Managerial Emphasis, Pearson Education.
2. Jawahar Lal, Cost Accounting., McGraw Hill Education
3. Madegowda J, Cost Accounting, HPH.
4. Rajiv Goel, Cost Accounting, International Book House
5. Jain, S.P. and K.L. Narang. Cost Accounting: Principles and Methods. Kalyani Publishers
6. Arora, M.N. Cost Accounting – Principles and P r a c t i c e , Vikas Publishing House, New Delhi.
7. Maheshwari, S.N. and S.N. Mittal. Cost Accounting: Theory and Problems. Shri Mahavir Book Depot, New Delhi.
8. Iyengar, S.P. Cost Accounting, Sultan Chand & Sons
9. Mariyappa B Cost Accounting, HPH

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: B.Com. 3.4
Name of the Course: Financial Education and Investment Awareness

Objectives:

1. Provide the foundations for financial decision making
2. List out various saving and investment alternatives available for a common man
3. Give a detailed overview of stock markets and stock selection.
4. Orient the learners about mutual funds and the criteria for selection.

Module – I: Foundations for Finance

Introduction to Basic Concepts: Understand the need for financial planning – basic concepts – life goals and financial goals – format of a sample financial plan for a young adult.

Economics: Meaning – scope – key concepts influencing decision making both micro and macro.

Banking in India: Types of Bank Deposits, Deposit Insurance (PMJDY). Traditional and New Banking Models. Debit and Credit Cards. Digital Payment System – Internet Banking (NEFT, RTGS and IMPS), Mobile Banking, Mobile Wallet, AEPS, UPI.

Orientation to Financial Statements: financial terms and concepts, model for reading financial statements, basic ratios for evaluating companies while investing – Time Value of Money – Concept of Compounding and Discounting.

Module – II: Investment Management

Investment Goals: Basic investment objectives – Investment goals – time frame – assessing risk profile – concept of diversification – risk measurement tools.

Investment and Saving Alternatives for a Common Investor: Insurance – Health, Life and Other General Insurance (Vehicle Insurance, Property Insurance, etc), Retirement and Pension Plans – National Pension System, Atal Pension Yojana, PM-SYM Yojana, PMLVMY PMKMDY etc., Stocks, Bonds, Mutual Funds. Investor Protection and Grievance Redressal.

Stock Markets: Primary Market and Secondary Market, Stock Exchanges, Stock Exchange Operations – Trading and Settlement, Demat Account, Depository and Depository Participants.

Stock Selection: Fundamental Analysis – Economy Analysis, Industry Analysis and Company Analysis. Technical Analysis – Graphical Patterns, Candle-stick Patterns, Indicators andOscillators.

Stock Return and Risk: Analysing risk and returns trade offrelationship-investment risk.

Module -III: Mutual Funds and Financial Planning Essentials

Mutual Funds: Features of Mutual Funds, Mutual Fund History in India, Major Fund Houses in India and Mutual Fund Schemes. Types of Mutual Fund Plans. Net Asset Value.

Criteria for selection of Mutual Funds: Returns, Performance Measures – Sharpe, Treynor, Alpha, Beta and r^2.

Financial Planning: Sample formats – Integrating all the concepts learnt with a personal financial plan.

Giving and supporting: Family support – charitable giving – crowd sourcing for needs.

3.5 Sports/NCC/NSS/Others (If any) – as per concerned University Guidelines.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: B.Com. 3.6 (OEC)
Name of the Course: Advertising Skills

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs	42 Hrs

Pedagogy: Classrooms lecture, Case studies, Group discussion & Seminar etc.,

Course Outcomes: On successful completion of the course, the students will be able to

a. Familiarize with advertising concepts.
b. Able identify effective media choice for advertising.
c. Develop ads for different media.
d. Measure the advertising effectiveness.
e. Analyze the role of advertising agency.

Syllabus:	**Hours**
Module No. 1: Introduction	**10**
Communication Process; Advertising as a tool of communication; Meaning, nature and importance of advertising; Types of advertising; Advertising objectives. Audienceanalysis; Setting of advertising budget: Determinants and major methods.	
Module No. 2: Media Decisions	**07**
Major media types - their characteristics, internet as an advertising media, merits and demerits; Factors influencing media choice; media selection, media scheduling, Advertising through the Internet-media devices.	
Module No. 3: **Message Development**	**08**
Advertising appeals, Advertising copy and elements, Preparing ads for different media	
Module No. 4: Measuring Advertising Effectiveness	**10**
Evaluating communication and sales effects; Pre- and Post-testing techniques	
Module No. 5: Advertising Agency	**07**
a) Advertising Agency: Role, types and selection of advertising agency. b) Social, ethical and legal aspects of advertising in India.	

Skill Development Activities:

1. Analyze the audience feedback on advertisement of FMCG.
2. List out any ten products/services advertised through internet.
3. Design any two ads for print media.
4. Examine the legal aspects of advertising in India and submit the report.
5. Any other activities, which are relevant to the course.

Text Books:

1. George E Belch, Michael A Belch, Keyoor Purani, Advertising and Promotion .An Integrated Marketing Communications Perspective (SIE), McGraw Hill Education
2. S. Wats Dunn, and Arnold M. Barban. Advertising: It's Role in Marketing.Dryden Press
3. Burnett, Wells, and Moriatty. Advertising: Principles and Practice. 5th ed.Prentice Hall of India, New Delhi.
4. Batra, Myers and Aakers. Advertising Management. PHI Learning.
5. Terence A. Shimp. Advertising and Promotion: An IMC Approach. CengageLearning.
6. Sharma, Kavita. Advertising: Planning and Decision Making, Taxmann Publications
7. Jaishree Jethwaney and Shruti Jain, Advertising Management, Oxford UniversityPress, 2012
8. Chunawala and Sethia, Advertising, Himalaya Publishing House
9. Ruchi Gupta, Advertising, S. Chand & Co.
10. O'Guinn, Advertising and Promotion: An Integrated Brand Approach, CengageLearning

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: B.Com. 3.6 (OEC)
Name of the Course: Entrepreneurship Skills

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs	42 Hrs

Pedagogy: Classrooms lecture, Case studies, Group discussion & Seminar etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

a. Discover their strengths and weaknesses in developing the entrepreneurial mind-set.
b. Identify the different Government Institutions/Schemes available for promotingEntrepreneurs.
c. Understand the various aspects to set-up an Enterprises.
d. Familiarise Mechanism of Monitoring and maintaining an Enterprises.
e. Know the various features for successful/unsuccessful entrepreneurs.

Syllabus:	**Hours**
Module No. 1: Introduction	**10**
Need of becoming entrepreneur- ways to become a good entrepreneur-Enabling environment available to become an entrepreneur. Self-discovery, Idea Generation- Idea Evaluation- Feasibility analysis- Finding team-Preparation of business model.	
Module No. 2: Promoting Entrepreneur	**08**
Introduction-Different Government institutions/schemes promoting entrepreneurs: Gramin banks, PMMY-MUDRA Loan, DIC, SIDA, SISI, NSIC, and SIDO, etc.,	
Module No. 3: Enterprise Set-up	**08**
Introduction – Ways to set up an enterprise and different aspects involved: legal compliances, marketing aspect, budgeting etc.,	
Module No. 4: Monitoring and Maintaining an Enterprise	**10**
Introduction – Day to day monitoring mechanism for marinating an enterprise-DifferentGovernment Schemes supporting entrepreneurship.	
Module No. 5: Caselets Discussion	**06**
Examples of successful and unsuccessful entrepreneurship of MUDRA Loan, Gramin banks, SISI and NSIC etc.,	

Skill Development Activities:

1. List out the discovery and evaluation of viable business ideas for new venturecreation.
2. Practice critical talents and traits required for entrepreneurs such as problemsolving, creativity, communication, business math, sales, and

negotiation

3. List out practical issues in setting-up of different enterprises.
4. Analyze the impact of various Government schemes in promotion of entrepreneurs.
5. Any other activities, which are relevant to the course.

Text Books:

1. Entrepreneurship - Starting, Developing, and Management a new Enterprise –Hisrich and –Peters-Irwin
2. Fayolle A (2007) Entrepreneurship and new value creation. Cambridge, CambridgeUniversity Press
3. Hougaard S. (2005) The business idea. Berlin, Springer
4. Lowe R & S Mariott (2006) Enterprise: Entrepreneurship & Innovation. Burlington,Butterworth Heinemann

Note: Latest edition of text books may be used.

Curriculum of IV Semester Courses

Advanced Corporate Accounting

Costing Methods & Techniques

Business Regulatory Framework

Constitution of India (curriculum will be given by KSHEC)

Artificial Intelligence (Curriculum will be given by KSHEC)

Sports/NCC/NSS/Others (if any)

1. Business Ethic

Or

2. Corporate Governance

Name of the Program: Bachelor of Commerce (B.Com.)

Course Code: B.Com. 4.1

Name of the Course: Advanced Corporate Accounting

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**3+2 Hrs**	**56 Hrs**

Pedagogy: Classroom lectures, Case studies, Group discussion & Seminar etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

a) Know the procedure of redemption of preference shares.
b) Comprehend the different methods of Mergers and Acquisition of Companies
c) Understand the process of internal reconstruction.
d) Prepare the liquidators final statement of accounts.
e) Understand the recent developments in accounting and accounting standards.

Syllabus:	**Hours**
Module No. 1: Redemption of Preference Shares	**10**

Meaning – legal provisions – treatment regarding premium on redemption – creation of Capital Redemption Reserve Account– Fresh issue of shares – Arranging for cash balance for the purpose of redemption – minimum number of shares to be issued for redemption
- issue of bonus shares – preparation of Balance sheet (Schedule III to Companies Act2013) after redemption.

Module No. 2: Mergers and Acquisition of Companies	**16**

Meaning of Amalgamation and Acquisition – Types of Amalgamation – Amalgamation in the nature of Merger – Amalgamation in the nature of Purchase - Methods of Calculation of Purchase Consideration (Ind AS 103), Net asset Method - Net Payment Method, Accounting for Amalgamation (Problems on pooling of interest method and purchase method) – Journal Entries and Ledger Accounts in the Books of Transferor Company and Journal Entries in the books of Transferee Company – Preparation of Balance Sheet after Merger. (Schedule III to Companies Act 2013).

Module No. 3: **Internal Reconstruction of Companies**	**10**

Meaning of Capital Reduction; Objectives of Capital Reduction; Provisions for Reduction of Share Capital under Companies Act, 2013. Forms of Reduction. Accounting for Capital Reduction. Problems on passing Journal Entries, preparation of Capital Reduction Account and Balance sheet after reduction (Schedule III to Companies Act 2013).

Module No. 4: Liquidation of Companies	**12**

Meaning of Liquidation, Modes of Winding up – Compulsory Winding up, Voluntary Winding up and winding up subject to Supervision by Court. Order of payments in the event of Liquidation. Liquidator's Statement of Account. Liquidator's remuneration. Problems on preparation of Liquidator's Statement of Account.

Module No. 5: Recent Developments in Accounting and Accounting standards.	**08**

Human Resource Accounting – Environmental Accounting Discloser as per Global Reporting Initiative (GRI) Reporting of variables – Social Responsibility Accounting, Indian Accounting Standards- Meaning- objectives-Significance of Accounting standards in India- Process of setting Accounting Standards in India-
List of Indian accounting standards. (IND AS).

Skill Development Activities:

1. List out legal provisions in respect of Redemption of Preference shares.
2. Calculation of Purchase consideration with imaginary figures.
3. List any five cases of amalgamation in the nature of merger or acquisition of JointStock Companies.
4. List out legal provisions in respect of internal reconstruction.
5. List out any five Indian Accounting Standards.
6. Any other activities, which are relevant to the course.

Text Books:

1. Arulanandam & Raman ; Corporate Accounting-II, HPH
2. Anil Kumar.S Rajesh Kumar.V and Mariyappa .B Advanced Corporate Accounting, HPH
3. Dr. Venkataraman. R – Advanced Corporate Accounting
4. S.N. Maheswari , Financial Accounting, Vikas publishing
5. Soundarajan A & K. Venkataramana, Advanced Corporate Accounting, SHBP.
6. RL Gupta, Advanced Accountancy, Sultan Chand
7. K.K Verma – Corporate Accounting.
8. Jain and Narang, Corporate Accounting.
9. Tulsian, Advanced Accounting,
10. Shukla and Grewal – Advanced Accountancy, Sultan Chand
11. Srinivas Putty, Advanced Corporate Accounting, HPH.

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: B.Com. 4.2
Name of the Course: Costing Methods and Techniques

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	3+2 Hrs	56 Hrs

Pedagogy: Classroom lectures, Case studies, Group discussion & Seminar etc.,

Course Outcomes: On successful completion of the course, the Students will be able to

a) The method of costing applicable in different industries.
b) Determination of cost by applying different methods of costing.
c) Prepare flexible and cash budget with imaginary figures
d) Analyse the processes involved in standard costing.
e) Familiarize with the Activity Based Costing and its applications.

Syllabus:	**Hours**
Module No. 1: Job and Contract Costing	**12**

Job Costing: Meaning, prerequisites, job costing procedure, Features, objectives, applications, advantages and disadvantages of Job costing, Job cost sheet- simple problems.
Contract Costing: Meaning, features of contract costing, applications of contract costing, similarities and dissimilarities between job costing and contract costing, recording of contract costs, meaning of terms used in contract costing; treatment of profit on incomplete contracts- Problems.

Module No. 2: Process and Service Costing	**12**

Process costing: Meaning, features and applications of Process Costing; comparison between Job Costing and Process Costing, advantages and disadvantages of process costing; treatment of process losses and gains in cost accounts; preparation of process accounts.
Service costing: Introduction to service costing; Application of Service costing; Service costing v/s product costing; Cost units for different service sectors; Service cost statement; Determination of costs for different service sectors - Transport services, hospitals and educational institutions- problems on preparation of service cost statements for these service sectors.

Module No. 3: Activity Based Costing	**10**

Introduction - Weakness of conventional costing system – concept of ABC – Characteristics of ABC - Kaplan and Cooper's Approach – cost drivers and cost pools – allocation of overheads under ABC — Steps in the implementation of ABC – Benefits from adaptation of ABC system – difficulties faced by the industries in the successful implementation of ABC – Problems.

Module 4: Marginal Costing	**12**

Meaning and Definition of marginal cost, marginal costing, features of marginal costing- terms used in marginal costing – P/V ratio, BEP, Margin of Safety, Angle of Incidence. Break Even Analysis assumptions and uses. Break Even Chart. (Theory).
Problems on CVP analysis.

Module 5: Budgetary Control and Standard Costing	**10**

Budgetary Control Introduction – Meaning & Definition of Budget and Budgetary Control – Objectives of Budgetary Control – essential requirements of budgetary control – advantages and disadvantages of budgetary control – Types of budgets- Functional Budgets - Cash budget, sales budget, purchase budget and production budget. Fixed and Flexible budgets - Problems on Flexible budget and Cash budget only.

Standard Costing Introduction – Uses and limitations, variance analysis- Material variances, Labour variances and Overhead variances- problems on Material and Labour variances only.

Skill Development Activities:

1. Naming the appropriate method of costing with justification for each of the following Industries-Paper Mill, Printing, Sugar Mill, Rice Mill, Hospital, Oil Refinery, Pickle Manufacturing, KSRTC and Hotel.
2. List out the modern costing tools in accounting field.
3. Prepare flexible Budget and cash budget with imaginary figures
4. Narrate the steps involved in standard costing. System.
5. Prepare a report, which explains the conditions that are necessary for thesuccessful implementation of a JIT manufacturing system.
6. Explain ABC. Illustrate how ABC can be applied.
7. Any other activities in addition to the above, which are relevant to the course.

Text Books:

1. John K Shank and Vijaya Govindarajan; Strategic Cost Management; FreePress Publication; New York
2. S P Jain and K L Narang, Advanced Cost Accounting, Kalyani Publications,
3. Robert S Kaplan and Anthony A Atkinson, Advanced ManagementAccounting, PHI, New Delhi.
4. Shank and Govindrajan, Strategic Cost Management, Simon and Schuster,36 New York.
5. Lin Thomas, Cases and Readings in Strategic Cost Management, McGrawHill Publications, New York.
6. Mariyappa B Methods and Techniques of Costing. HPH.

Note: Latest edition of Text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: B.Com. 4.3
Name of the Course: Business Regulatory Framework

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	4 Hrs	56 Hrs

Pedagogy: Classroom lectures, Case studies, Group discussion, Seminar & field worketc.,

Course Outcomes: On successful completion of the course, the Students will be able to

a) Recognize the laws relating to Contracts and its application in business activities.
b) Acquire knowledge on bailment and indemnification of goods in a contractualrelationship and role of agents.
c) Comprehend the rules for Sale of Goods and rights and duties of a buyer and aseller.
d) Distinguish the partnership laws, its applicability and relevance.
e) Rephrase the cyber law in the present context.

Syllabus:	**Hours**
Module No. 1: Indian Contract Act, 1872	**12**
Introduction – Definition of Contract, Essentials of Valid Contract, Offer and acceptance, consideration, contractual capacity, free consent. Classification of Contract, Discharge of a contract, Breach of Contract and Remedies to Breach of Contract	
Module No. 2: The Sale of Goods Act, 1930	**10**
Introduction - Definition of Contract of Sale, Essentials of Contract of Sale, Conditions and Warranties, Transfer of ownership in goods including sale by a non- owner and exceptions- Performance of contract of sale - Unpaid seller, rights of an unpaid seller against the goods and against the buyer	
Module No. 3: Competition and Consumer Laws	**12**
The Competition Act 2002 – Objectives of Competition Act, Features of Competition Act, CAT, Offences and Penalties under the Act, Competition Commission of India. **Consumer Protection Act 1986** – Definitions of the terms – Consumer, Consumer Dispute, Defect, Deficiency, Unfair Trade Practices, and Services, Rights of Consumer under the Act, Consumer Redressal Agencies – District Forum, State Commission and National Commission.	
Module No. 4: Economic Laws	**12**
WTO patent rules – Indian Patent Act, 1970 – Meaning and Scope of Intellectual Property Rights (IPR), Procedure to get Patent for Inventions and Non-Inventions. **FEMA 1999** – Objectives of FEMA, Salient Features of FEMA, Definition of Important Terms – Authorized Dealer, Currency - Foreign Currency, Foreign Exchange, Foreign Security.	
Module 5: Environment and Cyber Laws	**10**

Environment Protection Act 1986 – Objectives of the Act, Definitions of Important Terms – Environment, Environment Pollutant, Environment Pollution, Hazardous Substance and Occupier, Types of Pollution, Powers of Central Government to protect Environment in India.
Cyber Law: Definition, Introduction to Indian Cyber Law, Cyber space and Cyber security.

Skill Development Activities:

1. Discuss the case of "Carlill vs Carbolic Smoke Ball Company" case
2. Discuss the case of "Mohori Bibee v/s Dharmodas Ghose".
3. Discuss any one case law relating to minor.
4. State the procedure for getting patent for 'inventions' and / or 'non-inventions'.
5. List at least 5 items which can be categorized as 'hazardous substance' according to Environment Protection Act.
6. List out any top upcoming jobs in cyber security and examine the skills requiredfor the same.
7. Any other activities, which are relevant to the course.

Text Books:

1. M.C. Kuchhal, and Vivek Kuchhal, Business Law, Vikas Publishing House, NewDelhi.
2. Avtar Singh, Business Law, Eastern Book Company, Lucknow.
3. Ravinder Kumar, Legal Aspects of Business, Cengage Learning
4. SN Maheshwari and SK Maheshwari, Business Law, National Publishing House,New Delhi.
5. Aggarwal S K, Business Law, Galgotia Publishers Company, New Delhi
6. Bhushan Kumar Goyal and Jain Kinneri, Business Laws, International Book House
7. Sushma Arora, Business Laws, Taxmann Pulications.
8. Akhileshwar Pathak, Legal Aspects of Business, McGraw Hill Education, 6th Ed.
9. P C Tulsian and Bharat Tulsian, Business Law, McGraw Hill Education
10. Sharma, J.P. and Sunaina Kanojia, Business Laws, Ane Books Pvt. Ltd., New Delhi
11. K. Rama Rao and Ravi S.P., Business Regulatory Framework., HPH
12. N.D. Kapoor, Business Laws, Sultan Chand Publications

Latest edition of text books may be used.

4.4 Constitution of India curriculum will be given by KSHIC

4.7 Curriculum of Artificial Intelligence will be given by KSHEC

References

1. RBI Financial Education Handbook.
2. NSE Knowledge Hub, AI-powered Learning Experience Platform for BFSI.
3. NSE Academy Certification in Financial Markets (NCFM) Modules:
    a. Macroeconomics for Financial Markets.
    b. Financial Markets (Beginners Module)
    c. Mutual Funds (Beginners Module)
    d. Technical Analysis.

Text Books

Sl No	Author	Tittle of the Book	Publisher
01	Prasanna Chandra	Financial Management	McGraw Hill Education
02	Aswath Damodaran	Corporate Finance	John Wiley & Sons Inc
03	Fischer & Jordan	Security Analysis & Portfolio Management	Prentice Hall

Websites:

1. www.sebi.gov.in
2. www.nseindia.com
3. www.amfiindia.com.

Question Paper Pattern

1. **Internal Assessment** – 20 marks (based on practical lab-based assignments)
2. **End Semester Exam** – 30 marks

Section A: 4 out of 5 questions (2 marks each) 4 X 2 = 8 Marks
Section B: 2 out of 3 questions (6 marks each) 2 X 6 = 12 Marks
Section C: Compulsory:
Analysis of One Case (or) Two Case-lets 1 X 10 = 10 Marks.

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1.1 Guidelines For Continuous Internal Evaluation and Semester End Examination

The Members of the Committee deliberated on the framework of Continuous Internal Evaluation (CIE) as well Semester End Examination (SEE) for the courses. The CIE and SEE will carry 40% and 60% weightage each, to enable the course to beevaluated for a total of 100 marks, irrespective of its credits. The evaluation system of the course is comprehensive & continuous during the entire period of the Semester. For a course, the CIE and SEE evaluation will be on the following parameters:

Sl. No.	Parameters for the Evaluation	Marks
	Continuous Internal Evaluation (CIE)	
1	Assignment (s)	08 Marks
	Seminar (s)	08 Marks
	Attendance *	08 Marks
2	Internal Assessment Tests (IAT)	16 Marks
	Total of CIE (A)	40 Marks
3	Semester End Examination (SEE) (B)	60 Marks
	Total of CIE and SEE (A + B)	100 Marks

*** Attendance**

Up to 74.99	0 Mark
75-77.99	02 Marks
78-80.99	03 Marks
81-83.99	04 Marks
84-86.99	05 Marks
87-89.99	06 Marks
90-92.99	07 Marks
93 and above	08 Marks

a. **Continuous & Comprehensive Evaluation (CCE):** The CCE will carry a maximum of 1 6 % weightage (16 marks) of total marks of a course. Beforethe start of the academic session in each semester, a faculty member should choose for his/her course, minimum of four of the following assessment methods with four marks each:

i. Individual Assignments
ii. Seminars/Class Room Presentations/ Quizzes
iii. Group Discussions /Class Discussion/ Group Assignments
iv. Case studies/Case lets
v. Participatory & Industry-Integrated Learning/ Filed visits
vi. Practical activities / Problem Solving Exercises
vii. Participation in Seminars/ Academic Events/Symposia, etc.
viii. Mini Projects/Capstone Projects
ix. Any other academic activity

b. **Internal Assessment Tests (IAT):** The IAT will carry a maximum of 40% weightage (40 marks) of total marks of a course, under this component, two tests will have to be conducted in a semester for 34 marks each and thesame is to be scaled down to 16 marks each. Standard format is given below.

c. In case of 50 percent of CIE weightage courses, faculty members can choose assessments methods accordingly for the required marks as mentioned above.

Suggestive Template for IAT

Internal Assessment Test: Bachelor of Commerce (B.Com.)

Course Code: **Name of the Course:**
Duration: 1½ Hours **Total Marks: 34**

SECTION-A

I. Answer any two of the following questions. Questions are asked on Remembering.

(2 x 2 = 04)

1.
2.
3.

SECTION- B

II. Answer any two of the following questions. Questions are asked on Understanding.

(05 x 2= 10)

4.
5.
6.

SECTION- C

I. Answer any two of the following questions. Questions are asked on Understanding and Applying.

(10 x 2= 20)

7.
8.
9.

Note: Internal Test question papers format is prepared based on Revised Bloom's Taxonomy**.**
(https://www.apu.edu/live_data/files/333/blooms_taxonomy_action_verbs.pdf)

Semester End Examination (SEE):

The Semester End Examination for all the courses for which students who get registered during the semester shall be conducted. SEE of the course shall beconducted after fulfilling the minimum attendance requirement as per the Universities/Institutes' norms. The Members of the Committee also deliberated on the framework of Semester End Examination (SEE) and suggested to give autonomy to Board of Studies (BOS) of Universities/Institutes to have their own Framework. The BOS of the Universities/Institutes shall prepare the SEE Framework by considering the 'Revised Bloom's Taxonomy', since the courses are designed basedon Outcome Based Education.

Instructions for Question Paper Setters:

1 The question paper setter shall use Revised Bloom's Taxonomy Action Verbs, since the students answers are assessed based on course outcomes. (As a part of OBE).

2 The question paper setter shall set the two/three questions from each module as per the pattern.

3 Each module can have sub-questions.
Example:

1. A…….. (02 Marks)
   B…… (05 Marks)
   C…… (10 Marks)

4 While setting sub-questions, question paper setters can assign the weightage of the marks as per the need/importance of the questions, but it should not exceed the maximum marks of the module.

RANI CHANNAMMA UNIVERSITY, BELAGAVI

Accredited by NAAC with B+ Grade - 2021

Syllabus

of

BACHELOR OF COMMERCE

5th and 6th Semesters

w.e.f.

Academic Year 2023-24

A. Scheme of Teaching & Evaluation for B.Com.

Semester V								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week (L+T +P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
36	COM5.1	Financial Management	DSC-13	3+0+2	60	40	100	4
37	COM5.2	Income Tax Law and Practice-I	DSC-14	3+0+2	60	40	100	4
38	COM5.3	Principles and Practice of Auditing	DSC-15	4+0+0	60	40	100	4
39	COM5.4	Elective1	DSE-1	3+0+0	60	40	100	3
40	COM5.5	Elective2	DSE-2	3+0+0	60	40	100	3
41	COM5.6	A. GST-Law & Practice B. Digital Marketing	Vocational-1 Anyone to be chosen	2+0+2	50	50	100	3
42	COM5.7	Cyber Security	SEC- SB	2+0+2	50	50	100	3
Sub–Total(D)					**400**	**300**	**700**	**24**

Elective Groups and Courses:

Discipline Specific Electives–V Semester (5.4/5.5)										
Sl. No	**Course Code**	**Accounting**	**Course Code**	**Finance**	**Course Code**	**Marketing**	**Course Code**	**Human Resources**	**Course Code**	Information Systems
1	A1	Indian Accounting Standards-I	F1	Financial Institutions And Markets	M1	Retail Management	H1	Human Resources Development	I1	Basics of Business Analytics

Note:

1. Under DSE, Dual Specialization to be offered, students should choose two elective groups from the above elective groups. Same elective groups should be continued in the 6th Semester also.

Semester VI								
Sl. No.	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours Per Week (L+T +P)**	**SEE**	**CIE**	**Total Marks**	**Credits**
43	COM6.1	Advanced Financial Management	DSC-16	3+0+2	60	40	100	4
44	COM6.2	Income Tax Law and Practice-II	DSC-17	3+0+2	60	40	100	4
45	COM6.3	Management Accounting	DSC-18	3+0+2	60	40	100	4
46	COM6.4	Elective1	DSE-3	3+0+0	60	40	100	3
47	COM6.5	Elective2	DSE4-	3+0+0	60	40	100	3
48	COM 6.6	A. Assessment of persons other than-Individuals & Filing of ITRs B. E- Commerce	Vocational-2 Anyone to be chosen	2+0+2	50	50	100	3
49	COM6.7	Internship / Project	I-1	4 to 5weeks		100	100	3
Sub–Total(D)					**350**	**350**	**700**	**24**

Elective Groups and Courses:

Discipline Specific Electives–VI Semester(6.4/6.5)										
Sl. No.	**Course Code**	**Accounting**	**Course Code**	**Finance**	**Course Code**	**Marketing**	**Course Code**	**Human Resources**	**Course Code**	**Information Systems**
1	A2	IndianAccountingStandards-2	F2	Investment Management	M2	Customer Relationship Management	H2	Cultural Diversity at Wok Place	I2	HR Analytics

Note:

1. Under DSE, Dual Specialization to be offered, students should choose two elective groups from the above elective groups. Same elective groups should be continued in the 6th Semester also.
2. The students shall undergo 4 to 5 weeks of internship programme in any business organization immediately after completion of 5th Semester Examination but before the commencement of 6th Semester classes. Or students shall undertake a project work on any organization and submit a project report. There will be project viva for 20 marks & 80 marks for project report. The evaluation of the project reports may be done at the respective colleges.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code:COM.5.1
Name of the Course: Financial Management

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4Credits	**4Hrs**	**60Hrs**

Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group discussion, Seminar & fieldwork etc.,

Course Outcomes: On successful completion of the course, the students 'will be able to

a) Understand the role of financial managers effectively in an organization.
b) Apply the compounding & discounting techniques for time value of money.
c) Take investment decision with appropriate capital budgeting techniques for investment proposals.
d) Understand the factors influencing the capital structure of an organization.
e) Estimate the working capital requirement for the smooth running of the business

Syllabus:	**Hours**
ModuleNo.1:Introduction to Financial Management	**12**

Introduction–Meaning of Finance, Finance Function, Objectives of Finance function, Organization of Finance function -Meaning and definition of Financial Management; Goals of Financial Management, Scope of Financial Management, Functions of Financial Management, Role of Finance Manager in India. Financial planning-- Meaning –Need – Importance -Steps in financial Planning–Principles of a sound financial plan and Factors affecting financial plan.

ModuleNo.2:Time Value of Money	**10**

Introduction – Meaning of time value of money-time preference of money- Techniques of time value of money: Compounding Technique-Future value of Single flow, Multiple flow and Annuity-Discounting Technique-Present value of Single flow, Multiple flow–and Annuity.
Doubling Period-Rule 69and 72.

ModuleNo.3:Financing Decision	**14**

Introduction-Meaning and Definition of Capital Structure, Factors determining the Capital Structure, Concept of Optimum Capital Structure, EBIT-EPS Analysis- Problems. Leverages: Meaning and Definition, Types of Leverages-Operating Leverage, Financial Leverage and Combined Leverages. Problems.

ModuleNo.4:Investment Decision	**12**

Introduction-Meaning and Definition of Capital Budgeting, Features, Significance – Steps in Capital Budgeting Process. Techniques of Capital budgeting: Traditional Methods – Pay Back Period, and Accounting Rate of Return – DCF Methods: Net Present Value Internal Rate of Return and Profitability Index-Problems

Module5: Working Capital Management	**12**
Introduction-Meaning and Definition, types of working capital, Operating cycle, Determinants of working capital needs – Estimation of working capital requirements. Dangers of excess and inadequate working capital, Merits of adequate working capital, Sources of working capital. Cash Management, Receivable Management, and Inventory Management (Concepts only).	

Skill Development Activities:

1. Visit the Finance Department of any organization and collect and record the Functions and Responsibilities of Finance Manager.
2. As a finance manager of a company advice the management in designing an appropriate Capital Structure.
3. Evaluate a capital investment proposal by using NPV method with imaginary figures.
4. Illustrate with imaginary figures the compounding and discounting techniques of time value of money.
5. Estimate working capital requirement so fan organization with imaginary figures.
6. Any other activities, which are relevant to the course.

Books for reference:

1. IM Pandey, Financial management, Vikas publications, New Delhi.
2. Abrish Guptha, Financial management, Pearson.
3. Khan &Jain, Basic Financial Management, TMH, New Delhi.
4. SNMaheshwari, Principles of Financial Management, Sulthan Chand &Sons, New Delhi.
5. Chandra& Chandra D Bose, Fundamentals of Financial Management, PHI, New Delhi.
6. B. Mariyappa, Financial Management, Himalaya Publishing House, New Delhi.
7. Ravi M Kishore, Financial Management, Taxman Publications
8. Prasanna Chandra, Financial Management, Theory and Practice, Tata McGraw Hill.

Note: Latest edition of books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)

Course Code:COM5.2

Name of the Course: Income Tax Law and Practice–I

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4Credits	**4Hrs**	**60Hrs**

Pedagogy: Classrooms lecture, Case studies, Tutorial classes, Group discussion, Seminar & fieldwork etc.,

CourseOutcomes:Onsuccessfulcompletionofthecourse,thestudentswillbeableto

a) Comprehend the procedure for computation of Total Income and tax liability of an individual.
b) Understand the provisions for determining the residential status of an Individual.
c) Comprehend the meaning of Salary, Perquisites, and Profit in lieu of salary, allowances and various retirement benefits.
d) Compute the income house property for different categories of house property.
e) Comprehend TDS & advances tax Ruling and identify the various deductions under section 80.

Syllabus:	**Hours**
ModuleNo.1:Basic Concepts of Income Tax	**12**
Introduction –Meaning of tax-, types of taxes, cannons of taxation. Brief history of Indian Income Tax, legal framework of taxation, Important definitions, assessment, assessment year, previous year including exceptions, assesses, person, income, casual income, Gross total income, Total income, Agricultural income, scheme of taxation,– Exempted incomes of individuals under section10 of the IncomeTaxAct,1961.	
ModuleNo.2:Residential Status and Incidence of Tax	**10**
Introduction – Residential status of an individual. Determination of residential status of anindividual.IncidenceoftaxorScopeofTotalincome.ProblemsoncomputationofGrosstotalIncomeofa nindividual.	
ModuleNo.3: Income from Salary	**18**
Introduction - Meaning of Salary -Basis of charge Definitions–Salary, Perquisites and profits in lieu of salary - Provident Fund –Transferred balance. - Retirement Benefits – Gratuity, pension and Leave salary. Deductions and Problems on Computation of Taxable Salary.	
ModuleNo.4:Income from House Property	**10**
Introduction - Basis for charge - Deemed owners -House property incomes exempt from tax, composite rent and unrealized rent. Annual Value–Determination of Annual Value -Deductions from Annual Value- Problems on Computation of Income from House Property.	
Module No.5: Tax Deduction at Sources & Advance Tax Ruling	**10**

Introduction-Meaning of TDS- Provisions regarding TDS- TDS to be made from Salaries - Filing of Quarterly statement – Theory and Problems; Advance Tax: Meaning of advance tax - Computation of advance tax - Installment of advance tax and due dates. **Deductions** under Sections 80C, 80CCC, 80CCD, 80CCG, 80D, 80DD, 80DDB, 80E, 80G, 80GG, 80TTA and 80Uas Applicable to Individuals.

Skill Developments Activities:

1. Prepare a slab rates chart for different Individual assesses.
2. Visit any Chartered Accountants office, collect and record the procedure involved in filing the Income tax returns of an Individual.
3. List out any10 Incomes exempt from tax under section 10 of an Individual.
4. Prepare the chart of perquisites received by an employee in an organization.
5. IdentifyandcollectvariousenclosurespertainingtoIncometaxreturnsofanindivial
6. Any other activities, which are relevant to the course.

Books for Reference:

1. MehrotraH. C and T.S.Goyal, Direct taxes, Sahithya Bhavan Publication, Agra.
2. Vinod K.Singhania,DirectTaxes, Taxman Publication Private Ltd,NewDelhi.
3. Gaurand Narang,Law and practice of Income Tax, Kalyani Publications, Ludhiana.
4. Bhagawathi Prasad, Direct Taxes.
5. B.Mariyappa,IncometaxLawandPractice-I,HimalayaPublishingHouse.NewDelhi.s
6. Dr.Saha,Law and Practice of Income Tax, Himalaya Publishing House.

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: COM5.3
Name of the Course: Principles and Practice of Auditing

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4Hrs**	**60Hrs**

Pedagogy: Classrooms lecture, Case studies, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the students 'will be able to

a) Understand the conceptual framework of auditing.
b) Examine the risk assessment and internal control in auditing
c) Comprehend the relevance of IT in audit and audit sampling or testing.
d) Examine the company audit and the procedure involved in the audit of different entities.
e) Gain knowledge on different aspect of audit reporting and conceptual framework applicable on professional accountants.

Syllabus:	**Hours**
ModuleNo.1:Introduction to Auditing	**10**
Introduction – Meaning and Definition – Objectives– Types of Audit– Merits and Demerits of Auditing – Relationship of audit with other disciplines. Preparation before commencement of new audit - Working Papers -Audit Note Book, Audit Programme Qualities of an Auditor – Auditplanning–Auditstrategy—AuditEngagement-AuditDocumentation-AuditEvidence– Written Representation.	
Module No.2:Risk Assessment and Internal Control	**12**
Introduction–Audit risk–Assessment of risk–Internal Control-Meaning and objectives–Internal check- Meaning, objectives and fundamental Principles. Internal check with regards to wage payment, cash sales, and cash purchases.	
Module No.3: Verification and Valuation of Assets and Liabilities	**12**
Meaning and objectives of verification and valuation – Position of an auditor as regards the valuation of assets- Verification and Valuation of different items of Assets- Land and Building,PlantandMachinery,Goodwill,Investments,StockinTrade.Liabilities-Billspayable,Sundry Creditors and Contingent liabilities.	
ModuleNo.4: Company Audit and Audit of other Entities	**13**
Company Auditor: appointment, Qualification, powers, duties and liabilities, professional ethics of an auditor. Other Entities: Audit Procedure of NGOs - Charitable institutions – Educational institutions–Government–Local Bodies–Cooperative societies–hotels–hospitals–clubs & Banks.	
Module5: Audit Report & Professional Ethics	**13**
Introduction–Meaning–Elements of audit report–Types of audit report-Independent Auditor's report and the illustration; Professional Ethics: Code of Ethics-Professional Accountants in Public practices and business–Fundamental Principles of Professional Ethics.	

Skill Development Activities:

1. Design and develop an audit plan program for a joint stock company
2. List the various documents necessary to be verified in the audit process
3. Draft an audit report (qualified or clean)with imaginary data.
4. Visit an audit firm; write about the procedure followed by them in auditing the books of accounts of a firm.
5. Record the verification procedure with respect to any one fixed asset.
6. Draft an audit program.
7. Any other activities, which are relevant to the course.

Books for Reference:

1. ICAI Study Materials on Auditing and Assurance
2. B.N.Tandon, Principles of Auditing, S.Chandand Company, NewDelhi.
3. T.R.Sharma, Auditing Principles and Problems, Sahitya Bhawan, Agra.
4. J.M.Manjunatha and others, Auditing and Assurance, HPH.
5. GuptaKarnal,Contemporary Auditing, TataMc.Graw-Hill,NewDelhi.
6. R.G.Saxena,PrinciplesofAuditing.

Note: Latest edition of books may be used.

Name of the Programme: Bachelor of Commerce (B.Com) Course Code: COM A1 Name of the Course: Indian Accounting Standards -1		
Course Credits	**No. of Hours per Week**	**Total No of Teaching Hours**
3 Credits	**3 Hrs**	**45 Hrs**

Pedagogy: Lectures in the Classroom, Reading and analysis of annual reports of listed companies; writing assignment, seminar presentation, group discussion.

Course Outcomes: On successful completion of the course, the students' will be able to

a) Understand the need and benefits of accounting standards.
b) Prepare the financial statements as Indian Accounting standards.
c) Comprehend the requirements of Indian Accounting Standards for recognition, measurement and disclosures of certain items appear in financial statements
d) UnderstandtheAccountingStandardsforItemsthatdonotAppearinFinancial Statements

Syllabus	**Hours**
Module No. –1 Introduction to Indian Accounting Standards.	**10**
Introduction- Meaning and Definition of Accounting Standards – Objectives of Accounting Standards – Benefits and Limitations of Accounting Standards – Process of Formulation of Accounting Standards in India – List of Indian Accounting Standards (Ind AS) – Need for Convergence Towards Global Standards– International Financial Reporting Standards-FeaturesandMeritsandDemeritsofIFRS– BenefitsofConvergencewithIFRS– Applicability of Ind AS in India.	
ModuleNo.2 Preparation of Financial Statements (IndAS1)	**12**
Frame work for preparation of Financial Statements, presentation of Financial Statement as per Ind AS 1. Statement of Profit and Loss, Balance Sheet, Statement of changes in Equity, statement of Cash flow and Notes to accounts. Problems on preparation of Statement of Profit and Loss and Balance Sheet as per Schedule III of Companies Act, 2013.	
Module No. – 3 Provision under Accounting Standard for Items Appear in Financial Statements.	**10**
Property, Plant and Equipment (Ind AS-16) - Intangible assets (Ind AS-38) - Impairment of assets (Ind AS-36) – Inventories (Ind AS 2) - Borrowing costs (Ind AS- 23) – Investment Property(IndAS-40)– objectives, Scope, definitions, Recognition Measurement and disclosures of the above- mentioned Standards. Simple problems on the above standards.	
Module No.- 4 Provisions under Accounting Standards for Items that do not Appear in Financial Statements.	**08**
Segment Reporting (Ind AS 108), Related Party Discloser (Ind AS 24), Events Occurring after Balance Sheet Date (IndAS10), Interim Financial Reporting (Ind AS34).	
ModuleNo.-5 Liability Based Indian Accounting Standards.	**05**
Provisions, Contingent liabilities and contingent assets(IndAS37) –Scope, provision, liability, obligating event, legal obligation, constructive obligation, contingent liability, contingent asset, relationship between provisions and	

Contingent liability, recognition of provisions, Contingent asset and contingent liability, Measurement and Disclosure of Information in the Financial Statements.

Skill Development Activities:

1. Explain the structure and functions of Indian Accounting Standards Board
2. Set out the procedure for issue of an Accounting Standard by the Accounting Standards Board.
3. List out the financial statements in accordance with Ind AS 1 and show the formats of the same with imaginary figures.
4. Explain the main provisions of Ind AS2, Ind AS 16and IndAS18
5. State and explain the provisions pertaining to Segment Reporting and Related Party Disclosure under Ind AS.

Books for Reference:

1. Study material of the Institute of Chartered Accountants of India
2. Anil Kumar, Rajesh Kumar and Mariyappa, Indian Accounting Standards, HPH
3. Miriyala, Ravikanth, Indian Accounting Standards Made Easy, Commercial LawPublishers
4. Dr.A.L.Saini IFRS for India, Snow white publications.
5. CA ShibaramaTripathy Roadmap to IFRS and Indian Accounting Standards
6. Ghosh T P, IFRS for Finance Executives Taxman Allied Services PrivateLimited.

Note: Latest edition of books may be used

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code:COMF1
Name of the Course: Financial Institutions and Markets

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3Credits	**3Hrs**	**45Hrs**

Pedagogy: Classrooms lecture, Case studies, Group discussion, Seminar & fieldwork etc.,

Course Outcomes: On successful completion of the course, the students 'will be able to

a) Understand the structure of Indian financial system and its constituents.
b) Outline the role of capital and money market in economic development.
c) Comprehendprimaryandsecondarymarketanditsrelevanceincapitalformation.
d) Appraise the role played by banking and development financial institutions in economic development so far.
e) Understand the different types of NBFCs and their contribution.

Syllabus:	**Hours**
ModuleNo.1:Financial System in India	**08**
Introduction–Meaning of Financial System–Financial concepts-Constituents of Financial System–Structure of Financial System–Role of Financial system-Functions of Financial System –Development of Financial System in India. Financial Sector Reforms- Financial System and Economic Development– Weakness of Indian financial system.	
ModuleNo.2: Capital Market & Money Market	**08**
Capital Market: Meaning –Structure, Importance – Functions – Players in the Capital Market – Instruments of Capital Market–Components of Capital Market–Recent trends in Capital Market. **Money Market:** Meaning- Structure, functions Importance–Functions– Instrument of Money Market–Recent trends in Money Market.	
ModuleNo.3: Primary Market & Secondary Market	**10**
Primary Market: Meaning, features, players of primary market, Instruments in primary market, Merits and Demerits of primary markets–-Methods of floating new issues: Public issue–Offer for sale – Right Issue–Private placement– Problems of Indian Primary Markets; **Secondary Market**: Meaning, structure, functions, players in Stock Market, Merits and Demerits of stock markets. Methods in Stock Markets - Recognition of stock exchanges – Function of stock exchanges of BSE- NSE – OTCI – Listing of securities – Trading and Settlement Procedure in the Stock Market- Problems of Indian Stock Market; SEBI: Objectives-functions–Role and Reforms in Secondary Market.	
Module No. 4 Banking & Development Financial Institutions	**12**
Banking: Introduction – Meaning – Role and functions – Types of Banks; Development Financial Institutions: History – Management - Role & Functions of EXIM Bank –NABARD SIDBI – MUDRA –NHB–LIC&GIC -UTI–SFCs.	
ModuleNo.5:Non-Banking Financial Companies(NBFCs) & For ex Market	**07**

Introduction – Meaning- Role – Importance – Types of NBFCs – Insurance Companies – Loan Companies- Investment Companies—Leasing & Hire Purchase-Housing Finance,—Chit Funds-Mutual funds -Venture Capital Funds - Factors & Forfeiting - Credit Rating - Depository and Custodial Services; Forexmarket- Concept- Meaning- Importance- Merits of forexmarket-Fluctuations in foreign exchange rates- Causes and Effects.

Skill Developments Activities:

1. List out any five recent Financial Sectors Reforms and analyze them.
2. Collect Share Application Forms of any five different companies who have offered IPO in the last or present financial year.
3. Collect data on last financial year price rigging and insider trading cases reported as per SEBI.
4. Visit website of Development Financial Institutions (DFIs) and prepare report on the history /milestone and functions of the DFIs
5. Identify the Different types of Venture capital firms operating in Karnataka and their investment.
6. Any other activities ,which are relevant to the course.

Books for Reference:

1. Livingston, Miles; Financial Intermediaries; Blackwell
2. Sudhindra Bhat, Financial Institutes and Markets, Excel Books.
3. NitiBhasin; Banking and FinancialMarketsinIndia1947 To2007;New Century.
4. KhanM.Y, Indian Financial Systems, TataMcGrawHill, New Delhi.
5. E Gordon, K. Natarajan (2010). Financial Markets and Services. Himalaya Publishing House, New Delhi
6. ShashikGuptha,NishaAggarwal&NeetiGuptha(2008),FinancialMarkets.KalyaniPublishers,NewDelhi
7. Vasanth Desai(2009).Financial Markets and Services. Himalaya Publishing House.

Note: Latest edition n of books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: COMH1
Name of the Course: Human Resources Development

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	**3 Hrs**	**45 Hrs**

Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group discussion, Seminar &field work etc.,

Course Outcomes: On successful completion of the course, the students 'will be able to

a) Understand the need of HRD.
b) Comprehend the framework of HRD.
c) Know the models for evaluating the HRD programs.
d) Comprehend the need for employee counseling.
e) Apprehend the HR performance.

Syllabus:	**Hours**
ModuleNo.1: Conceptual Analysis of HRD	**08**
Introduction– Meaning and Definition of HRD, Need for HRD-Multiple Goals of HRD, HRD Department and its Task, HRD for Organizational Effectiveness, HRD in the Indian Context, HRD Mechanisms, Employee Empowerment, HRD as a Motivational Factor, Concerns of Trade Unions.	
Module No.2: Frame Work of Human Resource Development	**10**
Frame work of Human Resource Development –HRD Processes-Assessing HRD Needs - HRD Model - Designing Effective HRD Program - HRD Interventions- Creating HRD Programs – Implementing HRD programs- Training Methods-Self Paced/Computer Based/Company Sponsored Training - On-the-Job and Off-the-Job - Brain Storming - Case Studies - Role Plays -Simulations–T-Groups-Transactional Analysis.	
Module No. 3:Evaluating HRD Programs	**08**
Introduction- - Models and Frame Work of Evaluation - Assessing the Impact of HRD Programs – Human Resource Development Applications-Fundamental Concepts of Socialization- Realistic Job Review-Career Management and Development.	
Module No.4: Management Development	**09**
Introduction-Employee counseling and wellness services– Counseling as an HRD Activity-Counseling Programs-Issues in Employee Counseling- Employee Wellness And Health Promotion Programs- Organizational Strategies Based on Human Resources.	
ModuleNo.5:HRPerformance	**10**
Introduction -Work Force Reduction, Realignment and Retention - HR Performance and Bench Marking - Impact of Globalization on HRD- Diversity of Work Force - HRD programs for diverse employees-Expatriate & Repatriate support and development.	

Skill Development Activities:

1. Discuss with HR manager on HRD and report on the same.
2. Visit any Organisation in your locality, collect information and report on employee welfare facilities provided by the company.
3. Meet HR trainer, discuss their role and responsibilities.
4. Visit any Organisation, discuss with employees about effectiveness of training.
5. Any other activities, which are relevant to the course.

BooksforReference:

1. Werner & Desimone, Human Resource Development, Cengage Learning.
2. William E. Blank, Handbook for Developing Competency Based Training Programmes, Prentice-Hall, NewJerse
3. Uday Kumar Haldar, Human Resource Development, Oxford University Press.
4. Srinivas Kandula, Strategic Human Resource Development, PHIL earning.
5. Nadler, Leonard: Corporate Human Resource Development, Van Nostrand Reinhold, ASTD, NewYork.
6. Rao,T.VandPareek,Udai:DesigningandManagingHumanResourceSystems,OxfordIBH Pub.Pvt.Ltd.,NewDelhi,2005.
7. Rao,T.V:ReadingsinHRD,OxfordIBH Pub.Pvt.Ltd.,New Delhi,2004.
8. Viramani, B.R and Seth, Parmila: Evaluating Management Development, Vision Books,NewDelhi.
9. Rao, T.V. (et.al): HRD in the New Economic Environment, Tata McGraw-Hill Pub.Pvt,Ltd.,New Delhi,2003.
10. Rao,T.V:HRDAudit,SagePublications,NewDelhi.
11. ILO, Teaching and Training Methods for Management Development Hand Book,McGraw-Hill,NewYork.
12. Rao,T.V:HumanResourceDevelopment,SagePublications,NewDelhi.
13. Kapur, Sashi: Human Resource Development and Training in Practice, Beacon Books,NewDelhi.

Note: Latest Edition of books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code: COMI1
Name of the Course: Basics of Business Analytics

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	**3 Hrs**	**45Hrs**

Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the students 'will be able to

a) Understand analytical applications in practice.
b) Validate sources of data, use statistical resources and apply tools and techniques learnt to solve real time problems.
c) Formulate and manipulate business models, using quantitative methods including spreadsheets and graphical methods, in order to find solutions to real time problems.
d) Beware about the emerging trends in the world of analytics.

Syllabus:	**Hours**
ModuleNo.1:Introduction to Business Analytics	**07**
Data, Types of Data-Forms of Data-Evolution of Big Data-Business Analytics-Need for Analytics- Types of Analytics-Importance of Business Analytics in Decision Making-Analytics Process Model-SMART model-Spreadsheet analysis-Internet of Things.	
ModuleNo.2: Technology of Big Data	**06**
Overview of DBMS, Data Warehousing: Concepts, Need Objectives–Relevance of Data Warehousing in Business Analytics-Data Mining-Application of Data Mining-Data Mining Technique-Data Classification-Hadoop Distributed File System-Features of HDFS-Map Reduce-Features of Map Reduce.	
ModuleNo.3:**Data Scientists and Data Visualization**	**10**
Data Scientists-New Era of Data Scientists -Data Scientist model- Sources of Data scientists-Horizontal Versus Vertical Data Scientists- Retention of Data Scientists- Data Visualization-Types of Data Visualization -Issues in Data Visualization-Tools in data visualization- Data Collection, Sampling and Pre-processing- Types of Data Sources- Sampling-Types of Data Elements-Visual Data Exploration and Exploratory Statistical Analysis-Missing Values-Missing Values-Standardizing Data-Categorization-Weights of Evidence Coding-Variable Selection-Segmentation	
ModuleNo.4:Practices of Analytics	**12**

Predictive Analytics- Target Definition-Linear Regression -Logistic Regression -Decision Trees –Neural Networks-Support Vector Machines-Ensemble Methods-Multiclass Classification Techniques -Evaluating Predictive Models-Descriptive Analytics- Association Rules –Sequence Rules –Segmentation-Survival Analysis- Survival Analysis Measurements-Kaplan Meier Analysis-Parametric Survival Analysis-Proportional Hazards Regression-Extensions of Survival Analysis Models-Evaluating Survival Analysis Models-Social Network Analytics-Social Network Definitions-Social Network Metrics-Social Network Learning-RelationalNeighborClassifier-ProbabilisticRelationalNeighborClassifier-Relational Logistic Regression-Collective Inferencing – Egonets- Mobile Analytics- Practices of analytics in -Google-General Electric-Microsoft-Kaggle-Facebook-Amazon.

ModuleNo.5: Big Data and Emerging Trends	**10**
Data for Big Data-Enterprise orientation for Big data–leadership–Targets-Analysts-Other Factors to Consider in Big Data Success-Emerging Technologies in Health Information Systems: Transforming Health in Information Era-Omics Revolution and Personalized Medicine-Genomic Data Integration into Medical Records-Socio-demographic Data for Health Records-Family Health History-Genomics Driven Wellness Tracking and Management System (GO-WELL)-Emerging trends of analytics in Education, Government, Finance & Supply Chain Management.	
Skill Development Activities: **Course teacher can identify and give the skill development activities.**	
Books for Reference: 1. Big Data Black Book, DTE editorial Services, Dream tech Press, 2015. 2. Big Data at Work, Thomas H. Davenport, Harvard Business Review Press, Boston, Massachusetts,2014. 3. Analytics in a Big Data World, John Wiley & Sons, Inc., Hoboken, NewJersey,2014. 4. Big Data and Internet of Things: A Roadmap for smart Environments, Nik Bessis Ciprian Dobre Editors,Springer International Publishing Switzerland2014 **Note: Latest edition of books may be used.**	

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code:COMM1
Name of the Course: Retail Management

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs	45 Hrs

Pedagogy: Classrooms lecture, Case studies, Group discussion, Seminar & field work etc.,

Course Outcomes :On successful completion of the course, the students 'will be able to

a) Understand the contemporary of retail management, issues, strategies and trends in Retailing.
b) Utilize the theories and strategies of retail planning.
c) Perceive the role and responsibilities of store manager and examine the visual merchandising and its techniques in the present context.
d) Prioritize the factors to be considered while fixing the price in retailing.
e) Comprehend the emerging trends in Retail Industry.

Syllabus:	Hours
ModuleNo.1:Introduction to Retailing	**08**
Introduction – Meaning and Definition – Characteristics of Retailing -Functions of Retailing- Types of Retailing-Forms of Retailing based on ownership. Retail Theories-Wheel of Retailing-Retail Lifecycle-Retail Business in India. Influencing factor- Present Indian retail scenario. International Perspective in Retail Business.	
Module No.2: Consumer Behaviour in Retail Business	**10**
Buying Decision Process and its Implication on Retailing– Influence of Group and Individual Factors, Customer Shopping Behaviour, Customer Service and Customer Satisfaction. Retail Planning Process: Factors to Consider in Preparing a Business Plan–Implementation–Risk Analysis.	
Module No.3:Retail Operations	**10**
Factors Influencing location of Store - Market Area Analysis – Trade Area Analysis – Rating Plan method- Site Evaluation. Retail Operations: Stores Layout and Visual Merchandising, Stores designing, Space Planning, Inventory Management, Merchandise Management, Category Management.	
ModuleNo.4:Retail Marketing Mix	**07**
Product: Decisions Related to Selection of Goods (Merchandise Management Revisited) Decisions Related to Delivery of Service. **Pricing**:InfluencingFactors–ApproachestoPricing–PriceSensitivity-ValuePricing– Markdown Pricing. **Place:** Supply Channel-SCM Principles – Retail Logistics – Computerized Replenishment System-Corporate Replenishment Policies. **Promotion**: Setting objectives–Communication Effects-Promotional Mix. Human Resource Management in Retailing–Manpower Planning– Recruitment and Training–Compensation–Performance Appraisal Methods.	
ModuleNo.5: Impact of Information Technology in Retailing	**10**

Non-Store Retailing (E-Retailing) - The Impact of Information Technology in Retailing – Integrated Systems and Networking–EDI–Bar Coding–Electronic Article Surveillance Electronic Shelf Labels – Customer Database Management System. Legal Aspects in Retailing, Social Issues in Retailing, Ethical Issues in Retailing. Artificial Intelligence in Retailing.

Skill Developments Activities:

1) Identify any 10 Retail Business Stores at you Conveniences
2) Visit any Established Retail Mall and Draw a Chart of Product Segmentation
3) Make a list of fact or influence on choice of retail stores
4) Conduct a survey after sale service of any retail outlet
5) Contact any retailer ,collect the information on factors influencing on retail pricing.
6) Any other activities, which are relevant to the course.

Books for Reference:

1. Barry Bermans and Joel Evans: "Retail Management – A Strategic Approach", PHI New Delhi,
2. A.J.Lamba,"The ArtofRetailing", Tata McGrawHill, NewDelhi,
3. Swapna Pradhan: Retailing Management,, TMH
4. James R.Ogden & DeniseT: Integrated Retail Management
5. Levy & Weitz: Retail Management- TMH
6. Rosemary Varley, Mohammed Rafiq-:Retail Management
7. ChetanBajaj:Retail Management-Oxford Publication.
8. Uniyal&Sinha: Retail Management-Oxford Publications.
9. SujaNair: Retail Management
10. R.S Tiwari:Retail Management, HPH, New Delhi

Note: Latest edition of books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code:COM5.6
Name of the Course: GST-Law & Practice

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3Credits	**(2+0+2)4 Hrs**	**45Hrs**

Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group discussion, Seminar & fieldwork etc.,

Course Outcomes: On successful completion of the course, the students' will be able to

a) Comprehend the concepts of Goods and Services tax.
b) Understand the fundamentals of GST.
c) Analyse the GST Procedures in the Business.
d) Know the GST Assessment and its computation.

Syllabus:	**Hours**
ModuleNo.1:Introduction to GST	**08**
Introduction-Meaning and Definition of GST, Objectives, Features, Advantage sand Disadvantages of GST, Taxes subsumed under GST, Structure of GST (Dual Model) - CGST, SGST and IGST. GST Council, Composition, Powers and Functions. CGST Act,2017- Feature and Important definitions.	
ModuleNo.2: GST Registration and Taxable Event	**10**
Registration under GST provision and process. Amendment and cancellation of registration, Taxable event-Supply of goods and services-Meaning, Scope and types-composite supply, Mixed supply. Determination of time and place of supply of goods andservices.Levyandcollectionoftax.Listofexemptedgoodsandservices-Problems.	
ModuleNo.3:Input Tax Credit	**08**
Input Tax Credit - Eligible and Ineligible Input Tax Credit; Apportionments of Credit and Blocked Credits; Tax Credit in respect of Capital Goods; Recovery of Excess Tax Credit; Availability of Tax Credit in special circumstances; Transfer of Input tax, Reverse Charge Mechanism, tax in voice, Problems on input tax credit.	
Module No.4: GST Assessment	10
Tax Invoice, Credit and Debit Notes, Returns, Audit in GST Assessment: Self- Assessment, Summary and Scrutiny. Special Provisions. Taxability of E-Commerce, Anti-Profiteering, Avoidance of dual control- issues in filing of returns, monthly collection targets, GST Council meetings.	
Module No.5: Valuations of Goods and Services Under GST	**09**
Introduction to Valuation under GST, Meaning and Types of Consideration: a) Consideration received through money b) Consideration not received in money c) Consideration received fully in money, valuation rules for supply of goods and services: 1) General Valuation Rules; 2) Special Valuation Rules; Other cases for valuation of supply, imported services, imported goods, valuation for discount. Transaction Value: Meaning and conditions for transaction value, inclusive transaction value, and exclusive discount excluded from transaction value. Problems on GST.	

Skill Development Activities:

1. Prepare a tax invoice under the GST Act.
2. Write the procedure for registration under GST.
3. Prepare a chart showing rates of GST.
4. Compute taxable value and tax liability with imaginary figures under CGST, SGST and IGST.
5. List out the exempted Goods and Services under GST.
6. Analyse the custom duties rates of last five years.
7. Any other activities, which are relevant to the course.

Books for Reference:

1. V.S.Datey, Goods and Services Taxes, Taxman.
2. Sathpal Puliana, M.A.Maniyar,Glimpse of Goods and Service Tax,KarnatakaLawJournalPublications,Bangalore.
3. Pullani and Maniyar, Goods and Service Tax, Published by Law Journal,Bangalore.
4. H.C.MehrotraandV.P.Agarwal,GoodsandServicesTax.
5. H.C.Mehotraand S.P.Goyal,GoodsandServicesTax.
6. Ghousia Khatoon, C.M. Naveen Kumar and S.N. Venkatesh, Goods and Services Tax,HimalayaPublishing House,Bangalore.
7. R.G. Saha, S.K. Podder and Shruthi Prabhakar, Fundamentals of GST and Customs Act, Himalaya Publishing House.
8. G. B. Baligar, Goods and ServicesTax, Ashok Prakashan,Hubli.

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)

Course Code: COM5. 6(B)

Name of the Course: Digital Marketing

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	(2+0+2)4Hrs	45Hrs

Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group discussion, Seminar& fieldwork etc.,

Course Outcomes: On successful completion of the course, the students 'will be able to

e) Gain knowledge on Digital Marketing, Email marketing and Content marketing.
f) Understand Search Engine Optimization tools and techniques
g) Gain skills on creation of Google Ad Words & Google Ad Sense
h) Gain knowledge on Social Media Marketing and Web Analytics.
i) Gain knowledge on YouTube Advertising & Conversions.

Syllabus: **Hours**

ModuleNo.1: Introduction to Digital Marketing **08**

Introduction - Meaning of Digital Marketing, Need for Digital Marketing, Digital Marketing Platforms. Digital Marketing students, professional and Business Email Marketing: Importance of e-mail marketing, e-mail Marketing platforms, Creating e-mailers, Creating a Contact Management and Segmentation Strategy, Understanding e-mail Deliverability & Tracking e-mails, How to create Effective & Unique e-mail Content, Outlining the Design of Your Marketing e-mails, Open rates and CTR of e-mail, Drive leads from e-mail, What are opt-in lists , Develop Relationships with Lead Nurturing & Automation Content Marketing: Understanding Content Marketing, Generating Content Ideas, Planning a Long-Term Content Strategy, Building a Content Creation Framework, Becoming an Effective Writer , Extending the Value of Your Content through Repurposing, How to Effectively Promote Content, Measuring and Analyzing Your Content.

ModuleNo.2: Search Engine Optimization (SEO) **10**

Search Engine Optimization (SEO):Meaning of SEO, Importance and Its Growth in recent years, Ecosystem of a search Engine, kinds of traffic, Keyword Research & Analysis (Free and Paid tool &Extension), Recent Google Updates & How Google Algorithms works On Page Optimization (OPO),Off-Page Optimization Misc SEO Tools: Google Webmaster Tools, Site Map Creators, Browser-based analysis tools, Page Rank tools, Pinging & indexing tools, Dead links identification tools, Open site explorer, Domain information/who is tools, Quick sprout, Google My Business.

ModuleNo.3: Google Ad Words & Google Ad Sense **08**

Google Ad Words: Google Ad-Words Fundamentals, Google Ad Words Account Structure, Key terminologies in Google Ad Words, How to Create an Ad Words account, Different Types of Ad Words and its Campaign & Ads creation process, Ad approval process, Keyword Match types , Keyword targeting & selection (Keyword planner), Display Planner, Different types of extensions , Creatinglocationextensions,Creatingcallextensions,CreateReviewextensions,Biddingtechniques–Manual /Auto,DemographicTargeting/Bidding,CPC-based,CPAbased&CPM-basedaccounts.,Google Analytics Individual Qualification (GAIQ), Google Ad Sense: Understanding ad networks and Ad Sense's limitations, Learning which situations are best for using Ad Sense, Setting up an Ad Sense account, Creating new ad units, Displaying ads on a website, Configuring channels and ad styles, Allowing and blocking ads , Reviewing the Ad Sense dashboard, Running Ad Sense reports and custom reports, Exporting data, Reviewing payee and account settings.

Module No. 4: Social Media Marketing (SMM) & Web Analytics **10**

Social Media Marketing(SMM) Facebook Marketing,Twitter Marketing,am LinkedinMarketiGoogle plus Marketing, YouTube Marketing, Pinterest Marketing, Snap chadiance Marketing, Instagr Marketing, Social Media Automation Tools, Social Media Ad Specs Thng,ials ROI in Socits MeMarketing,ToolsandDashboards,ReputationmanagementWebAnalytics:Theneed&importaof Web Analytics, Introducing Google Analytics, The Google Analytics layout , Basic Repo Basic Campaign and Conversion Tracking, Google Tag Manager, Social Media Analytic SocCRM&Analytics,OtherWebanalyticstools,Makingbetterdecisions,Commonmistakesanaly make.	
Module No. 5: You tube Advertising (Video Ads) & Conversions **09**	
Youtube Advertising(VideoAds):Youtubeadvertising?,WhyshouldoneadvertiseonyoutubCreating youtube campaigns, Choose the audience for video ads, In stream ads, In video ads,In-sads,In-displayads,MeasuringyourYouTubeadperformance,DriveleadsandsalesfromYouTubConversions UnderstandingConversionTracking,TypesofConversions,SettingupConveTracking,Optimizing Conversions, Track offline conversions, Analyzing conversion data, Conve optimizer.	e? earche adsrsion rsion
Skill Development Activities: 1. Explain the key digital marketing activities needed for competitive success. 2. Examine the concept of Digital Media and benefits to be derived. 3. Recognise the core features of CR Mandretention programmes 4. Identify them etricsused in digital marketing. 5. Organise how we can limit the marketing materials wage through e-mail.	
Books for Reference: 1. UnderstandingDIGITALMarketing,Marketingstrategiesforengagingthedigitalgeneration DamianRyan & Calvin Jones 2. The Art of Digital Marketing: The Definitive Guide to Creating Strategic ByIan Dodson **3.**. Internet Marketing: a practical approach By Alan Charlesworth **4.**SocialMedia Marketing:A StrategicApproach By Melissa Barker, Donald I. Barker, Nicholas F Bormann, KristaENeher **Note: Latest edition of text books may be used.**	·

Name of the Program: Bachelor of Commerce
(B.Com.)
Course Code:COM6.1
Name of the Course: Advanced Financial Management

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4 Hrs**	**60 Hrs**

Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group discussion, Seminar & fieldwork etc.,

Course Outcomes: On successful completion of the course, the students' will be able to

a) Understand and determine the overall cost of capital.
b) Comprehend the different advanced capital budgeting techniques.
c) Understand the importance of dividend decisions.
d) Evaluate mergers and acquisition.
e) Enable the ethical and governance issues in financial management.

Syllabus:	Hours
ModuleNo.1:Cost of Capital and Capital Structure Theories	**14**
Cost of Capital: Meaning and Definition–Significance of Cost of Capital–Types of Capital–Computation of Cost of Capital–Specific Cost– Cost of Debt–Cost of Preference Share Capital –Cost of Equity Share Capital–Weighted Average Cost of Capital–Problems. **Theories of capital structures**: The Net Income Approach, The Net Operating Income Approach, Traditional Approach and MM Hypothesis–Problems.	
ModuleNo.2:Risk Analysis in Capital Budgeting	**14**
Risk Analysis–Types of Risks–Risk and Uncertainty–Techniques of Measuring Risks –Risk adjusted Discount Rate Approach–Certainty Equivalent Approach –Sensitivity Analysis-Probability Approach-Standard Deviation and Co-efficient of Variation– Decision Tree Analysis –Problems..	
ModuleNo.3:Dividend Decision and Theories	**14**
Introduction - Dividend Decisions: Meaning - Types of Dividends – Types of Dividends Polices –Significance of Stable Dividend Policy - Determinants of Dividend Policy; Dividend Theories: Theories of Relevance – Walter's Model and Gordon's Model and Theory of Irrelevance – The Miller-Modigliani(MM)Hypothesis -Problems.	
Module No.4: Mergers and Acquisitions	**10**
Meaning-Reasons–Types of Combinations-Types of Merger –Motives and Benefits of Merger – Financial Evaluation of a Merger - Merger Negotiations – Leverage buyout, Management Buyout Meaning and Significance of P/E Ratio. Problems on Exchange Ratios based on Assets Approach, Earnings Approach and Market Value Approach and Impact of Merger on EPS Market Price and Market capitalization.	
ModuleNo.5:EthicalandGovernanceIssues	**08**

Introduction to Ethical and Governance Issues: Fundamental Principles, Ethical Issues in Financial Management, Agency Relationship, Transaction Cost Theory, Governance Structures and Policies, Social and Environmental Issues, Purpose and Content of an Integrated Report.

Skill Development Activities:

1. Visit an organization in your town and collect data about the financial objectives.
2. Compute the specific cost and weighted average cost of capital of an Organization, you have visited.
3. Case analysis of some live merger reported in business magazines.
4. Meet the financial manager of any company; discuss ethical issues in financial management.
5. Collect the data relating to dividend policies practices by any two companies.
6. Any other activities, which are relevant to the course.

Books for Reference:

1. IM Pandey, Financial management, Vikas publications, New Delhi.
2. Abrish Guptha, Financial management, Pearson.
3. Khan & Jain, Basic Financial Management, TMH, New Delhi.
4. SNMaheshwari,Principles of Financial Management, Sulthan Chand& Sons, New Delhi.
5. Chandra & Chandra D Bose, Fundamentals of Financial Management, PHI, New Delhi.
6. B.Mariyappa, Advanced Financial Management, Himalaya Publishing House, New Delhi.
7. RaviMKishore, Financial Management, Taxman Publications
8. PrasannaChandra,Financial Management, Theory and Practice, Tata McGraw Hill.

Note: Latest edition of text books may be used

Name of the Program: Bachelor of Commerce
(B.Com.)
Course Code:COM6.2
Name of the Course: Income Tax Law &Practice– II

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4Credits	**4Hrs**	**60Hrs**

Pedagogy: Classrooms lecture, Case studies, Tutorial classes, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the students' will be able to

a) Understand the procedure or computation of income from business and other Profession.
b) The provisions for determining the capital gains.
c) Compute the income from other sources.
d) Demonstrate the computation of total income of an Individual.
e) Comprehend the assessment procedure and to know the power of income tax authorities.

Syllabus:	**Hours**
ModuleNo.1:Profits and Gains of Business and Profession	**20**
Introduction-Meaning and definition of Business, Profession and Vocation.-Expenses Expressly allowed-Expenses Expressly Disallowed-Allowable losses-Expressly disallowed expenses and losses, Expenses allowed on payment basis. Problems on computation of income from business of a sole trading concern- Problems on computation of income from profession: Medical Practitioner-Advocate and Chartered Accountants.	
ModuleNo.2:Capital Gains	**10**
Introduction-Basis for charge-Capital Assets-Types of capital assets–Transfer-Computation of capital gains– Short term capital gain and Long term capital gain-Exemptions under section 54, 54B, 54EC, 54D, 54F, and 54G. Problems covering the above sections.	
ModuleNo.3: Income from other Sources	**10**
Introduction-Income taxable under Head income other sources–Securities-Types of Securities-Rules for Grossing up. Ex-interest and cum-interest securities. Bond Washing Transactions- Computation of Income from other Sources.	
ModuleNo.4: Set Off and Carry Forward of Losses & Assessment of individuals.	**10**
Introduction – Provisions of Set off and Carry Forward of Losses (Theory only) -Computation of Total Income and tax liability of an Individual.	
ModuleNo.5:Assessment Procedure and Income Tax Authorities:	**10**
Introduction - Due date of filing returns, Filing of returns by different assesses, E- filing of returns, Types of Assessment, Permanent Account Number-Meaning, Procedure for obtaining PAN and transactions were quoting of PAN is compulsor**y.** Income Tax Authorities their Powers and duties.	

Skill Development activities:

1. Visit any chartered accountant office and identify the procedure involved in the computation of income from profession.
2. List out the different types of capital assets and identify the procedure involved in the computation of tax for the same.
3. List out the steps involved in the computation of income tax from other sources and critically examine the same.
4. Identify the Due date for filing the returns and rate of taxes applicable for individuals.
5. Draw an organization chart of Income Tax department in your locality.
6. Any other activities, which are relevant to the course.

Books for Reference:

1. Mehrotra H.C and T.S. Goyal, Direct taxes, Sahithya Bhavan Publication, Agra.
2. Vinod K.Singhania, Direct Taxes, Taxman Publication Private Ltd, New Delhi
3. Gaur and Narang,Law and practice of Income Tax, Kalyani Publicat Ludhiana.
4. Bhagawathi Prasad,DirectTaxes.
5. B.Mariyappa,IncometaxLawandPractice-II,HimalayaPublishingHouse.Delhi.s
6. Dr.Saha,Law and Practice of Income Tax, Himalaya Publishing House.

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code:COM6.3
Name of the Course: Management Accounting

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4Hrs**	**60Hrs**

Pedagogy: Classrooms lecture ,Case studies, Tutorial Classes, Group discussion, Seminar & fieldwork etc.,

Course Outcomes: On successful completion of the course, the students' will be able to

a) Demonstrate the significance of management accounting in decision making.
b) Analyse and interpret the corporate financial statements by using various techniques.
c) Compare the financial performance of corporate through ratio analysis.
d) Understand the latest provisions in preparing cash flow statement.
e) Comprehend the significance of management audit and examine the corporate reports of Management Review and Governance.

Syllabus:	**Hours**
ModuleNo.1:Introduction to Management Accounting	**12**
Introduction–Concept–Meaning and Definition-Significance-Scope-Objectives and Functions-Difference between Financial Accounting, Cost Accounting and Management Accounting- Advantages and Limitations of Management Accounting- Management Accountant: Role and Functions of Management Accountant.	
ModuleNo.2:Financial Statements Analysis and Interpretation	**14**
Introduction–Meaning and Nature of financial statements-Limitations of financial statements -Essentials of a good financial statement. Analysis and interpretations-Meaning and definition of Financial of analysis, types of analysis, Techniques of Financial Analysis-Comparative Statements, Common Size Statements and Trend Analysis-Problems.	
ModuleNo.3: Ratio Analysis	**14**
Introduction - Meaning and Definition of Ratio Analysis, Uses & Limitations of Ratio Analysis – Classification of ratios: Liquidity ratios: Current ratio, Liquid ratio and Absolute liquid ratio; Solvency ratios: Debt equity ratio, Proprietary ratio and Capital gearing ratio - Earning per share and return on capital employed; Profit ability ratios :Gross profit ratio- Net profit ratio–Operating ratio, and Operating profit ratio. Turnover ratios: Inventory turnover ratio – Debtors turnover ratio Debt collection period - Creditors turnover ratio -Debt payment period, Assets turnover ratio, Earnings per share and Price Earnings Ratio. Problems on Ratio Analysis-Preparation of financial statements with the help of Accounting Ratios.	
ModuleNo.4:Cashflow Analysis	**12**
Introduction- Meaning and Definition, Merits and Demerits, differences between Fund flow and cash flow statements. Provisions of Ind AS 7. Procedure of cash flow statement Concept of cash and cash equivalent. Classification of Cash flows, Preparation of cash flow statement as per Ind AS 7(Indirect method only).Problems.	
ModuleNo.5: Management Audit & Reports on Management	**08**

Introduction–Meaning–Nature–Scope-Importance–Need-Objectives of management audit-Differences between Financial Audit and Management Audit - Steps involved in Management Audit. Reports on Management Review and Governance: Introduction-Report of Board of Directors- Management discussion analysis- Annual Report on CSR–

Business Responsibility Report – Corporate Governance Report –Secretarial Audit Report.

Skill Development Activities:

1. Meet Management accountant and discuss his role in decision making in an Enterprise.
2. Collect financial statements of anyone corporate entity for two year and prepare a comparative statement and analyse the financial position.
3. Collect financial statements of any one corporate entity, analyse the same by using ratio analysis.
4. Prepare a cash flow statement
5. Meet the management accountant, discuss the steps involved in management audit.
6. Collect reports of any two corporate, analyse the management review and governance of the same.
7. Any other activities, which are relevant to the course.

Books for Reference:

1. Study Materials of ICAI on Management Accounting(Updated)
2. Study Materials of ICMAI on Management Accounting
3. CharlesT.Horngren,GaryL. Sundem, Dave Burgstahler,JeffO. Schatzberg, Introduction to Management Accounting, Pearson Education.
4. B Mariyappa Management Accounting Himalaya Publishing House New Delhi
5. Khan,M.Y.and Jain,P.K.ManagementAccounting. McGrawHillEducation.
6. Arora,M.N. Management Accounting,Vikas Publishing House,NewDelhi
7. Maheshwari, S.N. and S.N. Mittal, Management Accounting. Shree Mahavir Book Depot,NewDelhi.

Note: Latest edition of text books may be used.

Name of the Programme: Bachelor of Commerce (B.Com) Course Code: COM A2 Name of the Course: Indian Accounting Standards -2		
Course Credits	**No. of Hours per Week**	**Total No of Teaching Hours**
3 Credits	**3 Hrs**	**45 Hrs**

Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the students' will be able to

a) Understand the preparation of consolidated financial statements as per Ind AS
b) Learn the disclosures in the financial statements
c) Understand the latest provisions of measurement-based accounting policies.
d) Comprehend the Accounting and Reporting of Financial Instruments
e) Analyse the Revenue based accounting standard.

Syllabus	**Hours**
Module-1 Consolidated Financial Statement IndAS110)	**9**
Meaning and Definition- Holding Company and Subsidiary Company, Steps in PreparationofconsolidatedFinancialStatements,Capitalprofit,Revenueprofit,Non-controlling Interest and Good will or Capital Reserve and Unreleased profit, and mutual indebtedness. Problems on Preparation of Consolidated Balance Sheet.	
ModuleNo.2 Disclosures in the Financial Statements	**9**
Employee benefits (Ind AS19) Earnings per Share (Ind AS33)Lease(IndAS116),Interim Financial Reporting (IndAS 34) Share-based Payment(IndAS102).	
ModuleNo.3 Measurement Based on Accounting Policies	**9**
Accounting Policies, Changes in Accounting Estimates and Errors (Ind AS 8), First time adoption of Ind AS (Ind As 101), Accounting for Government Grants and Disclosure of Government Assistance((IndAS20))and Share Based Payment (IndAS102)	
ModuleNo.4 Accounting and Reporting of Financial Instruments	**9**
Presentation of Financial Instruments (Ind AS 32) – Meaning, Financial Assets, Financial Liabilities - Presentation Recognition and Measurement of financial Instruments (Ind AS 39) – Initial and Subsequent Recognition and measurement of Financial Assets and Financial Liabilities, De recognition of Financial Assets and Financial Liabilities- Disclosures of Financial Instruments (IndAS107)	
ModuleNo.5 Revenue based accounting standard.	**9**
Revenue from Contracts with Customers(IndAS115),Fair Value Measurement (IndAS113) Contract, Practical Provisions and problems on the above standards.	

Skill Development Activities:

1. Prepare consolidated Balance sheet with imaginary figures.
2. Make a list of Indian Accounting Standards
3. Make disclosures of any five Indian Accounting Standards.
4. StudythecompliancewiththerequirementsofIndianAccountingstandardsasdisclosed in the Notes to Accounts in Annual Reports.

Books for Reference:

1. Study material of the Institute of Chartered Accountants of India
2. AnilKumar, Rajesh Kumar and Mariyappa, Indian Accounting Standards, HPH
3. Miriyala,Ravikanth,IndianAccountingStandardsMadeEasy,CommercialLawPub lishers
4. Dr.A.L.SainiI FRS for India,, Snow white publications.
5. CAShibarama Tripathy Roadmap to IFRS and Indian AccountingStandards
6. GhoshTP, IFRS for Finance Executives Taxman Allied Services Private Limited.

Note: Latest edition of textbooks may be used

Name of the Program: Bachelor of Commerce
(B.Com.)
Course Code:COMF2
Name of the Course: Investment Management

Course Credits	No. of Hours per Week	Total No .of Teaching Hours
3Credits	3Hrs	45Hrs

Pedagogy: Classrooms lecture, Case studies, Group discussion, Seminar & field work etc.,

Course Outcomes: On successful completion of the course, the students' will be able to

a) Understand the concept to investments, its features and various instruments.
b) Comprehend the functioning of secondary market in India.
c) Underline the concept of risk and return and their relevance in purchasing and selling of securities.
d) Illustratethevaluationofsecuritiesandfindingoutthevaluesforpurchaseandsaleofsecurities.
e) Demonstrate the fundamental analysis to analyse the company for purchase and sale of securities and technical analysis for trading in the share market.

Syllabus:	Hours
ModuleNo.1:ConceptofInvestment	**07**
Introduction-Investment:Attributes,Economicvs.FinancialInvestment,Investmentand Speculation, Features of a good investment, Investment Process. Financial Instruments: Money Market Instruments, Capital Market Instruments. Derivatives.	
ModuleNo.2:FundamentalAnalysis	**12**
Fundamental analysis-EIC Frame Work, Global Economy, Domestic Economy, Business Cycles, Industry Analysis and Company Analysis. Valuation of securities: Valuation of Bonds and debentures and preference shares, equity shares-no growth rate, normal growth rate and supernormal growth rate.	
ModuleNo.3: Risk & Return	**10**
Risk and Return Concepts: Concept of Risk, Types of Risk-Systematic risk, Unsystematic risk, Calculation of Risk and returns. Portfolio Risk and Return: Expected returns of a portfolio, Calculation of Portfolio Risk and Return.	
ModuleNo.4 Technical Analysis	**08**
Technical Analysis – Concept, Theories- Dow Theory, Eliot wave theory. Charts-Types, Trend and Trend Reversal Patterns. Mathematical Indicators – Moving averages, ROC, RSI, and Market Indicators - MarketEfficiencyandBehaviouralFinance:RandomwalkandEfficientMarketHypothesis,FormsofMarket Efficiency, Empirical test for different forms of market efficiency	
ModuleNo.5:Portfolio Management	**8**
Portfolio Management: Meaning, Need, Objectives, process of Portfolio management, Selection of securities and Portfolio analysis. Construction of optimal portfolio using Sharpe's Single Index Model. Portfolio Performance evaluation (Theory only).	

Skill Developments Activities:

1. Collectandcomparethedataonfinancialinstrumentsselectedforinvestmentfromanyfiveinvestors.
2. Open Demat account, learn how to trade in stock market and submit the report on prospectus and challenges of stock trading.
3. Discuss with investors on systematic can dun systematic risk analysis, submit report on the same.
4. Calculate the intrinsic value of any five bonds listed on BSE/NSE, making necessary assumptions.

5. Summarisetheparametersof‘EconomyAnalysis’ofanyfivecountriesandgiveyourinference.
6. Anyotheractivities,which arerelevanttothecourse.

BooksforReference:

1. Bodie ZVI, Kane Alex, Marcus J Alan and Mohanty Pitabas., Investments, Tata McGraw Hill Publishing Company Limited, New Delhi.
2. Sharpe F. William, Alexander J Gordon and Bailey V Jeffery, Investments, Prentice Hall of India Private Limited, New Delhi.
3. Fischer E Donald and Jordan J Ronald., Security Analysis and Portfolio Management, Prentice Hall of India Private Limited, NewDelhi.
4. KevinS., Portfolio Management, PHI, New Delhi.
5. Punithavathy Pandian, Security Analysis and Portfolio Management, Vikas Publishing House Private Limited, New Delhi.
6. Prasanna Chandra, Investment Analysis and Portfolio Management, Tata McGraw Hill Publishing Company Limited, New Delhi.

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)
Course Code:COMH2
Name of the Course: Cultural Diversity at Work Place

CourseCredits	No.of HoursperWeek	TotalNo.ofTeachingHours
3Credits	**3Hrs**	**45Hrs**

Pedagogy: Classroomslecture,Casestudies,Groupdiscussion,Seminar&fieldworketc.,

Course Outcomes: On successful completion of the course, the students' will be able to

a) Understand,interpret questionreflectuponandengagewiththenotionof "diversity".
b) Recalltheculturaldiversityatworkplaceinanorganization.
c) Supportthebusinesscaseforworkforcediversityandinclusion.
d) Identifydiversityandworkrespectingcrossculturalenvironment.
e) Assesscontemporaryorganizationalstrategiesformanagingworkforcediversityandinclusion.

Syllabus:	**Hours**
ModuleNo.1:IntroductiontoDiversity	**10**
Introduction to cultural diversity in organizations, Evolution of Diversity Management, Over View of Diversity, Advantages of Diversity, Identifying characteristics of diversity, Scope-Challengesandissuesindiversitymanagement,Understandingthenatureof Diversity–Cultural Diversity–Global Organizations-Global Diversity.	
ModuleNo.2:Exploring Differences	**08**
Introduction-Exploringourandothers' differences,includingsourcesofouridentity. Differenceandpower:Conceptsof prejudice,discrimination,dehumanization andoppression.	
ModuleNo.3:Visions of Diversity and Cross Cultural Management	**10**
Models and visions of diversity in society and organizations: Justice, fairness, and group and individual differences. Cross-Cultural Management: Meaning and Concepts, Frameworks in Cross Cultural Management: Kluckhohn and Strodtbeck framework, Hofstede's Cultural Dimensions, Trompenaar's Dimensions, Schwartz Value Survey, GLOBE study.	
ModuleNo.4: Skills and Competencies	**08**
Skills and competencies formulating cultural teams and workplaces/Organizational assessment and change for diversity and inclusion, Diversity Strategies. Creating Multicultural Organisations.	
Module5:Recent Trends in Diversity Management	**09**
Emerging workforce trends–Dual-career couples–Cultural issues in international working on work-life balance–Managing multi-cultural teams: Issues and challenges, Global demographic trends: Impact on diversity management, Social psychological perspective on work force diversity, Diversity Management in IT organizations Contemporary Issues in Workplace Diversity.	

Skill DevelopmentActivities:

1. VisitanyMNCs,identifyandreportontheculturaldiversityinanorganization.
2. InteractandListoutthewaysinwhichdehumanizationdoneinpublic/private sectororganization.

3. Interact with HR Manager of any MNCs, explore and report on cross culturalmanagement.
4. Explorethebenefitsofmulti-culturalorganizations.
5. ExamineandreportondiversitymanagementinselectITorganizations.
6. Anyotheractivities,whicharerelevanttothecourse.

Booksfor Reference:

1. Bell,M.P.(2012).Diversityinorganizations(2ndEd.).Mason,OH:Cengage.
2. Harvey, C.P. & Allard, M.J. (2015). Understanding and managing diversity:Readings,cases, andexercises(6th Ed.).UpperSaddleRiver, NJ:Pearson.

Note:Latesteditionoftext booksmaybeused.

Name of the Program: Bachelor of Commerce (B.Com.)
CourseCode: COMI2
Nameof theCourse:HumanResourceAnalytics

CourseCredits	No.of HoursperWeek	TotalNo.ofTeachingHours
3Credits	3Hrs	45Hrs

Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group discussion, Seminar&field worketc.,

a) **CourseOutcomes: On successfulcompletionofthecourse,thestudents'willbeableto**
b) UnderstandtheroleofAnalyticsinHumanResource.
c) Identifyalist ofHR metrics relevanttoanorganization'smission orgoals.
d) Apply best practices for using HR analytics to support making data-drivendecisions.
e) Demonstrate the use of Analytical techniques to analyse and interpret HRdata

Syllabus:	Hours
ModuleNo.1:HRDecision-makingandHRAnalytics	**10**
Introduction–HRdecisionmaking–importanceandsignificanceofHRanalytics–benefitsofHRanalytics–StepstoimplementHR analytics–HR analyticsandchangingroleof HRmanagers –aligninghumanresourcestobusinessthroughHRanalytics–HRanalyticsframeworkand models–LAMPFramework.	
ModuleNo.2: HRBusinessProcessandHRAnalytics	**08**
Statistics and statistical modelling for HR research and HR decision-making – HR research toolsand techniques – data analysis for human resources – parametric and non- parametric tests-HRIS for HR decision-making – HR metrics – recruitment metrics – metrics for training anddevelopmentfunction– HR scorecard–HRdashboard	
ModuleNo.3:ForecastingandMeasuringHRvaluepropositionswithHRanalytics	**07**
Value proposition and HR decisions – Sustainability in HR decisions – HR optimization throughanalytics –Predictive HRanalytics	
ModuleNo.4:HRanalytics andData	**12**
HRdataanddataquality–datacollection–bigdataforhumanresources–transformingHRdatainto HR information – HR reporting – HR report visualization – performing root cause analysis –datafication of human resources, Excel exercises: Preparing to Build Your Balanced Scorecard,Developing Executive and Operational Dashboards, Pivotal Talent PoolswithHighRatesofVoluntaryTurnover:VoluntaryTurnover,Involuntary Turnover,For-CauseDismissals,andLayoffs	
Module5:HRAnalyticsandPredictiveModelling	**08**
DifferentphasesofHRanalyticsandpredictivemodelling–dataandinformationforHRpredictiveanalysis–softwaresolutions–predictiveanalyticstoolsandtechniques–understandingfuturehumanresources.	

SkillDevelopmentActivities:
Courseteachercanidentifyandgivetheskilldevelopmentactivities.

BooksforReference:

1. Dipak Kumar Bhattacharya, HR Analytics: Understanding Theories andApplications,SAGE publications,2017
2. Ron Person, Balanced Scorecards & Operational Dashboards with MicrosoftExcel, Wiley Publications.
3. JacFitz-enz,TheNewHRAnalytics-PredictingtheEconomicValueofYour Company'sHumanCapitalInvestments,AMACOM.
4. Jac Fitz-enz ,John R. Mattox II, Predictive Analytics for Human Resources, Wiley & SASBusinessSeries.

Note:Latest editionoftext booksmaybeused.

Nameof theProgram: BachelorofCommerce(B.Com.)
CourseCode: COM.M2
NameoftheCourse:CustomerRelationshipManagement

CourseCredits	No.of HoursperWeek	TotalNo.ofTeachingHours
3Credits	3Hrs	45Hrs

Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group discussion, Seminar & fieldworketc.,

CourseOutcomes:Onsuccessfulcompletionofthecourse,thes'tudentswillbeableto

a) Tobeawareofthenuancesofcustomerrelationship.
b) Toanalyzethe CRMlinkwiththeotheraspectsofmarketing.
c) Toimpart the basic knowledgeoftheRoleofCRMinincreasingthesalesofthecompany.
d) Tomake thestudents awareofthe differentCRMmodelsinserviceindustry.
e) TomakethestudentsawareandanalyzethedifferentissuesinCRM

Syllabus:	Hours
ModuleNo.1:Evolutionof CustomerRelationship	**10**
Introduction-CRM-Definition,EmergenceofCRMPractice,FactorsresponsibleforCRMgrowth, CRM process, framework of CRM, Benefits of CRM, Types of CRM, Scope of CRM,CustomerProfitability, Features TrendsinCRM ,CRMandCost-Benefit Analysis,CRMandRelationshipMarketing.	
ModuleNo.2:CRMConcepts	**10**
Introduction-CustomerValue,CustomerExpectation,CustomerSatisfaction,CustomerCentricity, Customer Acquisition, Customer Retention, Customer Loyalty, Customer LifetimeValue.CustomerExperienceManagement,CustomerProfitability,EnterpriseMarketingManagement,CustomerSatisfactionMeasurements,Webbased Customer Support.	
ModuleNo.3:PlanningforCRM	**08**
Introduction -Steps in Planning-Building Customer Centricity, Setting CRM Objectives, DefiningDataRequirements, Planning DesiredOutputs, Relevant issues while planning theOutputs,ElementsofCRMplan,CRMStrategy:TheStrategyDevelopmentProcess,CustomerStrategy Grid.	
ModuleNo. 4:CRMandMarketingStrategy	**07**
Introduction-CRMMarketingInitiatives,SalesForceAutomation,CampaignManagement,CallCentres. Practice of CRM: CRM in Consumer Markets, CRM in Services Sector, CRM in MassMarkets,CRMinManufacturingSector.	
Module5:CRMPlanningandImplementation	**10**
Introduction-IssuesandProblemsinimplementingCRM,InformationTechnologytools inCRM,ChallengesofCRMImplementation.CRMImplementationRoadmap,RoadMap(RM)Performance:MeasuringCRMperformance,CRMMetrics.	

SkillDevelopmentActivities:

1. Visitanybank,identifyand notecustomer relationshipmanagement bybanker.
2. Conduct online survey on customer satisfaction of insurance products ofanycompany.
3. Visit any telecommunication retail service outlet, discuss CRM related aspects withCRMmanager.
4. Discuss fromanyfive call centreemployees on howtheir workhelpstomaintain customerrelationship.

6. PrepareреporthowtechnologyimpactsonCRM.
7. Anyotheractivities,which arerelevanttothecourse.

BooksforReference:

1. Francis Buttle, Stan Maklan, Customer Relationship Management: Concepts andTechnologies,3rdedition,RoutledgePublishers,2015
2. Kumar, V., Reinartz, Werner Customer Relationship Management Concept,StrategyandTools, 1stedition,SpringerTexts,2014.
3. Jagdish N.Sheth, AtulParvatiyar&G.Shainesh,"CustomerRelationship Management", EmergingConcepts,Tools andApplication",2010,TMH
4. DilipSoman& Sara N-Marandi," Managing Customer Value" 1st edition, 2014,Cambridge.
5. AlokKumarRai,"CustomerRelationshipManagement:ConceptsandCases", 2008,PHI.
6. Ken Burnett, the Handbook of Key "Customer Relationship Management", 2010,PearsonEducation.
7. MukeshChaturvedi,AbinavChaturvedi,"CustomerRelationshipManagement-An IndianPerspective",2010ExcelBooks,2ndedition

Note:Latest editionoftext booksmaybeused.

Nameof theProgram: BachelorofCommerce(B.Com.)

CourseCode: COM6.6

NameoftheCourse:AssessmentofPersonsotherthanIndividualsandFilingofITRs

CourseCredits	No.of HoursperWeek	TotalNo.ofTeachingHours
3Credits	**(2+0+2)4 Hrs**	**45Hrs**

Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group discussion, Seminar&field worketc.,

CourseOutcomes:Onsuccessfulcompletionofthecourse,thestudents'willbeableto

a) UnderstandthecalculationofDepreciationandallowance
b) Comprehend theassessmentofpartnershipFirmsand determinethe taxliability.
c) Comprehend the assessment of corporate entitiesanddeterminethetaxliability.
d) Equip with understanding of intensive knowledge on analysis of all forms of ITR FormsalongwiththeOverviewITR Forms ande-filing.

Syllabus:	Hours
ModuleNo.1:DepreciationandInvestmentAllowance	**08**
Introduction-MeaningofDepreciation,Importantpointsregardingdepreciation,Conditionsforallowance of Depreciation, Assetseligiblefordepreciation, important termsforcomputationof depreciationallowance.Problems.	
ModuleNo.2:AssessmentofPartnershipfirms	**10**
Definition of Partnership, Firm and Partners – Assessment of Firms (Section 184) – Computationof Firm's Business Income– Treatment of Interest, Commission, Remuneration received bypartners (Sec 40b). Presumptive taxation (44AD) Problems on Computation of total income andtaxliabilityoffirms(Useofavailablesoftwarepackageforcomputationoftaxliability,Related FormsandChallans)	
ModuleNo. 3:Assessment ofCompanies.	**10**
Introduction-Meaning and Definition of Company-Types of Companies under Income tax Act -– Problems on computation of total income of companies- Including Minimum Alternate Tax(115JB)ApplicableDeductionsu/s80IA,80IB,80IC, 80G -Problemson ComputationofTaxLiability(UseofSoftwarePackage-QuickBooks/Electrocom)	
ModuleNo.4:TaxUnderE-Environment	**12**
Filing of Income tax returns (ITR) – Types income tax return forms- benefit of filing ITR-differentsectionsofITRreturns-documentrequiredtofilingITR–form26ASsignificancereturns-AdvanceTax Sections-Tax Deducted at Source (TDS)- online payment of tax- problems on Advance TaxandTDS.]E-filingofreturnonIncomeTaxPortal,VerificationofITR..	
ModuleNo.5:CaselawsandAmendments	**05**
Introduction - Recent Amendments in Filing of Returns as per Finance Bill; Recent Case Laws forguidance.DeputethestudentsatleasttwoweekstoanyAuditFirmtolearnpracticallythefilingof Returnsof variouskindsofassesses.Like individuals,Firms and Companies.	

SkillDevelopmentActivities:

1) Prepareachartshowingratesofdepreciationfordifferentassets.
2) Calculate the Eligible Remuneration to working partners as per Income tax rules withimaginaryfigures.
3) NarratetheprocedureforcalculationofBookProfit.

4) Studentsshouldabletoe-fileandunderstandITRforms.
5) Anyotheractivities,whicharerelevanttothecourse

BooksforReference:

1. Vinod KSinghania–"DirectTaxes -LawandPractice", TaxmannPublications
2. HCMehrotraandGoyal,"DirectTaxes",SahityaBhavanPublications
3. GaurandNarang;DirectTaxes,KalyaniPublishers
4. RajivaS. Mishra–Direct& IndirectTax5.Santhil&Santhil:Businesstaxation.
5. B.MariyappaBusinessTaxHimalayaPublicationHouse.NewDelhi.

Note:Latesteditionoftextbooks mustbeused.

NameoftheProgram: BachelorofCommerce(B.Com.) **CourseCode:**COM 6.6(B) **NameoftheCourse:E-Commerce**		
CourseCredits	**No.ofHours perWeek**	**TotalNo. ofTeaching Hours**
3Credits	**(2+0+2)4Hrs**	**45 Hrs**

Pedagogy: Classroomslecture,Casestudies,TutorialClasses,Groupdiscussion,Seminar & field work etc.,

CourseOutcomes:Onsuccessfulcompletion ofthecourse,thestudents'willbeableto

j) ComprehendtheconceptsofE-commerce
k) Understandthe e-retailingbenefitsandkeysuccessfactors
l) Analysethebenefits of EDI
m) TounderstandCybersecurity
n) Knowthe IssuesinE-commerce.

Syllabus:	**Hours**
ModuleNo.1:E-commerceanditsTechnologicalAspects	**08**
Overview of developments in Information Technology and Defining E-Commerce: The scope ofE-commerce, Electronic Market, Electronic Data Interchange, Internet Commerce, Benefits andlimitationsofE-Commerce,ProduceagenericframeworkforE-Commerce,ArchitecturalframeworkofElectronicCommerce,Web basedE-CommerceArchitecture. .	
ModuleNo.2:ConsumerOrientedECommerce	**10**
E-Retailing, Traditional retailing and e-retailing, Benefits of e-retailing, Key success factors,Models of e-retailing, Features of e-retailing. e-services: Categories of e-services, Web-enabledservices, matchmaking services, Information-selling on the web, e-entertainment, Auctions andotherspecialized services. Business to Business ElectronicCommerce.	
ModuleNo.3:ElectronicDataInterchange:	**10**

Benefits of EDI, EDI technology, EDI standards, EDI communications, EDI Implementation, EDIAgreements, EDI Security. Electronic Payment Systems, Need of Electronic Payment System:Study and examine the use of Electronic Payment system and the protocols used, Electronic FundTransfer andsecure electronic transactionprotocolfor creditcard payment.Digitaleconomy:Identify the methods of payments on the net – Electronic Cash,cheque and credit cards on theInternet.	
ModuleNo.4:Security in ECommerceThreatsin ComputerSystems:	**08**
Virus,CyberCrimeNetworkSecurity:Encryption,ProtectingWebserverwithaFirewall,FirewallandtheSecurity Policy,NetworkFirewallsand ApplicationFirewalls,ProxyServer.	
ModuleNo.5:Issues inE-Commerce	**09**
Understanding Ethical, Social and Political issues in E-Commerce: A model for Organizing theissues, Basic Ethical Concepts, Analyzing Ethical Dilemmas, Candidate Ethical Principles Privacyand Information Rights: Information collected at E-Commerce Websites, The Concept of Privacy,LegalprotectionsIntellectualPropertyRights:TypesofIntellectualPropertyProtection,Governance.	

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS

Of

PHYSICS

as per the Choice Based Credit System (CBCS) designed in accordance with
Learning Outcomes-Based Curriculum Framework (LOCF)
of National Education Policy (NEP) 2020
for

Bachelor of Science (Physics)

w.e.f.

Academic Year 2021-22 and onwards

PREAMBLE

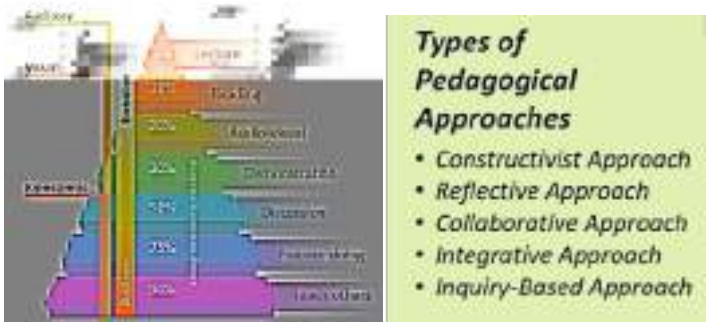
The New Education Policy (2020) is a paradigm shift from the conventional system we practice even today. Giving students the entire freedom to choose what to learn, how to learn, where to learn and when to learn, will enable a personalized education that suits his/her own personality. The drive to change the pedagogy in the curriculum and syllabi will cater to the cognitive, affective and psycho-motor domain of learning, which will fruitfully engage to student and guide him to ascend the Blooms levels of learning hierarchy, elevating them from just remembering to become creative through acquiring skills of application, evaluation and analysis. Such an approach will enable the institution and the individual to design and execute education that is suitable and doable. The wonderful Academic Credit accumulation and the multiple exit/entry options enable multi- disciplinary obtainable from multiple institutions, and even from recognized digital platforms. This will create unprecedented opportunities to the students to self-evaluate and change course at every stage of education as they learn. Introducing the possibility of cutting across disciplines to pursue one's interest and talent can boost curricular and extra-curricular activities by an equal measure. This will definitely enable the blooming of creativity among individuals who will not only be excellent and productive employees, but also assume the mantle of becoming entrepreneurs and job providers. The opportunity for the teacher to adopt novel pedagogies will make classrooms vibrant, meaningful and effective. The student choices will also lead to a healthy cross-disciplinary interaction between institutions and consequently enhancing their capabilities and credibility.

The NEP-2020 is based on Outcome Based Education, where the Graduate Attributes and employment opportunities are first kept in mind to reverse-design the Programs, Courses and Supplementary activities to attain the graduate attributes and learning outcomes.

- Attribute 1: Deep discipline knowledge and intellectual breadth. ...
- Attribute 2: Creative and critical thinking, and problem solving. ...
- Attribute 3: Teamwork and communication skills. ...
- Attribute 4: Professionalism and leadership readiness. ...
- Attribute 5: Intercultural and ethical competency.

The learning outcomes-based curriculum framework for a degree in B.Sc. (Honours) Physics is intended to provide a comprehensive foundation to the subject and to help students develop the ability to successfully continue with further studies and research in the subject while they are equipped with required skills at various stages. The framework is designed to equip students with valuable cognitive abilities and skills so that they are successful in meeting diverse needs of professional careers in a developing and knowledge-based society. The curriculum framework takes into account the need to maintain globally competitive standards of achievement in terms of the knowledge and skills in Physics, as well develop scientific orientation, spirit of enquiry problem solving skills and human and professional will values which foster rational and critical thinking in the students.

It is imperative that in the spirit of the NEP, several academic matters have to change. The most important among these will be the pedagogy that will be adopted in the Teaching-Learning experience to enrol, engage and involve and inspire the students. The learning that happens by employing different types of pedagogies is shown below, and thus need to be adopted in the teaching-learning process for effective cognition by the students using the Auditory, Visual and Kinaesthetic approaches:



Along with conventional teaching methods, Activity based pedagogies are seen to be extremely effective in achieving the Program Educational Objectives. The Committee has attempted to consider both the spirit of the NEP and the existing system and framed the syllabus within the Curriculum options offered by the Higher Education Council. The broad topic level syllabus for all the 5 years (10 semesters) for an integrated B.Sc + M.Sc program has been provided. However, a detailed syllabus has to been provided for the First Two Semester. Attempts have been made to sincerely bring in Activity based pedagogy. The activities have been listed and a few examples have been provided to guide the teacher of how to create their own activities that engage and illuminate students by group and self- involvement methods and a possible evaluation method.

PROGRAM OUTCOMES

Exit with:	Credits Required
Certificate upon the Successful Completion of the First Year (Two Semesters) of the multidisciplinary Four-year Undergraduate Programme/Five-year Integrated Master's Degree Programme	44 - 48

1. **Discipline Knowledge:** Knowledge of science and ability to apply to relevant areas.
2. **Problem solving:** Execute a solution process using first principles of science to solve problems related to respective discipline.
3. **Modern tool usage:** Use a modern scientific, engineering and IT tool or technique for solving problems in the areas of their discipline.
4. **Ethics:** Apply the professional ethics and norms in respective discipline.
5. **Individual and teamwork:** Work effectively as an individual as a team member in a multidisciplinary team.
6. **Communication:** Communicate effectively with the stake holders, and give and receive clear instructions.

Exit with:	Credits Required
A **Diploma** upon the Successful Completion of the Second Year (Four Semesters) of the multidisciplinary Four-year Undergraduate Programme/Five-year Integrated Master's Degree Programme	88 - 96

1. **Discipline Knowledge:** Knowledge of science and ability to apply to relevant areas.
2. **Conduct investigations:** Conduct investigations of technical issues as per their level of understanding and knowledge.
3. **Problem solving:** Formulate and implement a solution process using first principles of science to solve problems related to respective discipline.
4. **Modern tool usage:** Apply a modern scientific, engineering and IT tool or technique for solving problems in the areas of their discipline.
5. **Ethics:** Apply and commit to the professional ethics and norms in respective profession.
6. **Individual and teamwork:** Work effectively as an individual in a multidisciplinary team.
7. **Communication:** Communicate effectively with the stake holders, and give and receive clear instructions.

Exit with:	Credits Required
Basic Bachelor Degree at the Successful Completion of the Third Year (Six Semesters) of the multidisciplinary Four- year Undergraduate Programme/Five-year Integrated Master's Degree Programme	132 - 144

1. **Discipline Knowledge:** Knowledge of basics of science and ability to apply the understanding of fundamentals of major discipline in solving complex problems.
2. **Conduct investigations:** Conduct investigations of issues in their respective disciplines and arrive at valid conclusions.
3. **Problem solving:** Implement a solution process using first principles of science to solve problems related to respective discipline.
4. **Modern tool usage:** Select and use a modern scientific, engineering and IT tool or technique for solving problems in the areas of their discipline.
5. **Environment and Society:** Evaluate the impact of scientific solutions on society and environment and the need for sustainable solutions.
6. **Ethics:** Demonstrate professional ethics, responsibilities and norms in respective profession.
7. **Individual and teamwork:** Work effectively as an individual as a team member and as a leader in a multidisciplinary team.
8. **Communication:** Communicate effectively with the stake holders, write and comprehend project reports and documentation, deliver effective presentations, and give and receive clear instructions.
9. **Project Management and Finance:** Apply the knowledge of scientific and technological principles to one's own work to manage projects in multidisciplinary settings.
10. **Lifelong Learning:** Engage in lifelong learning in the context of changing trends in respective discipline.

Exit with:	Credits Required
Bachelor Degree with Honours in a Discipline at the Successful Completion of the Fourth Years (Eight Semesters) of the multidisciplinary Four-year Undergraduate Programme/Five-year Integrated Master's Degree Programme	176 - 192

1. **Discipline Knowledge:** Knowledge of basics of science and research, and ability to apply the understanding of fundamentals of specialized discipline in solving complex scientific problems.
2. **Conduct investigations:** Conduct investigations of issues using research methods and research-based discipline knowledge including design of experiments, data collection, interpretation and analysis to arrive at valid conclusions.
3. **Problem analysis:** Identify, formulate and analyze complex scientific problems using first principles of respective discipline.
4. **Design and Development of solutions:** Design solutions for complex scientific problems and execute them by considering the environmental, societal and public safety aspects appropriately.
5. **Modern tool usage:** Identify, select and use a modern scientific, engineering and IT tool or technique for modelling, prediction, data analysis and solving problems in the areas of their discipline.
6. **Environment and Society:** Evaluate the impact of scientific solutions on society and environment and design sustainable solutions.
7. **Ethics:** Demonstrate professional ethics, responsibilities and norms in respective profession.
8. **Individual and teamwork:** Work effectively as an individual as a team member and as a leader in a multidisciplinary team.
9. **Communication:** Communicate effectively with the stakeholders with emphasis on communicating with scientific community, comprehend scientific reports, write research papers and projects proposals and reports, deliver effective presentations, and give and receive clear instructions.
10. **Project Management and Finance:** Apply the knowledge of scientific and technological principles to one's own work to manage projects in multidisciplinary settings.
11. **Lifelong Learning:** Identify knowledge gaps and engage in lifelong learning in the context of changing trends in respective discipline.

PROGRAM STRUCTURE

Proposed Curricular and Credits Structure under Choice Based Credit System [CBCS] of Physics Major & One Minor Discipline Scheme for the Four Years Physics B.Sc. Undergraduate Honors Programme with effect from 2021-22.

SEMESTER-I									
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**		**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**P**		
L1	21BSC1L1LK1	Kannada	40	60	100	4	-	3	2
	21BSC1L1LFK1	Functional Kannada							
L2	21BSC1L2LEN2	English	40	60	100	4	-	3	2
	21BSC1L2LHI2	Hindi							
	21BSC1L2LSN2	Sanskrit							
	21BSC1L2LTE2	Telugu							
	21BSC1L2LUR2	Urdu							
DSC1	21BSC1C1PHY1L	Mechanics & Properties of Matter	40	60	100	4	-	4	2
	21BSC1C1PHY1P	Practical I	25	25	50	-	4	2	4
DSC1	Another Department Code	Another Department Course Title	40	60	100	4	-	4	2
			25	25	50	-	4	2	4
SEC1	21BSC1SEC1DF1	Digital Fluency	25	25	50	1	2	2	2
VBC1	21BSC1V1PE1	Yoga/Sports	25	--	25	-	2	1	--
VBC2	21BSC1V2HW1	H&W/NCC/NSS/R&R/CA	25	--	25	-	2	1	--
OEC1	21BSC1O1PHY1	Energy Sources	40	60	100	3	-	3	2
Total Marks					**700**	**Semester Credits**		**25**	

SEMESTER-II										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L3	21BSC2L3LK2	Kannada	40	60	100	4	-	-	3	2
	21BSC2L3FKL2	Functional Kannada								
L4	21BSC2L4EN2	English	40	60	100	4	-	-	3	2
	21BSC2L4HI2	Hindi								
	21BSC2L4SN2	Sanskrit								
	21BSC2L4TE2	Telugu								
	21BSC2L4UR2	Urdu								
DSC2	21BSC2C2PHY1L	Electricity & Magnetism	40	60	100	4	-	-	4	2
	21BSC2C2PHY1P	Practical II	25	25	50	-	-	4	2	4
DSC2	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
AECC1	21BSC2AE1ES1	Environmental Studies	25	25	50	1	-	2	2	2
VBC3	21BSC2V3PE2	Yoga/ Sports	25	--	25	-	-	2	1	--
VBC4	21BSC2V4NC2	H&W/NCC/NSS/ R&R/CA	25	--	25	-	-	2	1	--
OEC2	21BSC2O2PHY2	Optical Instruments	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	

SECOND YEAR; SEMESTER-III										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L5	21BSC3L5LK3	Kannada	40	60	100	4	-	-	3	2
	21BSC3L5LFK3	Functional Kannada								
L6	21BSC3L6EN3	English	40	60	100	4	-	-	3	2
	21BSC3L6HI3	Hindi								
	21BSC3L6SN3	Sanskrit								
	21BSC3L6TE3	Telugu								
	21BSC3L6UR3	Urdu								
DSC3	21BSC3C3PHY1L	Wave motion and Optics	40	60	100	4	-	-	4	2
	21BSC3C3PHY1P	Practical III	25	25	50	-	-	4	2	4
DSC3	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
SEC2	21BSC3SEC2AI1	Artificial Intelligence	25	25	50	1	-	2	2	2
VBC5	21BSC3V5PE3	Yoga/ Sports	25	--	25	-	-	2	1	--
VBC6	21BSC3V6NC3	H&W/NCC/NSS/R & R/CA	25	--	25	-	-	2	1	--
OEC3	21BSC3O3PHY3	Physics for All	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	

SEMESTER-IV										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L7	21BSC4L7LK4	Kannada	40	60	100	4	-	-	3	2
	21BSC4L7LFK4	Functional Kannada								
L8	21BSC4L8EN4	English	40	60	100	4	-	-	3	2
	21BSC4L8HI4	Hindi								
	21BSC4L8SN4	Sanskrit								
	21BSC4L8TE4	Telugu								
	21BSC4L8UR4	Urdu								
DSC4	21BSC4C2PHY4L	Thermal Physics And Electronics	40	60	100	4	-	-	4	2
	21BSC4C2PHY4P	Practical IV	25	25	50	-	-	4	2	4
DSC4	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
AECC2	21BSC4AE1CoI1	Constitution of India	25	25	50	1	-	2	2	2
VBC7	21BSC4V5PE4	Yoga/ Sports	25	--	25	-	-	2	1	--
VBC8	21BSC4V6NC4	H&W,/NCC/NSS/R&R/CA	25	--	25	-	-	2	1	--
OEC4	21BSC4O4PHY4	Astronomy and Space Mission	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Physics as Major Discipline										
DSC5	21BSC5C5PHYMJ1L	Classical Mechanics and Quantum Mechanics-	40	60	100	3	-	-	3	2
	21BSC5C5PHYMJ1P	Practical V	25	25	50	-	-	4	2	4
DSC6	21BSC5C5PHYMJ2L	Elements of Atomic, Molecular Physics	40	60	100	3	-	-	3	2
	21BSC5C5PHYMJ2P	Practical VI	25	25	50	-	-	4	2	4
DSC5	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	4
VC1	21BSC5VC1PHY1	Vocational 1	40	60	100	3	-	-	3	2
VBC9	21BSC5V5PE5	Yoga/ Sports	25	--	25	-	-	2	1	--
VBC10	21BSC5V6NC5	NCC/NSS/ R&R(S&G) / Cultural	25	--	25	-	-	2	1	--
SEC3	21BSC5SEC3	Cyber Security	25	25	50	1	-	2	2	2
Total Marks					**650**	**Semester Credits**			**22**	

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Physics as Major Discipline										
DSC7	21BSC6C6PHYMJ1L	Elements of Nuclear Physics and Nuclear Instruments	40	60	100	3	-	-	3	2
	21BSC6C6PHYMJ1P	Practical VII	25	25	50	-	-	4	2	4
DSC8	21BSC6C6PHYMJ2L	Elements of Condensed Matter Physics	40	60	100	3	-	-	3	2
	21BSC6C6PHYMJ2P	Practical VIII	25	25	50	-	-	4	2	4
DSC6	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	4
VC2	21BSC6VC2PHYVC2	Vocational 2	40	60	100	3	-	-	3	2
VBC1	21BSC6V5PE6	Yoga/ Sports	25	--	25	-	-	2	1	--
VBC2	21BSC6V6NC6	NCC/NSS/R&R(S&G) / Cultural	25	--	25	-	-	2	1	--
SEC4	21BSC6SEC4PC1	Professional Communication	25	25	50	1	-	2	2	2
INT	21BSC6IN1PHYIN	Internship between 5th and 6th semester	25	25	50	3 to 4 weeks			2	Report & Presentation
Total Marks					**700**	**Semester Credits**			**24**	
Total Marks for BSC Program					**4150**	**Total Credits for BSc Program**			**146**	

Physics Subject as a Minor Discipline

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC5 As a Minor Subject	21BSC5C5PHYMN1L	Modern Physics – I	40	60	100	3	-	-	3	2
	21BSC5C5PHYMN1P	Modern Physics - I lab	25	25	50	-	-	4	2	4

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC6 As a Minor Subject	21BSC6C6PHYSMN1L	Modern Physics - II	40	60	100	3	-	-	3	2
	21BSC6C6PHYMN1P	Modern Physics - II lab	25	25	50	-	-	4	2	4

Concept Note, Abbreviation Explanation and Coding:

Concept Note:

1. **CBCS** is a mode of learning in higher education which facilitates a student to have some freedom in selecting his/her own choices, across various disciplines for completing a UG/PG program.
2. A credit is a unit of study of a fixed duration. For the purpose of computation of workload as per UGC norms the following is mechanism be adopted in the University:
   One credit (01) = One Theory Lecture (L) period of one (1) hour.
   One credit (01) = One Tutorial (T) period of one (1) hour.
   One credit (01) = One practical (P) period of two (2) hours.
3. Course: paper/subject associated with AECC, DSC, DSEC, SEC, VBC, OEC, VC, IC and MIL

4. In case of **B.Sc**. **Once a candidate chose two courses/subjects of a particular two department in the beginning, he/she shall continue the same till the end of the degree, then there is no provision to change the course(s) and Department(s).**
5. A candidate shall choose **one of the Department's courses as major and other Department course as minor in fifth and sixth semester and major course will get continued in higher semester.**
6. Wherever there is a practical there will be no tutorial and vice-versa
7. A major subject is the subject that's the main focus of Core degree/concerned.
8. A minor is a secondary choice of subject that complements core major/ concerned.
9. Vocational course is a course that enables individual to acquire skills set that are required for a particular job.
10. Internship is a designated activity that carries some credits involving more than **25 days** of working in an organization (either in same organization or outside) under the guidance of an identified mentor. Internship shall be an integral part of the curriculum.
11. **OEC: Open Elective course is for non- Physics students.**

Abbreviation Explanations:

1. AECC: Ability Enhancement Compulsory Course.
2. DSC: Discipline Specific Core Course.
3. DSEC: Discipline Specific Elective Course.
4. SEC: Skill Enhancement Course.
5. VBC: Value Based Course.
6. OEC: Open/Generic Elective Course
7. VC: Vocational Course.
8. IC: Internship Course
9. L1: Language One
10. L2: MIL
11. L= Lecture; T= Tutorial; P=Practical.
12. MIL= Modern Indian Language; English or Hindi or Telugu or Sanskrit or Urdu

Program Coding:

1. Code 21: Year of Implementation
2. Code BSC: BSC Program under the faculty of Applied Science of the University
3. Code 1: First Semester of the Program, (2 to 6 represent higher semesters)
4. Code AE: AECC, (C for DSC, S for SEC, V for VBC and O for OEC)
5. Code 1: First "AECC" Course in semester, similarly in remaining semester for such other courses
6. Code LK: Language Kannada, similarly Language English, Language Hindi, Language Telugu, Language Sanskrit, &Language Urdu
7. Code 1: Course in that semester.
8. PHY: Physics

Course Content Semester – I
Mechanics and Properties of Matter

Course Title: Mechanics and Properties of Matter	Course Credits:4
Total Contact Hours: 52	Duration of ESA: 3 hours
Formative Assessment Marks: 30	Summative Assessment Marks: 70

Programme Outcomes (POs)

PO-1: Discipline Knowledge: Knowledge of science and ability to apply to relevant areas.

PO-2: Problem solving: Execute a solution process using first principles of science to solve problems related to respective discipline.

PO-3: Modern tool usage: Use a modern scientific, engineering and IT tool or technique for solving problems in the areas of their discipline.

PO-4: Ethics: Apply the professional ethics and norms in respective discipline.

PO-5: Individual and teamwork: Work effectively as an individual as a team member in a multidisciplinary team.

PO-6: Communication: Communicate effectively with the stake holders, and give and receive clear instructions.

Course Articulation Matrix:
Mapping of Course Outcomes (COs) with Program Outcomes (POs)

Course Outcomes (COs) ***(UGC guidelines)***	**1**	**2**	**3**	**4**	**5**	**6**
CO-1: Will learn fixing units, tabulation of observations, analysis of data (graphical/analytical)	**X**	**x**				X
CO-2: Will learn about accuracy of measurement and sources of errors, importance of significant figures.	**X**	**x**				
CO-3: Will know how g can be determined experimentally and derive satisfaction.	**X**					
CO-4: Will see the difference between simple and torsional pendulum and their use in the determination of various physical parameters.	**X**			**x**	**x**	**X**
CO-5: Will come to know how various elastic moduli can be determined.	**X**				x	**X**
CO-6: Will measure surface tension and viscosity and appreciate the methods adopted.	**X**	**x**				
CO-7: Will get hands on experience of different equipment.	**X**	**x**	**x**		**x**	**X**

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course are Marked 'X' in the intersection cell if a course outcome addresses a particular program outcome.

COURSE-WISE SYLLABUS

Semester I

Mechanics and Properties of Matter

Year	I	**Course Code: 21BSC1C1PHY1L**	**Credits**	**04**
Sem.	1	**Course Title: Mechanics and Properties of Matter**	**Hours**	52

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA: 2 hrs.

Unit No.	**Course Content**	**Hours**
Unit I	**Conservation Laws:** Law of conservation of linear momentum. Centre of mass and expression for position vector, velocity, acceleration and force of centre of mass. Distinction between laboratory frame of reference and centre of mass frame of reference. Concept of elastic collision and inelastic collisions. Derivation of final velocities in case of elastic collision in (i) laboratory frame of reference (ii) centre of mass frame of reference. Derivation of final velocities in case of inelastic collision in (i) laboratory frame of reference (ii) centre of mass frame of reference. Conservation of linear momentum in case of variable mash. Principle of rocket and derivation for equation of motion for single stage rocket. Necessity of multi stage rocket. Basics of angular momentum and torque, relation between angular momentum and torque. Law of conservation of angular momentum with examples. Concept of work and power. Law of conservation of energy with examples. Work energy theorem. Simple harmonic oscillations of light spiral spring. Problems	13
Activity/ Self Study	1 Students can try and find every day examples of conservation of energy. For example: i) What happens in solar panels ii) pushing an object on the table it moves iii) moving car hits a parked car causes parked car to move. In these cases, energy is conserved. How? Understand and verify if possible.	
Unit II	**Gravitation:** Newton's law of Gravitation (statement). Expressions for escape velocity and orbital velocity. Kepler's laws of planetary motion. Derivation for Kepler's 2nd and 3rd law. Concept of Satellite, derivation for binding energy of satellite. Artificial Satellite: Geostationary satellite and polar orbit satellite with different types of orbits (qualitative). Concept of weightlessness. Basic ideas of G.P.S. and NAVIC. Problems **Rigid Body Dynamics**: Moment of Inertia. Radius of Gyration. Statements of theorem of parallel axis and theorem of perpendicular axis. Derivation of expressions for moment of inertia for (i) rectangular lamina (ii) thin uniform rod and (iii) circular disc. Theory of compound pendulum and bar pendulum. Theory of flywheel and its applications. Problems	13
Activity/ Self Study	1. Moment of inertia is an abstract concept. It simply gives a measure of rotational inertia of a rigid body. It is proportional to the product of the square of radius, r of the body and its mass, m. Students by referring to websites, can construct and perform simple experiments to verify that MI α mr^2.	

	2. Performing experiments on gravity and Kepler's laws are somewhat difficult. However, students can prepare suitable charts, understand and give seminar talks in the class. Websites can help in this regard.	
Unit III	**Elasticity:**Definition of Stress-strain, Hooke's law. Types of elastic constants. modulus of elasticity and derivation of expression for relation between elastic constants, Poisson's ratio, expression for Poisson's ratio in terms of elastic constants. Work done in stretching and twisting wire. Theory of torsional pendulum, determination of rigidity modulus and time period. Bending moments. Theory of cantilever. Determination of Youngs modulus by bending of beam supported at its ends and loaded at middle. Problems	13
Activity/ Self Study	1.Verification of Hook's law Arrange a steel spring with its top fixed with a rigid support on a wall and a meter scale alongside. Add 100 g load at a time on the bottom of the hanger in steps. This means that while putting each 100g load, we are increasing the stretching force by 1N. Measure the extension for loads up to 500g. Plot a graph of extension versus load. Shape of the graph should be a straight line indicating that the ratio of load to extension is constant. Go for higher loads and find out elastic limit of the material. 2. Repeat the above experiment with rubber and other materials and find out what happens after exceeding elastic limit.	
Unit IV	**Surface tension :** Definition of surface tension, Angle of contact, Surface energy, relation between surface tension and surface energy, pressure difference across curved surface. Excess of pressure inside spherical liquid drop, Capillary rise, derivation of expression for rise of liquid in a capillary tube. Determination of surface tension by Quinke's method. Effect of temperature, impurity on surface tension. Problems **Viscosity :** Streamline flow, turbulent flow, equation of continuity, determination of coefficient of Viscosity by Poisulle's method, Stoke's law with derivation and expression for terminal velocity. Effect of temperature on viscosity. Problems	13
Activity/ Self study	1. Measure surface tension of water and other common liquids and compare and learn i) Why water has high ST? Give reasons. ii) Check whether ST is a function of temperature? You can do it by heating the water to different temperatures and measure ST. iii) Plot ST. versus T and learn how it behaves. iv) Mix some quantity of kerosene or any oil to water and measure ST. Check whether ST for the mixture is more or less than pure water. Give reasons. 2**.** Collect a set of different liquids and measure their viscosity. i) Find out whether sticky or non-sticky liquids are most viscous. Think of reasons. ii) Mix non-sticky liquid to the sticky liquid in defined quantities and measure viscosity. Find out whether viscosity is increasing or decreasing with increase of non- sticky liquid concentration. iii) Do the above experiment by mixing sticky liquid to the non-sticky liquid. Find out change in viscosity with increase of concentration of sticky liquid. iv) Think why one should know viscosity of the liquid.	

Recommended Leaning Resources	
Text Books	**Textbooks** 1. Mechanics by D.S.Mathur, New Edition 2000, S. Chand& Co. 2. Classical Mechanics by J. C.Upadhya,2019, Himalaya Publishers. 3. Mechanics and Relativity by Vidwan Singh Soni,3rd Edition, PHIL earning Pvt.Ltd. 4. Mechanics Berkeley PhysicsCourse,Vol.1: Charles Kittel, *et.al*.2007,Tata McGraw-Hill. 5. Engineering Mechanics, Basudeb Bhattacharya, 2ndEdn, 2015, Oxford University Press. 6. Elements of properties of matter by D.S.Mathur, 2010, S. Chand & Co. 7. Properties of Matter by Brijlal & Subramanyam.
Reference Books	1. Physics:Resnick,Halliday&Walter,9thEdn,2010,Wiley. 2. Physics by Halliday and Resnick,Vol1. 3. University Physics,Ronald Lane Reese,2003,Thamson Brooks/Cole.

Laboratory Experiments:

NOTE: Minimum of Eight experiments has to be performed

Year	I	**Course Code: 21BSC1C1PHY1P**	**Credits**	2
Sem.	1	**Course Title: Practical- I**	**Hours**	4 hrs/week
Formative Assessment Marks: 25		Summative Assessment Marks: 25	Duration of ESA: 4 hrs.	

Sl. No	**Experiment**
1	Determination of g using bar pendulum (L versus T and L versus LT^2graphs)
2	Determination of moment of inertia of a Fly Wheel
3	Determination of moment of inertia of an irregular body
4	Determination of rigidity modulus using torsional pendulum
5	Verification of parallel axis theorem
6	Verification of perpendicular axis theorem
7	Determination of Young's Modulus of a bar by bending method
8	Verification of Hook's Law by Searle's method.
9	Young's modulus by cantilever–Load versus Depression graph
10	Young's modulus by Koenig's method
11	Young's modulus by stretching (Searle's apparatus).
12	Modulus of rigidity (twisting)
13	Viscosity by Stoke's method
14	Radius of capillary tube by mercury pellet method
15	Surface tension by drop weight method
16	Critical pressure for streamline flow

Recommended Leaning Resources

Text Books	1.Practical Physics-M.A. Hipparagi
Reference Books	1. Physics through experiments,by B. Saraf,2013,Vikas Publications. 2. A labmanual of Physics for undergraduate classes, 1st Edition, Vikas Publications. 3. BSc Practical Physics by CL Arora, Revised Edition 2007, S. Chand & Co. 4.Anadvanced course in practical physics, D. Chattopadhyay, PC Rakshit, B.Saha, Revised Edition 2002, New Central Book Agency Pvt Ltd.

OPEN-ELECTIVE SYLLABUS:

Year	I	**Course Code: 21BSC1O1PHY1**	**Credits**	03
Sem.	1	**Course Title: Energy Sources**	**Hours**	40
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA: 02 hrs.	

Unit No.	**Course Content**	**Hours**
Unit I	**Introduction:** Energy concept-sources in general, its significance & necessity. Classification of energy sources: Primary and Secondary energy, Commercial and Non-commercial energy, Renewable and Non-renewable energy, Conventional and Non-conventional energy, Based on Origin-Examples and limitations. Importance of Non-commercial energy resources.	**05**
	Renewable energy sources: Need of renewable energy, non-conventional energy sources. An overview of developments in Offshore Wind Energy, Tidal Energy, Wave energy systems, Ocean Thermal Energy Conversion, solar energy, biomass, biochemical conversion, biogas generation, geothermal energy tidal energy, Hydroelectricity.	**05**
Unit II	**Conventional energy sources:** Fossil fuels & Nuclear energy-production & extraction, usage rate and limitations. Impact on environment and their issues& challenges. Overview of Indian & world energy scenario with latest statistics- consumption & necessity. Need of eco-friendly & green energy & their related technology.	**10**
Unit III	**Solar energy**: Solar Energy-Key features, its importance, Merits & demerits of solar energy, Applications of solar energy. Solar water heater, flat plate collector, solar distillation, solar cooker, solar green houses, solar cell -brief discussion of each. Need and characteristics of photovoltaic (PV) systems, PV models and equivalent circuits, and sun tracking systems.	**10**
Unit IV	Fundamentals of Wind energy, Wind Turbines and different electrical machines in wind turbines, Power electronic interfaces, and grid interconnection topologies. Ocean Energy Potential against Wind and Solar, Wave Characteristics and Statistics, Wave Energy Devices. Tide characteristics and Statistics, Tide Energy Technologies, Ocean Thermal Energy.	**08**
	Geothermal and hydro energy: Geothermal Resources, Geothermal	**02**

	Technologies. Hydropower resources, hydropower technologies, environmental impact of hydro power sources.	
	Activity 1. Demonstration of on Solar energy, wind energy, etc, using training modules at Labs. 2. Conversion of vibration to voltage using piezoelectric materials. 3. Conversion of thermal energy into voltage using thermoelectric (using thermocouples or heat sensors) modules. 4. Project report on Solar energy scenario in India 5. Project report on Hydro energy scenario in India 6. Project report on wind energy scenario in India 7. Field trip to nearby Hydroelectric stations. 8. Field trip to wind energy stations like Chitradurga, Hospet, Gadag, etc. 9. Field trip to solar energy parks like Yeramaras near Raichur. 10. Videos on solar energy, hydro energy and wind energy.	
	Reference Books: 1. Non-conventional energy sources - G.D Rai - Khanna Publishers, New Delhi 2. Solar energy - M P Agarwal - S Chand and Co. Ltd. 3. Solar energy - Suhas P Sukhative Tata McGraw - Hill Publishing Company Ltd. 4. Godfrey Boyle, "Renewable Energy, Power for a sustainable future", 2004, Oxford University Press, in association with The Open University. 5. Dr. P Jayakumar, Solar Energy: Resource Assessment Handbook, 2009 6. J.Balfour, M.Shaw and S. Jarosek, Photovoltaics, Lawrence J Goodrich (USA). http://en.wikipedia.org/wiki/Renewable_energy	

Semester – II

Electricity & Magnetism

Course Title: Electricity and Magnetism	Course Credits: 4
Total Contact Hours: 52	Duration of ESA: 2 hours
Formative Assessment Marks: 40	Summative Assessment Marks: 60

Programme Outcomes

1. Discipline Knowledge: Knowledge of science and ability to apply to relevant areas.
2. Problem solving: Execute a solution process using first principles of science to solve problems related to respective discipline.
3. Modern tool usage: Use a modern scientific, engineering and IT tool or technique for solving problems in the areas of their discipline.
4. Ethics: Apply the professional ethics and norms in respective discipline.
5. Individual and teamwork: Work effectively as an individual as a team member in a multidisciplinary team.
6. Communication: Communicate effectively with the stake holders, and give and receive clear instructions.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs)

Program Outcomes (POs)

Course Outcomes (COs)	1	2	3	4	5	6
i. Demonstrate Gauss law, Coulomb's law for the electric field, and apply it to systems of point charges as well as line, surface, and volume distributions of charges.	x	x				
ii. Explain and differentiate the vector (electric fields, Coulomb's law) and scalar (electric potential, electric potential energy) formalisms of electrostatics.	x					
iii. Apply Gauss's law of electrostatics to solve a variety of problems.	x	x			x	
iv. Describe the magnetic field produced by magnetic dipoles and electric currents.	x					
v. Explain Faraday-Lenz and Maxwell laws to articulate the relationship between electric and magnetic fields.	x					

vi.	Describe how magnetism is produced and list examples where its effects are observed.	**x**				**x**	**x**
vii.	Apply Kirchhoff's rules to analyze AC circuits consisting of parallel and/or series combinations of voltage sources and resistors and to describe the graphical relationship of resistance, capacitor and inductor.	**x**	**x**			**x**	**x**
viii.	Apply various network theorems such as Superposition, Thevenin, Norton, Reciprocity,• Maximum Power Transfer, etc. and their applications in electronics, electrical circuit analysis, and electrical machines.	**x**	**x**			**x**	**x**

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark 'X' in the intersection cell if a course outcome addresses a particular program outcome.

Year	I	**Course Code:21BSC2C2PHY2L**	**Credits**	4
Sem.	2	**Course Title : Electricity and Magnetism**	**Hours**	52

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA: 2 hrs.

Unit No.	**Course Content**	**Hours**
Unit I	**Vector Analysis:** Scalar and Vector Products. Gradient of scalar and its physical significance. Divergence of vector and its physical significance. Curl of vector and its physical significance. Vector integration; line, surface & volume integrals of a vector field. Gauss Divergence theorem & Stokes theorem (statement). Problems **Maxwell's Electromagnetic Theory:** Derivation of Maxwell's equations in differential form. Mention of Maxwell's equations in integral form and their physical significances. Derivation for general plane wave equation in free space. Transverse nature of radiation. Derivation of Poynting's theorem. Problems	13
Activity/Self Study	Solving problems on gradient, divergence & curl of a vector	
Unit II	**DC Circuit Analysis:** Voltage and current sources. Kirchhoff's current and voltage laws. Derivation of Thevenin's Theorem. Derivation of Norton's Theorem. Derivation of Superposition Theorem. Derivation of Maximum Power Transfer Theorem. Problems **Transient Circuits:** Theory of growth and decay of current in RL circuit. Theory of charging and discharging of capacitor in RC circuit. Time constants of RL and RC circuits. Measurement of high resistance by leakage method. Problems	13
Activity/Self Study	1.Solving problems on Thevenin's, Norton's, Superposition and Maximum Power Transfer Theorems. 2.Charging and discharging of a capacitor through high resistance. 3.Measurment of time constant of RL and RC circuit.	
Unit III	**Magneto statics:** Statement of Biot Savart's law. Derive an expression for Magnetic field at a point (1) due to a straight conductor carrying current (ii) along the axis of the circular coil carrying current (iii) along the axis of solenoid. Principle, construction and theory of Helmholtz Galvanometer. Problems **Alternating Current:** Definitions of average, peak and rms values of AC. AC circuits containing LR, CR and their responses (using j operator). Expressions for impedance, current & phase angle in series LCR circuit using j operator. Expressions for admittance and condition for resonance in parallel, LCR circuit using j operator. Concept of Series resonance & parallel resonance (sharpness, half power frequency, quality factor, voltage magnification). Comparison between Series resonance & parallel resonance. De Sauty's Bridge. Problems	13
Activity/Self Study	1.Experiments to show the magnetic field due to straight conductor, circular coil and solenoid. 2.Construction of Helmholtz coil using PVC pipe and copper wire.	

	3.To show the lagging of current and voltage in RL, RC and RLC circuits.	
Unit IV	**Electrical Instrument:** Ballistic Galvanometer; Theory of Ballistic Galvanometer (Derivation for current and Charge). Constants of Ballistic Galvanometer and their relationship. Condition for moving coil galvanometer to be ballistic. Determination of self-inductance (L) by Rayleigh's method. Theory of Earth inductor, Measurement of $B_{H,}$ Bv and angle of dip at a place. CRO block diagram. Use of CRO in the measurement of Voltage, Frequency and Phase. Problems **Dielectrics:** Types of dielectrics (polar and non-polar molecules). Electric dipole moment (p), electric polarization (P). Gauss law in dielectrics. Derivation for Relation between D, E and P. Derivation for relation between dielectric constant and electric susceptibility. Boundary conditions for E & D. Problems	13
Activity/Self-Study	1.To show the working of Ballistic Galvanometer 2.Working of CRO and its applications.	
Recommended Leaning Resources		
Print Resources	1) Electricity and magnetism by Brij Lal and N Subrahmanyam, Rathan Prakash an Mandir, Nineteenth Edition, 1993. 2) Principles of Electronics by V K Mehta and Rohit Mehta, S Chand & Company, Eleventh Edition,2008. 3) Fundamentals of Magnetism & Electricity: D. N. Vasudeva, S Chand Publication, (2011). 4) Fundamentals of Electricity and Magnetism – Basudev Ghosh (Books & Allied New Central Book Agency, Calcutta, 2009). 5) Electricity & Magnetism: B. S. Agarwal, Kedarnath Ramnath Publication (2017). 6) Electricity and Magnetism with Electronics: Dr. K.K. Tewari, S. Chand Publications (1995). 7) Fundamentals of electric circuit theory: Dr. D. Chattopadhyay & Dr. P. C. Rakshit, S. Chand Publications, 7th Rev. Edn. (2006). 8) Electricity and Magnetism: John Yarwood, University Tutorial Press, (1973). 9) Electricity & Magnetism, N S Khare& S S Srivastava, AtmaRam & Sons, New Delhi. 10) Electricity & Magnetism, D L Sehgal, K L Chopra, N K Sehgal, S Chand & Co, Sixth Edition, (1988). 11) Electricity & Electronics, D C Tayal, Himalaya Publishing House, Sixth Edition (1988). 12) Electricity and Magnetism, S P Taneja, R Chand & Co. New Delhi.	

Laboratory Experiments:

NOTE: Minimum of Eight experiments has to be performed

Year	I	**Course Code: 21BSC2C2PHY2P**	**Credits**	2
Sem.	2	**Course Title: Practical-II**	**Hours**	4 hrs/week
Formative Assessment Marks: 25		Summative Assessment Marks: 25	Duration of ESA: 4 hrs.	

Sl. No	**Experiment**
1	Thevenin's & Norton's theorem (Ladder Network)
2	Thevenin's & Norton's theorems (Whetstone Bridge)
3	High resistance by leakage method
4	Time constant of RC circuit by charging and discharging method.
5	Calibration of Ammeter using Helmholtz Galvanometer
6	Constants of Ballistic Galvanometer
7	LCR series / parallel resonance circuit
8	De Sauty's AC bridge
9	Self-Inductance by Rayleigh's method
10	Use of CRO to find voltage, frequency and phase.
11	L & C by Equal Voltage Method
12	Black Box- Identify & Measure R, L & C
13	Anderson's Bridge to determine the self-inductance of the coil (L).
14	Verification of Superposition Theorem
15	Verification of maximum Power Transfer Theorem

Recommended Leaning Resources

Reference Books	1. Physics through experiments. B Saraf etc, - Vikas Publications (2013) 2. D P Khandelwal – A Laboratory Manual of Physics for Undergraduate Classes, Vikas Publications First ed (1985) 3. Advanced Practical Physics for Students – Workshop & Flint, Methuen & Co, London. 4. An Advanced Course in Practical Physics, D Chattopadhyay, P C Rakshit, B Saha, New Central Book Agency (P) Limited, Kolkata, Sixth Revised Edition, (2002) 5. BSC, Practical Physics, CL Arora, SChand& Co, New Delhi, (2007) Revised Edition. 6. B.Sc. Practical Physics, Geeta Sanon R. Chand & Co. New Delhi Rani Channam University, Belagavi, B.Sc. (CBCS) Physics Syllabus

OPEN-ELECTIVE SYLLABUS:

Year	I	**Course Code: 21BSC2O2PHY1**	**Credits**	03
Sem.	2	**Course Title:** OPTICAL INSTRUMENTS	**Hours**	40
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	

Unit No.	**Course Content**	**Hours**
Unit I	**Basics of Optics** Scope of optics, optical path, laws of reflection and refraction as per Fermat's principle, magnifying glass, Lenses (thick and thin), convex and concave lenses, Lens makers formulae for double concave and convex lenses, lens equation.	10
Unit II	Focal and nodal points, focal length, image formation, combination of lenses, dispersion of light: Newton's experiment, angular dispersion and dispersion power. Dispersion without deviation. (Expressions need not be derived, but have to be discussed qualitatively).	10
Unit III	**Camera and microscopes** Human eye (constitution and working), Photographic camera (principle, construction and working), construction, working and utilities of Simple microscopes, Compound microscope, Electron microscopes, Binocular microscopes **Self study** Experimental determination of magnifying power of a microscope. (Construction part can be discussed through block diagrams)	10
Unit IV	**Telescopes and Spectrometer** Construction, working and utilities of Astronomical telescopes Terrestrial telescopes Reflecting telescopes, Construction, working and utilities of Eyepieces or Oculars (Huygen, Ramsden's, Gauss) Spectrometer - Construction, working and utilities, measurement of refractive index. **Self study** Telescopes used at different observatories in and outside India. Hydropower resources, hydropower technologies, environmental impact of hydro power sources. Carbon captured technologies, cell, batteries, power consumption	10
	Activities: 1) Find position and size of the image in a magnifying glass and magnification. 2) Observe rain bows and understand optics. 3) Create a rainbow. 4) Find out what makes a camera to be of good quality.	

	5) Observe the dispersion of light through prism. 6) Make a simple telescope using magnifying glass and lenses. 7) Learn principle of refraction using prisms. 8) Check bending of light in different substances and find out what matters here. 9) Learn about different telescopes used to see galaxies and their ranges. Many more activities can be tried to learn optics by going through you tubes and webistes such as https://spark.iop.org, http://www.yenka.com, https://publiclab.org etc.	

ASSESSMENT METHODS

Evaluation Scheme for Internal Assessment:

Theory:

Assessment Criteria	40 marks
1st Internal Assessment Test for 30 marks 1 hr after 8 weeks and 2nd Internal Assessment Test for 30 marks 1 hr after 15 weeks . Average of two tests should be considered.	30
Assignment	05
Activity	05
Total	**40**

Assessment Criteria	25 marks
1st Internal Assessment Test for 20 marks 1 hr after 8 weeks and 2nd Internal Assessment Test for 20 marks 1 hr after 15 weeks. Average of two tests should be considered.	20
Assignment/Activity	05
Total	**25**

Practical:

Assessment Criteria	25 marks
Internal test	15
Viva Voce / basic understanding of the concept	05
Journal/Practical Record	05
Total	**25**

Scheme of Evaluation for Practical Examination

Sl. No.	Particulars	Marks Allotted Max. 25
1.	Basic formula with description, nature of graph if any & indication of unit	05
2.	Tracing of schematic ray diagram/Circuit diagram with description and tabulation	05
4.	Experimental skill & connection	05
5.	Record of observation,	05
6.	Calculation including drawing graph	04
7.	Accuracy of result with unit	01
	Total	**25**

Question Paper Pattern:

RANI CHANNAMMA UNIVERSITY
Department of PHYSICS

I /II Semester B.Sc.

Sub: **Code:** **Maximum Marks: 60**

Q.No.1.	**Answer any Six Questions** ***(Two question from Each Unit to be asked)*** **a.** **b.** **c.** **d,** **e.** **f.** **g.** **h.**	**6X2=12**
Q.No.2.	**(Questions from Unit-I)** **a.** **b.** **OR** **c.** **d.**	 **08** **04** **08** **04**
Q.No.3.	**(Questions from Entire Unit-II)** **a.** **b.** **OR** **c.** **d.**	 **08** **04** **08** **04**
Q.No.4.	**(Questions from Unit-III)** **a.** **b.** **OR** **c.** **d.**	 **08** **04** **08** **04**
Q.No.5.	**(Questions from Unit-IV)** **a.** **b.** **OR** **c.** **d.**	 **08** **04** **08** **04**

Note:

i. There should be a problem of marks from each unit and may be asked in either b or d in questions 2 to 5.

ii. If necessary, sub questions a and c from 2 to 5 may be subdivided in to i. and ii. Without exceeding maximum 08 marks.

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS

Of

PHYSICS

as per the Choice Based Credit System (CBCS) designed in accordance with
Learning Outcomes-Based Curriculum Framework (LOCF)
of National Education Policy (NEP) 2020
for

Bachelor of Science (Physics)

I to IV Semesters

w.e.f.

Academic Year 2022-23 and onwards

PREAMBLE

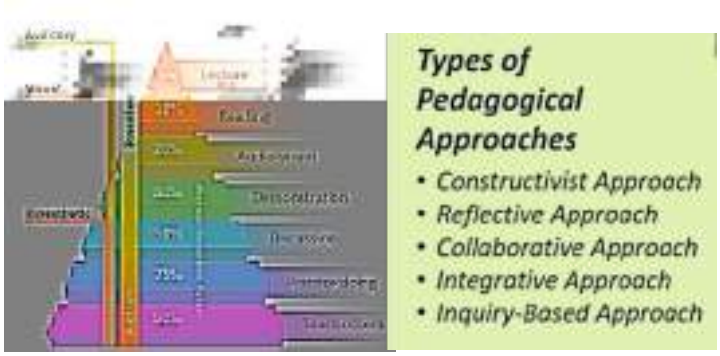
The New Education Policy (2020) is a paradigm shift from the conventional system we practice even today. Giving students the entire freedom to choose what to learn, how to learn, where to learn and when to learn, will enable a personalized education that suits his/her own personality. The drive to change the pedagogy in the curriculum and syllabi will cater to the cognitive, affective and psycho-motor domain of learning, which will fruitfully engage to student and guide him to ascend the Blooms levels of learning hierarchy, elevating them from just remembering to become creative through acquiring skills of application, evaluation and analysis. Such an approach will enable the institution and the individual to design and execute education that is suitable and doable. The wonderful Academic Credit accumulation and the multiple exit/entry options enable multi-disciplinary obtainable from multiple institutions, and even from recognized digital platforms. This will create unprecedented opportunities to the students to self-evaluate and change course at every stage of education as they learn. Introducing the possibility of cutting across disciplines to pursue one's interest and talent can boost curricular and extra-curricular activities by an equal measure. This will definitely enable the blooming of creativity among individuals who will not only be excellent and productive employees, but also assume the mantle of becoming entrepreneurs and job providers. The opportunity for the teacher to adopt novel pedagogies will make classrooms vibrant, meaningful and effective. The student choices will also lead to a healthy cross-disciplinary interaction between institutions and consequently enhancing their capabilities and credibility.

The NEP-2020 is based on Outcome Based Education, where the Graduate Attributes and employment opportunities are first kept in mind to reverse-design the Programs, Courses and Supplementary activities to attain the graduate attributes and learning outcomes.

- Attribute 1: Deep discipline knowledge and intellectual breadth. ...
- Attribute 2: Creative and critical thinking, and problem solving. ...
- Attribute 3: Teamwork and communication skills. ...
- Attribute 4: Professionalism and leadership readiness. ...
- Attribute 5: Intercultural and ethical competency.

The learning outcomes-based curriculum framework for a degree in B.Sc. (Honours) Physics is intended to provide a comprehensive foundation to the subject and to help students develop the ability to successfully continue with further studies and research in the subject while they are equipped with required skills at various stages. The framework is designed to equip students with valuable cognitive abilities and skills so that they are successful in meeting diverse needs of professional careers in a developing and knowledge-based society. The curriculum framework takes into account the need to maintain globally competitive standards of achievement in terms of the knowledge and skills in Physics, as well develop scientific orientation, spirit of enquiry problem solving skills and human and professional will values which foster rational and critical thinking in the students.

It is imperative that in the spirit of the NEP, several academic matters have to change. The most important among these will be the pedagogy that will be adopted in the Teaching-Learning experience to enrol, engage and involve and inspire the students. The learning that happens by employing different types of pedagogies is shown below, and thus need to be adopted in the teaching-learning process for effective cognition by the students using the Auditory, Visual and Kinaesthetic approaches:



Along with conventional teaching methods, Activity based pedagogies are seen to be extremely effective in achieving the Program Educational Objectives. The Committee has attempted to consider both the spirit of the NEP and the existing system and framed the syllabus within the Curriculum options offered by the Higher Education Council. The broad topic level syllabus for all the 5 years (10 semesters) for an integrated B.Sc + M.Sc program has been provided. However, a detailed syllabus has to been provided for the First Two Semester. Attempts have been made to sincerely bring in Activity based pedagogy. The activities have been listed and a few examples have been provided to guide the teacher of how to create their own activities that engage and illuminate students by group and self-involvement methods and a possible evaluation method.

PROGRAM OUTCOMES

Exit with:	Credits Required
Certificate upon the Successful Completion of the First Year (Two Semesters) of the multidisciplinary Four-year Undergraduate Programme/Five-year Integrated Master's Degree Programme	44 - 48

1. **Discipline Knowledge:** Knowledge of science and ability to apply to relevant areas.
2. **Problem solving:** Execute a solution process using first principles of science to solve problems related to respective discipline.
3. **Modern tool usage:** Use a modern scientific, engineering and IT tool or technique for solving problems in the areas of their discipline.
4. **Ethics:** Apply the professional ethics and norms in respective discipline.
5. **Individual and teamwork:** Work effectively as an individual as a team member in a multidisciplinary team.

6. **Communication:** Communicate effectively with the stake holders, and give and receive clear instructions.

Exit with:	Credits Required
A **Diploma** upon the Successful Completion of the Second Year (Four Semesters) of the multidisciplinary Four-year Undergraduate Programme/Five-year Integrated Master's Degree Programme	88 - 96

1. **Discipline Knowledge:** Knowledge of science and ability to apply to relevant areas.
2. **Conduct investigations:** Conduct investigations of technical issues as per their level of understanding and knowledge.
3. **Problem solving:** Formulate and implement a solution process using first principles of science to solve problems related to respective discipline.
4. **Modern tool usage:** Apply a modern scientific, engineering and IT tool or technique for solving problems in the areas of their discipline.
5. **Ethics:** Apply and commit to the professional ethics and norms in respective profession.
6. **Individual and teamwork:** Work effectively as an individual in a multidisciplinary team.
7. **Communication:** Communicate effectively with the stake holders, and give and receive clear instructions.

Exit with:	Credits Required
Basic Bachelor Degree at the Successful Completion of the Third Year (Six Semesters) of the multidisciplinary Four- year Undergraduate Programme/Five-year Integrated Master's Degree Programme	132 - 144

1. **Discipline Knowledge:** Knowledge of basics of science and ability to apply the understanding of fundamentals of major discipline in solving complex problems.
2. **Conduct investigations:** Conduct investigations of issues in their respective disciplines and arrive at valid conclusions.
3. **Problem solving:** Implement a solution process using first principles of science to solve problems related to respective discipline.
4. **Modern tool usage:** Select and use a modern scientific, engineering and IT tool or technique for solving problems in the areas of their discipline.
5. **Environment and Society:** Evaluate the impact of scientific solutions on society and environment and the need for sustainable solutions.
6. **Ethics:** Demonstrate professional ethics, responsibilities and norms in respective profession.
7. **Individual and teamwork:** Work effectively as an individual as a team member and as a leader in a multidisciplinary team.

8. **Communication:** Communicate effectively with the stake holders, write and comprehend project reports and documentation, deliver effective presentations, and give and receive clear instructions.
9. **Project Management and Finance:** Apply the knowledge of scientific and technological principles to one's own work to manage projects in multidisciplinary settings.
10. **Lifelong Learning:** Engage in lifelong learning in the context of changing trends in respective discipline.

Exit with:	Credits Required
Bachelor Degree with Honours in a Discipline at the Successful Completion of the Fourth Years (Eight Semesters) of the multidisciplinary Four-year Undergraduate Programme/Five-year Integrated Master's Degree Programme	176 - 192

1. **Discipline Knowledge:** Knowledge of basics of science and research, and ability to apply the understanding of fundamentals of specialized discipline in solving complex scientific problems.
2. **Conduct investigations:** Conduct investigations of issues using research methods and research-based discipline knowledge including design of experiments, data collection, interpretation and analysis to arrive at valid conclusions.
3. **Problem analysis:** Identify, formulate and analyze complex scientific problems using first principles of respective discipline.
4. **Design and Development of solutions:** Design solutions for complex scientific problems and execute them by considering the environmental, societal and public safety aspects appropriately.
5. **Modern tool usage:** Identify, select and use a modern scientific, engineering and IT tool or technique for modelling, prediction, data analysis and solving problems in the areas of their discipline.
6. **Environment and Society:** Evaluate the impact of scientific solutions on society and environment and design sustainable solutions.
7. **Ethics:** Demonstrate professional ethics, responsibilities and norms in respective profession.
8. **Individual and teamwork:** Work effectively as an individual as a team member and as a leader in a multidisciplinary team.
9. **Communication:** Communicate effectively with the stakeholders with emphasis on communicating with scientific community, comprehend scientific reports, write research papers and projects proposals and reports, deliver effective presentations, and give and receive clear instructions.
10. **Project Management and Finance:** Apply the knowledge of scientific and technological principles to one's own work to manage projects in multidisciplinary settings.
11. **Lifelong Learning:** Identify knowledge gaps and engage in lifelong learning in the context of changing trends in respective discipline.

PROGRAM STRUCTURE

Proposed Curricular and Credits Structure under Choice Based Credit System [CBCS] of Physics Major & One Minor Discipline Scheme for the Four Years Physics B.Sc. Undergraduate Honors Programme with effect from 2022-23.

SEMESTER-I									
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**		**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**P**		
L1	21BSC1L1LK1	Kannada	40	60	100	4	-	3	2
	21BSC1L1LFK1	Functional Kannada							
L2	21BSC1L2LEN2	English	40	60	100	4	-	3	2
	21BSC1L2LHI2	Hindi							
	21BSC1L2LSN2	Sanskrit							
	21BSC1L2LTE2	Telugu							
	21BSC1L2LUR2	Urdu							
DSC1	21BSC1C1PHY1L	Mechanics & Properties of Matter	40	60	100	4	-	4	2
	21BSC1C1PHY1P	Practical I	25	25	50	-	4	2	4
DSC1	Another Department Code	Another Department Course Title	40	60	100	4	-	4	2
			25	25	50	-	4	2	4
SEC1	21BSC1SEC1DF1	Digital Fluency	25	25	50	1	2	2	2
VBC1	21BSC1V1PE1	Yoga/Sports	25	--	25	-	2	1	--
VBC2	21BSC1V2HW1	H&W/NCC/NSS/R&R/CA	25	--	25	-	2	1	--
OEC1	21BSC1O1PHY1	Energy Sources	40	60	100	3	-	3	2
Total Marks					**700**	**Semester Credits**		**25**	

SEMESTER-II										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L3	21BSC2L3LK2	Kannada	40	60	100	4	-	-	3	2
	21BSC2L3FKL2	Functional Kannada								
L4	21BSC2L4EN2	English	40	60	100	4	-	-	3	2
	21BSC2L4HI2	Hindi								
	21BSC2L4SN2	Sanskrit								
	21BSC2L4TE2	Telugu								
	21BSC2L4UR2	Urdu								
DSC2	21BSC2C2PHY1L	Electricity & Magnetism	40	60	100	4	-	-	4	2
	21BSC2C2PHY1P	Practical II	25	25	50	-	-	4	2	4
DSC2	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
AECC 1	21BSC2AE1ES1	Environmental Studies	25	25	50	1	-	2	2	2
VBC3	21BSC2V3PE2	Yoga/ Sports	25	--	25	-	-	2	1	--
VBC4	21BSC2V4NC2	H&W/NCC/NSS/R&R/CA	25	--	25	-	-	2	1	--
OEC2	21BSC2O2PHY2	Optical Instruments	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	

SECOND YEAR; SEMESTER-III										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L5	21BSC3L5LK3	Kannada	40	60	100	4	-	-	3	2
	21BSC3L5LFK3	Functional Kannada								
L6	21BSC3L6EN3	English	40	60	100	4	-	-	3	2
	21BSC3L6HI3	Hindi								
	21BSC3L6SN3	Sanskrit								
	21BSC3L6TE3	Telugu								
	21BSC3L6UR3	Urdu								
DSC3	21BSC3C3PHY1L	Wave motion and Optics	40	60	100	4	-	-	4	2
	21BSC3C3PHY1P	Practical III	25	25	50	-	-	4	2	4
DSC3	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
SEC2	21BSC3SEC2AI1	Artificial Intelligence	25	25	50	1	-	2	2	2
VBC5	21BSC3V5PE3	Yoga/ Sports	25	--	25	-	-	2	1	--
VBC6	21BSC3V6NC3	H&W/NCC/NSS/ R&R/CA	25	--	25	-	-	2	1	--
OEC3	21BSC3O3PHY3	Climate Science	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	

SEMESTER-IV										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L7	21BSC4L7LK4	Kannada	40	60	100	4	-	-	3	2
	21BSC4L7LFK4	Functional Kannada								
L8	21BSC4L8EN4	English	40	60	100	4	-	-	3	2
	21BSC4L8HI4	Hindi								
	21BSC4L8SN4	Sanskrit								
	21BSC4L8TE4	Telugu								
	21BSC4L8UR4	Urdu								
DSC4	21BSC4C2PHY4L	Thermal Physics And Electronics	40	60	100	4	-	-	4	2
	21BSC4C2PHY4P	Practical IV	25	25	50	-	-	4	2	4
DSC4	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
AECC 2	21BSC4AE1CoI1	Constitution of India	25	25	50	1	-	2	2	2
VBC7	21BSC4V5PE4	Yoga/ Sports	25	--	25	-	-	2	1	--
VBC8	21BSC4V6NC4	H&W,/NCC/NSS/R&R/CA	25	--	25	-	-	2	1	--
OEC4	21BSC4O4PHY4	Electrical Instruments	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Physics as Major Discipline										
DSC5	21BSC5C5PHYMJ1L	Classical Mechanics andQuantum Mechanics-	40	60	100	3	-	-	3	2
	21BSC5C5PHYMJ1P	Practical V	25	25	50	-	-	4	2	4
DSC6	21BSC5C5PHYMJ2L	Elements of Atomic,MolecularPhysics	40	60	100	3	-	-	3	2
	21BSC5C5PHYMJ2P	Practical VI	25	25	50	-	-	4	2	4
DSC5	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	4
VC1	21BSC5VC1PHY1	Vocational 1	40	60	100	3	-	-	3	2
VBC9	21BSC5V5PE5	Yoga/ Sports	25	--	25	-	-	2	1	--
VBC10	21BSC5V6NC5	NCC/NSS /R&R(S& G) / Cultural	25	--	25	-	-	2	1	--
SEC3	21BSC5SEC3	Cyber Security	25	25	50	1	-	2	2	2
Total Marks					**650**	**Semester Credits**			**22**	

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Physics as Major Discipline										
DSC7	21BSC6C6PHYMJ1L	Elementsof Nuclear PhysicsandNuclearInstruments	40	60	100	3	-	-	3	2
	21BSC6C6PHYMJ1P	Practical VII	25	25	50	-	-	4	2	4
DSC8	21BSC6C6PHYMJ2L	Elementsof Condensed MatterPhysics	40	60	100	3	-	-	3	2
	21BSC6C6PHYMJ2P	Practical VIII	25	25	50	-	-	4	2	4
DSC6	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	4
VC2	21BSC6VC2PHYVC2	Vocational 2	40	60	100	3	-	-	3	2
VBC1	21BSC6V5PE6	Yoga/ Sports	25	--	25	-	-	2	1	--
VBC2	21BSC6V6NC6	NCC/NSS/R&R(S&G) / Cultural	25	--	25	-	-	2	1	--
SEC4	21BSC6SEC4PC1	Professional Communication	25	25	50	1	-	2	2	2
INT	21BSC6IN1PHYIN	Internship between 5th and 6th semester	25	25	50	3 to 4 weeks			2	Report & Presentation
		Total Marks			**700**	**Semester Credits**			**24**	
		Total Marks for BSC Program			**4150**	**Total Credits for BSc Program**			**146**	

Physics Subject as a Minor Discipline

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC5 As a Minor Subject	21BSC5C5PHYMN1L	Modern Physics – I	40	60	100	3	-	-	3	2
	21BSC5C5PHYMN1P	Modern Physics - I lab	25	25	50	-	-	4	2	4

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC6 As a Minor Subject	21BSC6C6PHYSMN1L	Modern Physics - II	40	60	100	3	-	-	3	2
	21BSC6C6PHYMN1P	Modern Physics - II lab	25	25	50	-	-	4	2	4

Concept Note, Abbreviation Explanation and Coding:

Concept Note:

1. **CBCS** is a mode of learning in higher education which facilitates a student to have some freedom in selecting his/her own choices, across various disciplines for completing a UG/PG program.
2. A credit is a unit of study of a fixed duration. For the purpose of computation of workload as per UGC norms the following is mechanism be adopted in the University:
   One credit (01) = One Theory Lecture (L) period of one (1) hour.
   One credit (01) = One Tutorial (T) period of one (1) hour.
   One credit (01) = One practical (P) period of two (2) hours.
3. Course: paper/subject associated with AECC, DSC, DSEC, SEC, VBC, OEC, VC, IC and MIL

4. In case of **B.Sc**. **Once a candidate chose two courses/subjects of a particular two department in the beginning, he/she shall continue the same till the end of the degree, then there is no provision to change the course(s) and Department(s).**
5. A candidate shall choose **one of the Department's courses as major and other Department course as minor in fifth and sixth semester and major course will get continued in higher semester.**
6. Wherever there is a practical there will be no tutorial and vice-versa
7. A major subject is the subject that's the main focus of Core degree/concerned.
8. A minor is a secondary choice of subject that complements core major/ concerned.
9. Vocational course is a course that enables individual to acquire skills set that are required for a particular job.
10. Internship is a designated activity that carries some credits involving more than **25 days** of working in an organization (either in same organization or outside) under the guidance of an identified mentor. Internship shall be an integral part of the curriculum.
11. **OEC: Open Elective course is for non- Physics students.**

Abbreviation Explanations:

1. AECC: Ability Enhancement Compulsory Course.
2. DSC: Discipline Specific Core Course.
3. DSEC: Discipline Specific Elective Course.
4. SEC: Skill Enhancement Course.
5. VBC: Value Based Course.
6. OEC: Open/Generic Elective Course
7. VC: Vocational Course.
8. IC: Internship Course
9. L1: Language One
10. L2: MIL
11. L= Lecture; T= Tutorial; P=Practical.
12. MIL= Modern Indian Language; English or Hindi or Telugu or Sanskrit or Urdu

Program Coding:

1. Code 21: Year of Implementation
2. Code BSC: BSC Program under the faculty of Applied Science of the University
3. Code 1: First Semester of the Program, (2 to 6 represent higher semesters)
4. Code AE: AECC, (C for DSC, S for SEC, V for VBC and O for OEC)
5. Code 1: First "AECC" Course in semester, similarly in remaining semester for such other courses
6. Code LK: Language Kannada, similarly Language English, Language Hindi, Language Telugu, Language Sanskrit, &Language Urdu
7. Code 1: Course in that semester.
8. PHY: Physics

Program Outcomes:	
1.	Disciplinary knowledge
2.	Communication Skills
3.	Critical thinking, Reflective thinking, Analytical reasoning, Scientific reasoning
4.	Problem-solving
5.	Research-related skills
6.	Cooperation/ Teamwork/ Leadership readiness/Qualities
7.	Information/ Digital literacy/Modern Tool Usage
8.	Environment and Sustainability
9.	Multicultural competence
10.	Multi-Disciplinary
11.	Moral and ethical awareness/Reasoning
12.	Lifelong learning / Self Directed Learning

Course Content Semester – I
Mechanics and Properties of Matter

Course Title: Mechanics and Properties of Matter	Course Credits:4
Total Contact Hours: 52	Duration of ESA: 3 hours
Formative Assessment Marks: 40	Summative Assessment Marks: 60
Model Syllabus Authors: Physics Expert Committee	

Prerequisites

i.	Basic Knowledge of Classical Mechanics up to 12th Standard

Course Learning Outcomes

At the end of the course students will be able to:

i.	Estimate the possible error in measurement of a physical quantity, using its dimensional equation, the least counts of instruments used and by actual measurements in the appropriate system of units.
ii.	Apply laws of conservation of momentum and associated energy along with laws to motion to the systems of linear/rotational motion to determine different parameters associated with physically rigid bodies.
iii.	Apply the concept of the relative frame of reference with appropriate postulates of the theory of relative motion to the measurement of length, time and velocity.
iv.	Apply the laws of Gravitation and Kepler laws to describe the working of satellites and other applications.
v.	Determine theoretically and experimentally the relation between three elastic constants.
vi.	Apply the concept of surface tension and viscosity of fluids.

Course Articulation Matrix

Mapping of Course Outcomes (CO) Program Outcomes

CourseOutcomes/ProgramOutcomes		1	2	3	4	5	6	7	8	9	10	11	12
i	Estimate the possible error in measurement of a physical quantity, using its dimensional equation, the least counts of instruments used and by actual measurements in the appropriate system of units.	X	X	X	X	X	X					X	X
ii	Apply laws of conservation of momentum and associated energy along with laws to motion to the systems of linear/rotational motion to determine different parameters associated with physically rigid bodies.	X	X	X	X	X	X					X	X
iii	Apply the concept of the relative frame of reference with appropriate postulates of the theory of relative motion to the measurement of length, time and velocity.	X	X	X	X	X	X					X	X
iv	Apply the laws of Gravitation and Kepler laws to describe the working of satellites and other applications.	X	X	X	X	X	X					X	X
v	Determine theoretically and experimentally the relation between three elastic constants.	X	X	X	X	X	X					X	X
vi	Apply the concept of surface tension and viscosity of fluids.	X	X	X	X	X	X					X	X

Mechanics & Properties of Matter

Unit1 - The Portion to be Covered

Review of Units and measurements: Fundamental and Derived units, Principal System of units (CGS and SI), measurement of length, mass and time.

Dimensions: Dimensional formulae of physical quantities, equations-use of dimensions, conversion of one system of units into another, Minimum deviation and errors. **(3 Hours)**

Vectors: Definition of scalar and vector with examples, types of vectors. Scalar and Vector Products. Gradient of scalar and its physical significance.

Divergence of vector and its physical significance. Curl of vector and its physical significance. Vector integration; line, surface & volume integrals of a vector field. Gauss Divergence theorem & Stokes's theorem(statement). **(4 Hours)**

Momentum and Energy: Work and energy, Conservation of momentum (linear). Conservation of energy with examples. Concept of elastic and inelastic collisions. Derivation of final velocities in case of elastic collision and inelastic collision, Conservation of linear momentum in case of variable mass. Principle of rocket and derivation for equation of motion for single stage rocket.**(6 Hours)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	Define different systems of units in CGS and SI systems.	L1	1	1-6, 11-12
ii.	What is the dimension of physical quantity?	L1	1	1-6, 11-12
iii.	Write a dimension formula for coefficient of Viscosity of a liquid.	L2	1	1-6, 11-12
iv.	With example demonstrate how to calculate conversion of unit using a dimensional formula of a physical quantity.	L2	1	1-6, 11-12
v.	What is an error? Explain how it is calculated using minimum deviation.	L2	1	1-6, 11-12
vi.	What are scalar and vector? Explain with an example.	L1	1	1-6, 11-12
vii.	Explain gradient, divergence and curl in a physical phenomenon and write mathematical formula for the same.	L2	1	1-6, 11-12
viii.	Apply the work-energy theorem for constant forces acting on a particle.	L3	2	1-6, 11-12
ix.	Apply the law of conservation of linear momentum and energy for simple two-particle systems.	L3	2	1-6, 11-12
x.	Apply the conservation of momentum for an isolated one-dimensional collision to relate the initial momenta of the objects to their momenta after the collision.	L3	2	1-6, 11-12
xi.	Relate the rate to the change in momentum for a moving system	L2	2	1-6, 11-12

	undergoing a change in mass at a given rate.			
xii.	Apply the concepts of conservation of energy, momentum, angular momentum on basic problems.	**L3**	**2**	**1-6, 11-12**
xiii.	Describe special relativistic effects and their effects on the mass and energy of a movingobject.	**L2**	**2**	**1-6, 11-12**
xiv.	Higher order problems.	**L3**	**1,2**	**1-6, 11-12**

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self-Directed Learning etc.

Formative Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities

Activity No. 1	Take different objects of regular shape, write the dimensional equation for their volume, surface area and write their units in SI and CGS systems. For the above calculate the actual volume and surface area using relevant measuring tools. Calculate estimated error using dimensional equation and the actual measurements.
Activity No. 2	Students must identify and explain three examples for Divergence and three examples for Curls in real-world applications.
Activity No. 3	Drop balls of different hardness on different surfaces and list them in order of their energy absorption and give reasons.

Mechanics & Properties of Matter

Unit2 - The Portion to be Covered

Laws of Motion: Newton's Laws of motion. Dynamics of single and a system of particles. Centre of mass. Derivation for position, velocity, acceleration and force of centre of mass.**(3 Hours)**

Dynamics of Rigid bodies: Rotational motion about an axis, Relation between torque and angular momentum, Rotational energy. Moment of inertia: Radius of Gyration, theorem of parallel axis and theorem of perpendicular axis. M I of a rectangular Lamina, M.I of circular disc and solid cylinders. Theory of compound pendulum and determination of g, Determination of M.I of Flywheel. **(6 Hours)**

Gravitation: Newton's law of Gravitation (statement). Expressions for escape velocity and orbital velocity. The motion of a particle in a central force field. Kepler's laws of planetary motion. Derivation for Kepler's 2nd and 3rd law. Concept of Satellite, derivation for binding energy of Satellite. Satellite in a circular orbit. **(4 Hours)**

Topic Learning Outcomes
At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	Apply laws of motionto various dynamical situations and the notion of inertial frames.	**L2**	**3**	**1-6, 11-12**
ii.	Explain what is force based on Newton's laws of motion.	**L2**	**3**	**1-6, 11-12**
iii.	Give the analogy between translational and rotational dynamics with an example of rolling withslipping.	**L2**	**3**	**1-6, 11-12**
iv.	Describe how fictitious forces arise in a non-inertial frame, using this explain why a person sitting in a merry-go-round experiences an outwardpull.	**L2**	**3**	**1-6, 11-12**
v.	Apply Kepler's law to describe the motion of planets and satellites in circular orbit, through the study of law ofGravitation.	**L3**	**3**	**1-6, 11-12**
vi.	Apply Kepler's law for the orbital motion of natural or artificial satelliteand obtain the relation between period, radius and the mass of the satellite.	**L3**	**3**	**1-6, 11-12**
vii.	Determine the location of the centre of mass, given the positions of several particles along an axis of a plane.	**L2**	**3**	**1-6, 11-12**
viii.	Locate the centre of mass of an extended, symmetric object by using symmetry.	**L2**	**3**	**1-6, 11-12**
ix.	Apply newton's laws of motion to moving particles under the gravitational force.	**L3**	**4**	**1-6, 11-12**
x.	Apply Newton's law of gravitation to relate the gravitational force between two particles to their masses and their separation.	**L3**	**4**	**1-6, 11-12**
xi.	Apply the conservation of mechanical energy (including gravitational potential energy) to a particle moving relative to an astronomical body (or some second body that is fixed in place).	**L3**	**4**	**1-6, 11-12**
xii.	For a body moving with constant angular acceleration, obtain the relationships between angular position, angular displacement, angular velocity, angular acceleration, and elapsed time.	**L2**	**4**	**1-6, 11-12**
xiii.	Calculate the rotational kinetic energy of a body in terms of its rotational inertia and its angular speed.	**L2**	**4**	**1-6, 11-12**

xiv.	Apply the work, kinetic energy relationto obtain the work done by a torque.	**L2**	**4**	**1-6, 11-12**
xv.	Higher order problems.	**L3**	**3,4**	**1-6, 11-12**

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self-Directed Learning etc.

FormativeAssessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities

Activity No. 4	Prepare and present a report on different types of Geo Satellite orbits and their characteristics
Activity No. 5	Take an irregular two-dimensional sheet of any material (plastic cardboard) etc and find its centre of mass.
Activity No. 6	Devise an experiment that demonstrates that the variation in the distribution of mass in a rotating body affects the rotating speed. Plot a graph of the variation in the position of mass with the centre of the body and the average speed of rotation.
Activity No. 7	Tie a stone through a thread, rotate it with different speeds for a length given then release it. Calculate the distance it flies before it falls to the ground and hence calculate the possible kinetic energy of rotation.

Mechanics & Properties of Matter

Unit3 - The Portion to be Covered

Elasticity: Definition of Stress-strain, Hooke's law. Types of elastic constants. modulus of elasticity and derivation of expression for relation between elastic constants. Poisson's Ratio-expression for Poisson's ratio in terms of elastic constants. **(4 Hours)**

Derivation of work done per unit volume in a deforming body. Work done in stretching and work done in twisting a wire-Twisting couple on a cylinder. Theory of Single Cantilever **(3 Hours)**

Bending Moment: Derivation of bending moments. Theory of cantilever. Determination of Youngs modulus by bending of beam supported at its ends and loaded at middle. **Torsional Pendulu**m: Derivation for time period of torsion pendulum Determination of rigidity modulus and moment of inertia by Searle's method. **(6 Hours)**

Topic Learning Outcomes
At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	State Hooke's law and obtain the equation for stress, strain and Young's modulus.	L2	5	1-6, 11-12
ii.	Differentiate between different types of elastic moduli.	L2	5	1-6, 11-12
iii.	For shearing strain, obtain the equation that relates stress to strain and their shear modulus.	L2	5	1-6, 11-12
iv.	Explain the advantages and disadvantages of asingle cantilever.	L2	5	1-6, 11-12
v.	Define what is Poison's ratio and obtain the relation between Young'smodulus, modulus of rigidity, bulk modulus and poisons ratio.	L2	5	1-6, 11-12
vi.	Higher order problems.	L3	5	1-6, 11-12

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self-Directed Learning etc.

FormativeAssessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities

Activity No. 8	Draw Stress and Strain Curve for Steel, Rubber and Wood.
Activity No. 9	Calculate stored energy in a catapult in the form of elasticity.

Mechanics & Properties of Matter

Unit4 - The Portion to be Covered

Surface tension:

Definition of surface tension, Angle of contact, Surface energy, relation between surface tension and surface energy, pressure difference across curved surface. Excess of pressure inside spherical liquid drop, Capillary rise, derivation of expression for rise of liquid in a capillary tube. Determination of surface tension by Quinke's method. Effect of temperature, impurity on surface tension. Problems .**(7 Hours)**

Viscosity: Streamline flow, turbulent flow, equation of continuity, determination of coefficient of Viscosity by Poisulle's method, Stoke's law with derivation and expression for terminal velocity. Effect of temperature on viscosity. Problems**(6 Hours)**

Topic Learning Outcomes
At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	Define and explain the theory ofsurface tension of liquids.	L1	6	1-6, 11-12
ii.	Correlate between surface tension and surface energy.	L2	6	1-6, 11-12
iii.	Correlate the property of surface tension with different natural phenomena.	L2	6	1-6, 11-12
iv.	Explain the concept of capillarity in liquids and relate surface tension with capillarity.	L2	6	1-6, 11-12
v.	What is Angle of contact between different surfaces and explain how pressure differs inside and outside the soap bubbles.	L2	6	1-6, 11-12
vi.	Explain how the coefficient of viscosity is calculated using by postulate method and strokes method.	L2	6	1-6, 11-12
vii.	Define viscosity and describe how viscosity can be measured.	L1	6	1-6, 11-12
viii.	Distinguish fluids from solids.	L2	6	1-6, 11-12
ix.	Classify fluids based on the law of viscosity.	L2	6	1-6, 11-12
x.	Explain the term streamline.	L1	6	1-6, 11-12
xi.	Describe steady flow, incompressible flow, non-viscous flow, and irrotational flow.	L2	6	1-6, 11-12
xii.	Explain fluid friction and the factors affecting it.	L1	6	1-6, 11-12
xiii.	Higher order problems.	L3	6	1-6, 11-12

Teaching and Learning Methodology

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Formative Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities	
Activity No. 10	Measure surface tension of water and other common liquids and compare andlearn i) Why water has high surface tension? Think ofreasons. ii) Check whether surface tension is a function of temperature? Youcan do it by heating the water to different temperatures and measureits surface tension. iii) Plot surface tension versus temperature and learn how it behaves. Mix some quantity of kerosene or any oil to water and measure surface tension. Check whether surface tension for the mixtureis more or less than pure water. List thereasons
Activity No. 11	Collect a set of different liquids and measure theirviscosity. i) Find out whether sticky or non-sticky liquids are most viscous. List thereasons. ii) Mix non-sticky liquid with a sticky liquid in defined quantitiesand measure viscosity.Find out whether viscosity is increasing or decreasing with increase of non-sticky liquidconcentration. iii) Do the above experiment by mixing sticky liquid to the non-sticky liquid. Find out change inviscosity with increase of concentration of stickyliquid. List the applications where concept of Viscosity plays a dominant role

Textbooks

Sl No	Title of the Book	Authors Name	Publisher	Year of Publication
1	Mechanics by, New Eition	D. S. Mathur	S.Chand&Co.	2000
2	Mechancis and Relativity by 3rd Edition,	Vidwan Singh Soni,	PHI Learning Pvt.Ltd.	
3	Mechanics Berkeley Physics Course, Vol.1:	Charles Kittel, *et.al.*	TataMcGraw-Hill	2007
4	Properties of Matter	Brijlal&Subramanyam.		

References Books

Sl No	Title of the Book	Authors Name	Publisher	Year of Publication
1	Physics. 9thEdn,	Resnick, Halliday & Walter,	Wiley	2010
2	Physics Vol-I	Halliday and Resnick,		

Formative Assessment

Assessment	Marks
C1: Internal Assessment	10

C1: Research Experience at UG (REU) Project	10
C2: Activity	10
C2: Presentation (Oral or Poster)	10
Total	40

List of Experiments to be performed in the Laboratory Note: Minimum EIGHT experiments have to be carried out.	
1.	Determination of g using bar pendulum (L versus T and L versus LT^2 graphs).
2.	Determination of moment of inertia of a Fly Wheel.
3.	Determination of rigidity modulus using a torsional pendulum.
4.	Modulus of rigidity of a rod – Static torsion method.
5.	Determination of elastic constants of a wire by Searle's method.
6.	Young's modulus by Koenig's method.
7.	Viscosity by Stoke's method.
8.	Verification of Hook's law.
9.	Determination of surface tension of a liquid and the interfacial tension between two liquids using drop weight method.
10.	Study of motion of a spring and to calculate Spring constant, g and unknown mass.
11.	Determination of Young's modulus of a bar by the single cantilever method.
12.	Determination of Young's modulus of a bar by uniform bending method.
13.	Radius of capillary tube by mercury pellet method.
14	Verification of parallel and perpendicular axis theorems.

Reference Book for Laboratory Experiments

Sl No	Title of the Book	Authors Name	Publisher	Year of Publication
1	Physics through experiments	B.Saraf	Vikas Publications	2013
2	A lab manual of Physics for undergraduate classes, 1st Edition,		Vikas Publications.	
3	BSc Practical Physics Revised Ed	CL Arora	S.Chand& Co.	2007
4	An advanced course in practical physics.	D. Chatopadhyay, PC Rakshit, B.Saha	New Central Book Agency Pvt Ltd.	2002

OPEN-ELECTIVE SYLLABUS:

Year	I	**Course Code: 21BSC1O1PHY1**	**Credits**	03
Sem.	1	**Course Title: Energy Sources**	**Hours**	40

Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA: 02 hrs.

Unit No.	**Course Content**
Unit I	**Introduction:** Energy concept-sources in general, its significance & necessity. Classification of energy sources: Primary and Secondary energy, Commercial and Non-commercial energy, Renewable and Non-renewable energy, Conventional and Non-conventional energy, Based on Origin-Examples and limitations. Importance of Non-commercial energy resources**. (5 Hours)**
	Renewable energy sources: Need of renewable energy, non-conventional energy sources. An overview of developments in Offshore Wind Energy, Tidal Energy, Wave energy systems, Ocean Thermal Energy Conversion, solar energy, biomass, biochemical conversion, biogas generation, geothermal energy tidal energy, Hydroelectricity. **(5 Hours)**
Unit II	**Conventional energy sources:** Fossil fuels & Nuclear energy- production & extraction, usage rate and limitations. Impact on environment and their issues& challenges. Overview of Indian & world energy scenario with latest statistics-consumption & necessity. Need of eco-friendly & green energy & their related technology. **(10 Hours)**
Unit III	**Solar energy**: Solar Energy-Key features, its importance, Merits & demerits of solar energy, Applications of solar energy. Solar water heater, flat plate collector, solar distillation, solar cooker, solar green houses, solar cell -brief discussion of each. Need and characteristics of photovoltaic (PV) systems, PV models and equivalent circuits, and sun tracking systems. **(10 Hours)**
Unit IV	Fundamentals of Wind energy, Wind Turbines and different electrical machines in wind turbines, Power electronic interfaces, and grid interconnection topologies. Ocean Energy Potential against Wind and Solar, Wave Characteristics and Statistics, Wave Energy Devices. Tide characteristics and Statistics, Tide Energy Technologies, Ocean Thermal Energy. **(8 Hours)**
	Geothermal and hydro energy: Geothermal Resources, Geothermal Technologies.Hydropower resources, hydropower technologies, environmental impact of hydro power sources. **(2 Hours)**
	Activity 1. Demonstration of on Solar energy, wind energy, etc, using training modules at Labs. 2. Conversion of vibration to voltage using piezoelectric materials. 3. Conversion of thermal energy into voltage using thermoelectric (using thermocouples or heat sensors) modules. 4. Project report on Solar energy scenario in India 5. Project report on Hydro energy scenario in India 6. Project report on wind energy scenario in India 7. Field trip to nearby Hydroelectric stations. 8. Field trip to wind energy stations like Chitradurga, Hospet, Gadag, etc. 9. Field trip to solar energy parks like Yeramaras near Raichur.

	10. Videos on solar energy, hydro energy and wind energy.
	Reference Books: 1. Non-conventional energy sources - G.D Rai - Khanna Publishers, New Delhi 2. Solar energy - M P Agarwal - S Chand and Co. Ltd. 3. Solar energy - Suhas P Sukhative Tata McGraw - Hill Publishing Company Ltd. 4. Godfrey Boyle, "Renewable Energy, Power for a sustainable future", 2004, Oxford University Press, in association with The Open University. 5. Dr. P Jayakumar, Solar Energy: Resource Assessment Handbook, 2009 6. J.Balfour, M.Shaw and S. Jarosek, Photovoltaics, Lawrence J Goodrich (USA). http://en.wikipedia.org/wiki/Renewable_energy

Course Content Semester – II

Electricity & Magnetism

Course Title: Electricity and Magnetism	Course Credits:4
Total Contact Hours: 52	Duration of ESA: 2 hours
Formative Assessment Marks: 40	Summative Assessment Marks: 60
Model Syllabus Authors: Physics Expert Committee	

Prerequisites

i.	Basic Knowledge of Electricity & Magnetismup to 12th Standard

Course Learning Outcomes

At the end of the course students will be able to:

i.	Give the applications of charge distribution and energy associated with a charge for various shapes of electrical conductors, using the principles of the different laws of electrostatic field and potential.
ii.	Explain the impact of polarization due to an electrical field on a dielectric material, and the different terms related to dielectrics and the relation between them.
iii.	To obtain the impact of the electrical field in producing a magnetic field with resulting laws and applications.
iv.	Define various terms associated with a magnetic material andthe relation between them, and demonstrate the types of the magnetic material in terms of their respective BH curves.
v.	Obtain Maxwell's equations in differential and integral forms of transverse electromagnetic waves based on Faraday's and Lenz's laws, along with their production.
vi.	Obtain different quantities of resonance, power dissipation, quality factor and bandwidth for RL, RC, LCR series and parallel circuits, using basic laws of electrical circuits.
vii.	Use Ballistic Galvanometer to obtain charge sensitivity and electromagnetic damping.

Course Articulation Matrix

Mapping of Course Outcomes (CO) Program Outcomes

CourseOutcomes/ProgramOutcomes		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
i	Give the applications of charge distribution and energy associated with a charge for various shapes of electrical conductors, using the principles of the different laws of electrostatic field and potential.	X	X	X	X	X	X					X	X
ii	Explain the impact of polarization due to an electrical field on a dielectric material, and the different terms related to dielectrics and the relation between them.	X	X	X	X	X	X					X	X

iii	To obtain the impact of the electrical field in producing a magnetic field with resulting laws and applications.	X	X	X	X	X	X					X	X
iv	Define various terms associated with a magnetic material and the relation between them, and demonstrate the types of the magnetic material in terms of their respective BH curves.	X	X	X	X	X	X					X	X
v	Obtain Maxwell's equations in differential and integral forms of transverse electromagnetic waves based on Faraday's and Lenz's laws, along with their production.	X	X	X	X	X	X					X	X
vi	Obtain different quantities of resonance, power dissipation, quality factor and bandwidth for RL, RC, LCR series and parallel circuits, using basic laws of electrical circuits.	X	X	X	X	X	X					X	X
vii	Use Ballistic Galvanometer to obtain charge sensitivity and electromagnetic damping.	X	X	X	X	X	X					X	X

Electricity & Magnetism

Unit 1 - The Portion to be Covered

Electric Field and Electric Potential

Concept of Electric charge ,Coulomb's law , Electric lines of forces and their properties, Electric field, electric field strength or intensity at point distance. Electric potential, electric potential at point distance, relation between electric field and electric potential. Gauss theorem with application to charge distribution with spherical, cylindrical and planar symmetry.

Electric field and potential of dipole. Force and Torque on a dipole. Problems **(7 hours)**

Electrostatic energy of a system of charges. Electrostatic energy of a charged sphere. Conductors in an electrostatic Field. Surface charge and force on a conductor. The capacitance of a system of charged conductors. Parallel-plate capacitor. The capacitance of an isolated conductor. Method of Electrical Images and its application to (1) Plane Infinite Sheet and (2) Sphere. **(6hours)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	Demonstrate Gauss law and Coulomb's law for the electric field, and apply it to systems of point charges as well as line, surface, and volume distributions ofcharges.	**L2**	**1**	**1-6, 11-12**

ii.	Explain and differentiate the vector(electric fields, Coulomb's law) and scalar(electric potential, electric potential energy) formalisms ofelectrostatics.	**L1**	**1**	**1-6, 11-12**
iii.	Apply Gauss's law of electrostatics to solve a definedproblem.	**L2**	**1**	**1-6, 11-12**
iv.	Articulate knowledge of electric current, resistance and capacitance in terms of electric field and electricpotential.	**L2**	**1**	**1-6, 11-12**
v.	Show that at every point in the space surrounding a charged particlethe particle sets up an electric field, which is a vector quantity and thus has both magnitude and direction.	**L2**	**1**	**1-6, 11-12**
vi.	Explain electric field lines, including where they originate and terminate and what the spacing between them represents.	**L2**	**1**	**1-6, 11-12**
vii.	Define electric flux and calculate the electric flux due to arbitrary distribution of charges.	**L2**	**1**	**1-6, 11-12**
viii.	Determine the electric field due to a uniformly charged spherical shell, cylindrical area and planar surface using Gauss law	**L2**	**1**	**1-6, 11-12**
ix.	Establish the relation between electric potential and electric field;	**L2**	**1**	**1-6, 11-12**
x.	Calculate the electric field at a point knowing the electric potential;	**L2**	**1**	**1-6, 11-12**
xi.	Determine the torque experienced by an electric dipole in a uniform electric field.	**L2**	**1**	**1-6, 11-12**
xii.	Determine the electric potential of a uniformly charged spherical sphere.	**L2**	**1**	**1-6, 11-12**
xiii.	Calculate the electrostatic potential energy for a given charge distribution.	**L2**	**1**	**1-6, 11-12**
xiv.	Determine the capacitance of parallel plate, spherical and cylindrical capacitors.	**L2**	**1**	**1-6, 11-12**
xv.	Apply the method of images for plane infinite sheet and sphere.	**L2**	**1**	**1-6, 11-12**
xvi.	Higher order problems.	**L3**	**1**	**1-6, 11-12**
Teaching and Learning Methodology				

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self-Directed Learning etc.
Formative Assessment Techniques
One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc
Suggested Activities

Activity No. 1	Build an electric field detector https://www.sciencebuddies.org/blog/electricity-lessons
Activity No. 2	Connect a circuit as per the given diagram and measure the voltage, current and resistance across each component. Also, measure the input voltage and output voltage for the circuit. (Use only one multimeter for the same)
Activity No. 3	Locate a three-phase power connection in your environment. Measure the voltage between the phases. Comment on the phase angle.

Electricity & Magnetism

Unit 2 - The Portion to be Covered

Dielectric Properties of Matter: Electric Field in the matter. Types of dielectrics (polar and non-polar molecules). Electric dipole moment (p), electric polarization (P),Electric displacement (D),Electric susceptibility ,Dielectric constant (K),Gauss law in dielectrics. Derivation for Relation between D, E and P. Derivation for relation between dielectric constant and electric susceptibility. Boundary conditions for E & D. Capacitor (parallel plate, spherical, cylindrical) filled with dielectric. Problems **(6 hours)**

Magnetic Field: Magnetic force between current elements and definition of Magnetic Field, relation between B and **H.** Statement of Boit Savart's law. Derive an expression for Magnetic field at a point (1) due to a straight conductor carrying current (ii) along the axis of the circular coil carrying current. Principle, construction and theory of Helmholtz Galvanometer.Current Loop as a Magnetic Dipole and its Dipole Moment (Analogy with Electric Dipole). Ampere's Circuital Law and its application to (1) Solenoid and (2) Toroid. Properties of B: curl and divergence. Vector Potential. Magnetic Force on (1) point charge (2) current carrying wire (3) between current elements. Torque on a current loop in a uniform Magnetic Field. Problems**(7 hours)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
xvi.	Explain the electrical polarization and dielectrics of a material.	L1	2	1-6, 11-12
xvii.	Define the electrical susceptibility, dielectric constant and electrical polarizability.	L1	2	1-6, 11-12
xviii.	What is a capacitor and explain its working.	L1	2	1-6, 11-12
xix.	Obtain an expression for the capacitance of a parallel plate capacitor, spherical capacitor and a cylindrical capacitor which is filled with a dielectric constant $\boldsymbol{\varepsilon}$.	L2	2	1-6, 11-12
xx.	Explain the displacement vector(D).	L1	2	1-6, 11-12
xxi.	Obtain the relation between the electrical field, polarizability and displacement vector.	L2	2	1-6, 11-12
xxii.	State and explain Gauss's law of dielectrics.	L1	2	1-6, 11-12
xxiii.	Obtain an expression for the magnetic force between two current elements and hence define a magnetic field B.	L2	3	1-6, 11-12
xxiv.	State Boit-Savart's Law.	L1	3	1-6, 11-12
xxv.	Obtain the magnetic field B around a straight wire and a circular loop.	L2	3	1-6, 11-12
xxvi.	What are the magnetic dipoles and their dipole moment?	L1	3	1-6, 11-12
xxvii.	Define and explain Ampere's circuit law.	L1	3	1-6, 11-12
xviii.	Give the applications of Ampere's circuit law to obtain the magnetic field for solenoid and toroid.	L1	3	1-6, 11-12
xxix.	Explain curl, divergence and vector potential associated with a magnetic field.	L1	3	1-6, 11-12
xxx.	Obtain an expression for magnetic force on a point charge current carrying wire and between current elements.	L2	3	1-6, 11-12
xxxi.	Obtain an expression for torque on the current loop in a uniform magnetic field.	L2	3	1-6, 11-12
xxxii.	Higher order problems.	L3	2,3	1-6, 11-12
Teaching and Learning Methodology				
Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self-Directed Learning etc.				
Formative Assessment Techniques				

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities	
Activity No. 4	Design a simple parallel plate capacitor. Using different oils in the gap between two parallel plates, obtain the dielectric constant of the oils used. Compare its value with the literature value at least in the case of three liquids.
Activity No. 5	List the real-time applications where capacitors are used.

Electricity & Magnetism

Unit 3 - The Portion to be Covered

Magnetic Properties of Matter: Magnetic intensity (H), Magnetic induction (B), Magnetization vector (**M)**, Relation between **B, H, M**. Magnetic potential. Derivation of Magnetic intensity and magnetic potential due to dipole (magnet). Permeability and magnetic susceptibility. Types of magnetic materials, Hysteresis curve, retentivity, coercivity, importance of hysteresis on magnetic material (B-H loop). **(6 hours)**

Electromagnetic Theory: Faraday's laws of electromagnetic induction and Lenz's Laws. Energy stored in a Magnetic Field. Equation of continuity, displacement current, Maxwell's Equations: differential and Integral forms and their physical significance, Production of electromagnetic waves ,Transverse nature of electromagnetic radiation, General plane wave equation in free space, Hertz's experiment. **(7 Lectures)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
vii.	What is a magnetization vector, magnetic intensity, magnetic susceptibility and permeability?	L1	4	1-6, 11-12
viii.	Obtain relation between B, H and M.	L2	4	1-6, 11-12
ix.	What is a BH curve and explain the different types of magnetic materials on the nature of its BH curve?	L1	4	1-6, 11-12
x.	What are Faraday's and Lenz's Laws?	L1	5	1-6, 11-12
xi.	Obtain an expression for the energy stored in a magnetic field.	L2	5	1-6, 11-12
xii.	Explain the displacement current.	L1	5	1-6, 11-12
xiii.	Give the differential form of Maxwell's equation.	L2	5	1-6, 11-12
xiv.	Give the integral form of Maxwell's equation.	L2	5	1-6, 11-12
xv.	Give the physical sign of Maxwell's equation.	L2	5	1-6, 11-12
xvi.	Obtain a general plane wave equation in free space.	L1	5	1-6, 11-12

xvii.	Describe Hertz's experiment.	**L1**	**5**	**1-6, 11-12**
xviii.	Higher order problems.	**L3**	**4, 5**	**1-6, 11-12**

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self-Directed Learning etc.

Formative Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities

Activity No. 5	Make a chart and list out the basic properties of magnets. List some devices that engineers have designed using magnets. List some everyday devices that use magnets.
Activity No. 6	Take 3 unknown materials and classify them based on their BH curve.
Activity No. 7	Construct a vertical AC electromagnet that can be momentarily switched on by a push button. Place a ring over the electromagnet, press the button, stand back and observe. Now try the rings of different metals. Measure roughly how high each ring jumps. Try to explain the underlying physics for the varied behaviour of the different rings. Build a small coil with insulated copper wire. Connect an ammeter micro/milli ammeter. Verify magnetic induction using a powerful bar magnet.
Activity No. 8	Demonstrate the working of the electrical Bell.

Electricity & Magnetism

Unit 4 - The Portion to be Covered

Electrical Circuits: State Kirchhoff's laws,Theory of growth and decay of current in RL circuit. Theory of charging and discharging of capacitor in RC circuit. Time constants of RL and RC circuits. Measurement of high resistance by leakage method. Definitions of average, peak and rms values of AC. AC circuits containing LR, CR and their responses (using j operator). Expressions for impedance, current & phase angle in series, LCR circuit using j operator. Concept of Series resonance &Parallel resonance (sharpness, half power frequency, quality factor, voltage magnification). Comparison between Series resonance & parallel resonance. De Sauty's Bridge. **(8 hours)**

Ballistic Galvanometer: Principle, Construction and working of BallisticGalvanometer. Derivation for current and time period of Ballistic galvanometer. Current, Voltage and Charge Sensitivity. Electromagnetic damping. Earth inductor, determination of B_H, B_v and angle of dip. Problems **(5hours)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	State Kirchhoff's laws.	L1	6	1-6, 11-12
ii.	What is charging and discharging of capacitors? Explain how they are obtained.	L2	6	1-6, 11-12
iii.	Explain Complex reactance and impedance in a capacitor circuit.	L1	6	1-6, 11-12
iv.	With a schematic diagram, explain how time constant of RL and RC circuits are obtained.	L1	6	1-6, 11-12
v.	Give the circuit diagram of LCR circuits for both series and parallel circuits and explain how the resonance, power dissipation, quality factor and bandwidth are obtained for the same.	L2	6	1-6, 11-12
vi.	Give the construction and working of the Ballistic Galvanometer.	L2	7	1-6, 11-12
vii.	What is current and charge sensitivity of a Ballistic Galvanometer?	L2	7	1-6, 11-12
viii.	Higher order problems.	L3	6,7	1-6, 11-12

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self-Directed Learning etc.

Formative Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities

Activity No. 9	Design a working model of an electrical oscillator which acts as a transmitter.
Activity No. 10	Design a working model of an electrical oscillator which acts as a receiver.
Activity No. 11	Model the earth's magnetic field with a diagram. Explain the effect of the tilt of the earth's axis and the reasons for the change in the tilt of the earth's axis over thousands of years.

Textbooks				
Sl No	**Title of the Book**	**Authors Name**	**Publisher**	**Year of Publication**
1	Physics-Part-II,	David Halliday and Robert Resnick	Wiley Eastern Limited	2001
2	Berkeley Physics Course, Vol-2, Electricity and Magnetism, Special Edition	Edward M Purcell	Tata Mc Graw-Hill Publishing Company Ltd, New Delhi	2008

References Books				
Sl No	**Title of the Book**	**Authors Name**	**Publisher**	**Year of Publication**
1	Electricity, Magnetism & Electromagnetic Theory	S. Mahajan and Choudhury	Tata Mc Graw-Hill Publishing Company Ltd, New Delhi	2012
2	Electricity and Magnetism	Edward M. Purcell	Tata Mc Graw-Hill Publishing Company Ltd, New Delhi	1986
3	Introduction to Electrodynamics(3rd Edition)	D.J. Griffiths Benjamin Cummings.	Prentice Hall	1998
4	Feynman Lectures Vol.2	R.P.Feynman, R.B.Leighton, M. Sands	Pearson Education	2008
5	Elements of Electromagnetics	M.N.O. Sadiku	Oxford University Press.	2010
6	Electricity and Magnetism	J.H.Fewkes&Yearwood. Vol. I,	Oxford University Press.	1991

Formative Assessment	
Assessment	**Marks**
C1: Internal Assessment	10
C1: REU Project	10
C2: Activity	10
C2: Presentation (Oral or Poster)	10
Total	40

List of Experiments to be performed in the Laboratory **Note:** Minimum EIGHT experiments have to be carried out.	
1.	Experiments on tracing of electric and magnetic flux lines for standard configuration.
2.	Determination of components of earth's magnetic field using a Ballistic galvanometer.

3.	Determination of capacitance of a condenser using B.G.
4.	Determination of high resistance by leakage using B.G.
5.	Determination of mutual inductance using BG.
6.	Charging and discharging of a capacitor (energy dissipated during charging and time constant measurements.
7.	Series and parallel resonance circuits (LCR circuits).
8.	Impedance of series RC circuits- determination of frequency of AC.
9.	Study the characteristics of a series RC and RL Circuit.
10.	Determination of self-inductance of a coil.
11.	Verification of laws of combination of capacitances and determination of unknown capacitance using De - Sauty bridge.
12.	Determination of B_H using Helmholtz double coil galvanometer and potentiometer.

OPEN-ELECTIVE SYLLABUS:

Year	I	**Course Code: 21BSC2O2PHY2**	**Credits**	03
Sem.	2	**Course Title:** OPTICAL INSTRUMENTS	**Hours**	40
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	

Unit No.	**Course Content**
Unit I	**Basics of Optics** Scope of optics, optical path, laws of reflection and refraction as per Fermat's principle, magnifying glass, Lenses (thick and thin), convex and concave lenses, Lens makers formulae for double concave and convex lenses, lens equation. **(10 hours)**
Unit II	Focal and nodal points, focal length, image formation, combination of lenses, dispersion of light: Newton's experiment, angular dispersion and dispersion power. Dispersion without deviation. (Expressions need not be derived, but have to be discussed qualitatively). **(10 hours)**
Unit III	**Camera and microscopes** Human eye (constitution and working), Photographic camera (principle, construction and working),construction, working and utilities of Simple microscopes, Compound microscope, Electron microscopes, Binocular microscopes **(10 hours)** **Self study** Experimental determination of magnifying power of a microscope. (Construction part can be discussed through block diagrams)
Unit IV	**Telescopes and Spectrometer** Construction, working and utilities of Astronomical telescopes

	Terrestrial telescopesReflecting telescopes,Construction, working and utilities of Eyepieces or Oculars (Huygen, Ramsden's, Gauss) Spectrometer - Construction, working and utilities, measurement of refractive index. **(10 hours)Self study** Telescopes used at different observatories in and outside India.Hydropower resources, hydropower technologies, environmental impact of hydro power sources. Carbon captured technologies, cell, batteries, power consumption
	Activities: 1) Find position and size of the image in a magnifying glass and magnification. 2) Observe rain bows and understand optics. 3) Create a rainbow. 4) Find out what makes a camera to be of good quality. 5) Observe the dispersion of light through prism. 6) Make a simple telescope using magnifying glass and lenses. 7) Learn principle of refraction using prisms. 8) Check bending of light in different substances and find out what matters here. 9) Learn about different telescopes used to see galaxies and their ranges. Many more activities can be tried to learn optics by going through you tubes and webistes such as https://spark.iop.org, http://www.yenka.com, https://publiclab.org etc.

Syllabus of III Semester Physics

Program Outcomes:	
1.	Disciplinary knowledge
2.	Communication Skills
3.	Critical thinking, Reflective thinking, Analytical reasoning, Scientific reasoning
4.	Problem-solving
5.	Research-related skills
6.	Cooperation/ Teamwork/ Leadership readiness/Qualities
7.	Information/ Digital literacy/Modern Tool Usage
8.	Environment and Sustainability
9.	Multicultural competence
10.	Multi-Disciplinary
11.	Moral and ethical awareness/Reasoning
12.	Lifelong learning / Self-Directed Learning

Course Content Semester – III Wave Motion and Optics	
Course Title: Wave Motion and Optics	Course Credits:4
Total Contact Hours: 52	Duration of ESA: 3 hours
Formative Assessment Marks: 40	Summative Assessment Marks: 60
Model Syllabus Authors: Physics Expert Committee	

Prerequisites	
i.	Fundamentals of waves

Course Learning Outcomes	
At the end of the course students will be able to:	
i.	Identify different types of waves by looking into their characteristics.
ii.	Formulate a wave equation and obtainthe expression for different parameters associated with waves.
iii.	Explain and give a mathematical treatment of the superposition of waves under different conditions, such as, when they overlap linearly and perpendicularly with equal or different frequencies and equal or different phases.
iv.	Describe the formation of standing waves and how the energy is transferred along the standing wave in different applications, and mathematically model in the case of stretchedstring and vibration of a rod.

v.	Give an analytical treatment of resonance in the case of open and closed pipes in general and Helmholtz resonators in particular.
vi.	Describe the different parameters that affect the acoustics in a building, measure it and control it.
vii.	Give the different models of light propagation and phenomenon associatedand measure the parameters likethe wavelength of light using experiments like Michelson interferometer, interference and thin films.
viii.	Explain diffraction due to different objects like singles slit, two slits, diffraction of grating, oblique incidence, circular aperture and give the theory and experimental setup for the same.
ix.	Explain the polarization of light and obtain how the polarization occurs due to quarter wave plates, half wave plates, and through theoptical activity of a medium.

Course Articulation Matrix

Mapping of Course Outcomes (CO) Program Outcomes

CourseOutcomes/ProgramOutcomes		1	2	3	4	5	6	7	8	9	10	11	12
i.	Identify different types of waves by looking into their characteristics.	X	X	X	X	X	X					X	X
ii.	Formulate a wave equation and obtainthe expression for different parameters associated with waves.	X	X	X	X	X	X					X	X
iii.	Explain and give a mathematical treatment of the superposition of waves under different conditions such as when they overlap linearly and perpendicularly with equal or different frequencies and equal or different phases.	X	X	X	X	X	X					X	X
iv.	Describe the formation of standing waves and how the energy is transferred along the standing wave in different applications, and mathematically model in the case of stretched string and vibration of a rod.	X	X	X	X	X	X					X	X
v.	Give an analytical treatment of resonance in the case of open and closed pipes in general and Helmholtz resonators in particular.	X	X	X	X	X	X					X	X
vi.	Describe the different parameters that	X	X	X	X	X	X					X	X

	affect the acoustics in a building,measure it and control it.												
vii.	Give the different models of light propagation and phenomenon associatedand measure the parameters likethe wavelength of light using experiments like Michelson interferometer, interference and thin films.	X	X	X	X	X	X					X	X
viii.	Explain diffraction due to different objects like singles slit, two slits, diffraction grating, oblique incidence, circular aperture and give the theory and experimental setup for the same.	X	X	X	X	X	X					X	X
ix.	Explain the polarization of light and obtain how the polarization occurs due to quarter wave plates, half wave plates, and through the optical activity of a medium.	X	X	X	X	X	X					X	X

Wave Motion and Optics

Unit – 1 -Waves and Superposition of Harmonic Waves

The Portion to be Covered

Waves: Plane and Spherical Waves. Longitudinal and Transverse Waves. Characteristics of wave motion, Plane Progressive (Travelling) Wave and its equation, Wave Equation – Differential form (derivation). Particle and Wave Velocities: Relation between them, Energy Transport – Expression for intensity of progressive wave, Newton's Formula for Velocity of Sound. Laplace's Correction (Derivation). **(6 Hours)**

Superposition of Harmonic Waves : Linearity and Superposition Principle. Superposition of two collinear oscillations having (1) equal frequencies and (2) different frequencies .Concept of Beats and its analytical treatment. Superposition of two perpendicular Harmonic Oscillations: Lissajous Figures with equal and unequal frequency- Analytical treatment. Uses of Lissajous' figures. Problems **(7 Hours)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	Explain the difference between plane and spherical	**L2**	**1**	**1-6, 11-12**

	waves,longitudinal and transverse waves and give their characteristics.			
ii.	Write down an equation for the progressive wave in its differential form.	**L2**	**1**	**1-6, 11-12**
iii.	Obtain the relation between particle and wave velocity.	**L2**	**1**	**1-6, 11-12**
iv.	Obtain an expression for intensity of progressive waves.	**L2**	**1**	**1-6, 11-12**
v.	Obtain Newton's formula for the velocity of sound and discuss the factors for which sound velocity is dependent.	**L2**	**2**	**1-6, 11-12**
vi.	Apply the Laplace's correction to the equation of motion of a progressive wave.	**L2**	**2**	**1-6, 11-12**
vii.	With examples explain ripple and gravity waves.	**L1**	**2**	**1-6, 11-12**
viii.	Give the theory of superposition of two linear waves having equal frequencies and different frequencies.	**L2**	**3**	**1-6, 11-12**
ix.	Discuss the formation of different Lissajousfigures under different conditions of amplitude and frequency when they superimpose perpendicularly.	**L2**	**3**	**1-6, 11-12**
x.	Give some applications of an Lissajousfigures.	**L1**	**3**	**1-6, 11-12**
xi.	Higher order problems.	**L3**	**1,2,3**	**1-6, 11-12**

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self-DirectedLearning etc

Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities

Activity No. 1	We know that sound is produced because of vibration. Look into at least 10 musical instruments and identify the regions of vibrations that produces the sound and those parts which enhances the sound because of reverberation. 1. Identify one common element in all of these. 2. Identify equipment's which creates beats and try to explain the underlying basic principles. Demonstrate the examples of beats using two tuning forks. 3. Identify what will happen when you drop a stone in a standing water,

	and when your drop two stones side by side. 4. Make your observations sketch them and comment on it in a report.
Activity No. 2	Draw two sine waves (Amplitude vs time) one shifted with other in phase. Identity where the resonation occurs for each phase shift. Plot phase vs time taken for resonance.
Activity No. 3	Take smooth sand, place a pointed edged pen vertically on the sand. To the mid of the pen, connect two perpendicular threads. Pull these perpendicular threads by varying the forces and timings. Note down the different shapes produced on the sand. Try to interpret the shapes. Make a report of it
Activity No. 4	Hang a pot with sand, which has a hole in the bottom. Gently pull the pot on one side and observe the pattern formed by the sand on the floor. Report the observations.
Activity No. 5	Design a coupled pendulum. Study the impact of the motion of one pendulum over the other pendulum by varying the length, direction of the motion of one pendulum and mass of pendulum and observe the resultant changes. Trace the path of the bobs and make a report.
Activity No. 6	**Note for the teachers for the activity:** Make 3 groups among students and assign each group the activity of drawing one of the 3 graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks. 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. **Activity:** Take a stretched spring. Stretch it across two edges. Put a weight on the string, pluck it and measure the amplitude of the vibration. All group will measure the total damping time of oscillating spring. (Using mobile or scale) And plot a graph of the- 1. Varying load on the spring and amplitude at the centre. 2. Take another weight and put that in another place and measure the amplitude of vibration at the centre. 3. Vary the load in the centre of the spring and measure the amplitude at the centre.

Wave Motion and Optics

Unit – 2 - Standing Waves and Acoustics

The Portion to be Covered

Standing Waves : Velocity of transverse waves along a stretched string (derivation), Standing (Stationary) Waves in a String - Fixed and Free Ends (qualitative). Theory of Normal modes of vibration in a stretched string, Energy density and energy transport of a transverse wave along a stretched string. Vibrations in rods – longitudinal and transverse modes (qualitative). Velocity of Longitudinal Waves in gases (derivation). Normal Modes of vibrations in Open and Closed Pipes – Analytical treatment. Concept of Resonance, Theory of Helmholtz resonator. Problems **(7 Hours)**

Acoustics:

Concept of sound, properties of sound, Musical sound and noises, Characteristic of musical sound,Distingustion between music and noise ,Intensity and loudness of sound-decibels. Intensity level- musical note and scale.Acoustics of building: Reverberation and time of reverberation-absorption coefficient. Derivation of Sabine's formula. Measurement of reverberation time. Acoustic aspects of hall and auditorium.**Problems (6 Hours)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	Discuss the Transverse waves produced in stretched string and obtain the expression for the same.	L2	3	1-6, 11-12
ii.	Give a qualitative treatment of vibration of a string when it's both ends are fixed and free.	L2	3	1-6, 11-12
iii.	Explain normal modes of a stretched string.Obtain an expression for the energy density and discuss how this energy is transported along a stretched string.	L2	3	1-6, 11-12
iv.	Quantitatively bring about the mode of vibrations created in a rod.	L2	4	1-6, 11-12
v.	Explain types of waves that are produced in gas.Obtain an expression for the same.	L2	4	1-6, 11-12
vi.	With an analytical treatment explain the concept of resonance using the normal modes of vibrations of open and closed pipes.	L2	5	1-6, 11-12
vii.	Give the theory of Helmholtz resonator and explain how it is used to calculate some parameters of the way the standing waves are set in there.	L2	5	1-6, 11-12

viii.	Define Reverberation,Reverberation time and absorption coefficient of a material.	**L1**	**5**	**1-6, 11-12**
ix.	Obtain Sabine'sReverberation formula and discuss what are the factors on which the Reverberation timedepends on.	**L2**	**5**	**1-6, 11-12**
x.	List out which are different parameters within a building which effects the acoustics.	**L1**	**6**	**1-6, 11-12**
xi.	Explain what are good acoustics of a building and how acoustics is measured in terms of intensity and pressure inside a building.	**L2**	**6**	**1-6, 11-12**
xii.	Higher order problems.	**L3**	**4,5,6**	**1-6, 11-12**

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self-Directed Learning etc.

Formative Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities

Activity No. 7	List different phenomenon where standing waves are found in nature. Identify the phenomena and reason for standing waves. Also identify the standing waves in musical instruments. Make a report of it**.**
Activity No. 8	1. Go to 5 different newly constructed houses when they are not occupied and when they are occupied. Make your observations on sound profile on each room. Give the reasons. Make a report of it**.** 2. Visit three very good auditoriums, list out different ways in which the acousticarrangements have been done (as decoration and Civil works). Look for the reasons in Google and identify which is acoustically the best auditorium among the three you visited. Make a report of it**.**
Activity No. 9	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks. 1. The first slide will explain the process of doing the experiment.

	2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. **Activity:** Take a bowl of different liquids (water, milk, kerosene, salt water, Potassium Permanganate (KMNO4) solution. Place a small non oily floating material (ex: thin plastic) on the surface of the liquid. Drop a marble on the liquid at the centre of the bowl. Repeat the experiment by dropping the marble from the different heights. Plot a graph of- 1. Height v/s time of oscillation 2. Weight of the marble v/s time of oscillation
Activity No. 10	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks. 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. **Activity:** Take two marbles of same weight. Drop both the marbles on the surface of the liquid from some height. With the help of the mobile take the picture and measure the position of interface of two wave fronts formed in the liquid. Plot graphs for different activities by doing the following activities. 1. By dropping two marbles of same weight from different heights. 2. By dropping two marbles of different weight from the same height

Wave Motion and Optics

Unit – 3 - Nature of light and Interference

The Portion to be Covered

Nature of light : Theories of light :- Newton's Corpuscular, Wave theory, Electromagnetic theory and Quantum theory of light.**(3 Hours)**

Interference of light by division of wave front: Huygens'sTheory-Concept of wave-front-Interference pattern produced on the surface of water-Coherence-Interference of light waves by division of wave-front- Young's double slit experiment- derivation of expression for fringe width-Fresnel Biprism- Interference with white light .Problems**(5 Hours)**

Interference of light by division of amplitude: Interference by division of amplitude-Interference by a plane parallel film illuminated by a plane wave-Interference by a film with two non-parallel reflecting surfaces- colour of thin films—Newton's rings due to reflected light and transmitted light -Michelson Interferometer-Determination of wavelength of light. Problems**(5 Hours)**

Topic Learning Outcomes **At the end of the topic, students should be able to:**				
SL No	**TLO's**	**BL**	**CO**	**PO**
i.	Explain using Michelson interferometer how to determine the wavelength of light.	**L2**	**7**	**1-6, 11-12**
ii.	Give an account of the different possible shapes that are obtained in Michelson interferometer experiment and their relevance.	**L2**	**7**	**1-6, 11-12**
iii.	Discuss the wave model and the Corpuscular model of light.	**L2**	**7**	**1-6, 11-12**
iv.	ExplainMaxwells electromagnetic waves.	**L2**	**7**	**1-6, 11-12**
v.	Give an account of the phenomenon of wave-particle duality.	**L1**	**7**	**1-6, 11-12**
vi.	Give the Huygens theory of wave-front.	**L1**	**7**	**1-6, 11-12**
vii.	DefineInterference.Give some examples of Interference.	**L1**	**7**	**1-6, 11-12**
viii.	Give the theory of interference due to two coherent sources of light and obtain an expression for the wavelength of monochromatic source of light (Young's double slit experiment)	**L2**	**7**	**1-6, 11-12**
ix.	Explain how using personal biprism,a monochromatic coherent source of light is obtained.Using this experimental setup explain how the wavelength of monochromatic sources of light is determined.	**L2**	**7**	**1-6, 11-12**
x.	Give the theory of interference due to division of amplitude by parallel and non-parallel plates.	**L1**	**7**	**1-6, 11-12**
xi.	Explain how Newton's rings are obtained and discuss how the wavelength of light is determined using this experiment.	**L2**	**7**	**1-6, 11-12**
xii.	Higher order problems.	**L3**	**7**	**1-6, 11-12**
Teaching and Learning Methodology				
Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.				
Formative Assessment Techniques				
One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc				
Suggested Activities				

Activity No. 11

In the table given below explore which phenomenon can be explained by what and make a report of it**.**

Sl No	Phenomenon	Particle of Light	Wave Nature	Dual Nature
	Pinhole camera			
1.	Formation of images on lenses			
2.	Formation of images on mirror			
3.	Interference			
4.	Polarization			
5.	Diffraction due to single slit			
6.	Black body radiation			
7.	Photoelectric effect			
8.	De-Broglie hypothesis			
9.	Devison&Germer Experiment			

Activity No. 12

Why colour strips are seen in paddles on roads in rainy seasons try to simulate the same. Give the reasons. Make a report of it**.**

Activity No. 13

Note for the teachers for the activity: Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks.

1. The first slide will explain the process of doing the experiment.
2. In the second slide. Students will show the graph of measurement.
3. In the third slide, they will list three observations from that study.

Activity: Take a bowl of different liquids (water, milk, kerosene, salt water, Potassium Permanganate (KMNO4) solution. Place a small non-oily floating material (ex: thin plastic) on the surface of the liquid. Drop two marbles of same weight (mass) from the same height on to the surface of the water but at the different time intervals. Plot graph for the different observations.

For teachers: Demonstrate the formation of Lissajous Figure using a CRO. Give different shapes of Lissajous Figure with varying frequency and amplitude. Ask the students to comment on the observations.

Wave Motion and Optics

Unit – 4 - Diffraction and Polarisation

The Portion to be Covered

Fresnel Diffraction- Fresnel's Diffraction. Half Period Zone using rectilinear propagation of light. Zone plate: Construction, theory and working. Comparison between zone plate and convex lens.Problems.**(3 Hours)**

Fraunhofer diffraction : Fraunhofer's diffraction at single slit. Diffraction grating. Theory of plane transmission grating. Resolving power. Rayleigh's criteria. Resolving power of prism. Resolving power of telescope. Resolving power of grating (qualitative).**Problems (5 Hours)**

Polarisation:

Transverse nature of light waves- plane of vibration and plane of polarisation. Malu's law. Double refraction. Positive and negative plates. Retardation plates: Quarter wave plate and half wave plate. Polaroids and its types, Production of Circular and elliptical polarization, Optical Activity: Fresnel's Theory of optical activity. Specific rotation,Determination of specific rotation of sugar solution using polarimeter.**Problems(5 Hours)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	DefineFraunhofer diffraction.	L2	8	1-6, 11-12
ii.	Give a qualitative treatment of single slit/diffraction double slit diffraction.	L2	8	1-6, 11-12
iii.	Explain the theory of diffraction due to grating and the normal and oblique incidence.	L2	8	1-6, 11-12
iv.	Explain how the resolving power of a grating depends of the number of slits used.	L2	8	1-6, 11-12
v.	Give the theory of Fresnel half period zones.	L2	8	1-6, 11-12
vi.	Discuss zone plates with respect to convex lenses.	L2	8	1-6, 11-12
vii.	Explain optical polarization and polaroid.	L2	9	1-6, 11-12
viii.	Give different types of polaroid.	L2	9	1-6, 11-12
ix.	Give the theory of phenomenon of double refraction and explain what are ordinary and extraordinary rays.	L2	9	1-6, 11-12
x.	Give the theory of quarter wave plates and half wave plates.	L2	9	1-6, 11-12
xi.	Explain optical activity with theory. Give an experimental method to measure the optical activity of a material.	L2	9	1-6, 11-12
xii.	Higher order problems.	L3	8,9	1-6, 11-12

Teaching and Learning Methodology	
Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self-Directed Learning etc.	
Assessment Techniques	
One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc	
Suggested Activities	
Activity No. 14	Explain polarization of light through a chart. List out the surfaces that reflect polarized light. Learn how polarization of light can be done by both transmission and reflection. Perform an experiment and make a report. USING CDs AND DVDs AS DIFFRACTION Gratings Ref:https://www.nnin.org/sites/default/files/files/Karen_Rama_USING_CDs_AND_DVDs_AS_DIFFRACTION_GRATINGS_0.pdf Obtain the diffraction spectra using a CD and design an experiment to find the distance between the tracks on it) (Ref: https://www.brighthubeducation.com/science-lessons-grades-9-12/39347-diffraction-experiment-measuring-groove-spacing-on-cds/, https://silo.tips/download/diffraction-from-a-compact-disk)
Activity No. 15	What is the physics behind making 3D movies? Group Discussion (https://www.slideserve.com/rae/physics-behind-3d-movies-powerpoint-ppt-presentation)Make a report of it**.**
Activity No. 16	List out different types of zone plates and look for their applications in day to day life. Make a report of it**.**
Activity No. 17	Collect information and study how optically polarizing lenses are made. Visit a nearby lens making facility. Learn the principle behind sunglasses.Make a report of it**.**
Activity No. 18	**Note for the teachers for the activity:** Make 3 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks. 1. The first slide will explain the process of doing the experiment.

	2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. **Activity:** Identify any 3 sharp edges of varying thickness and assign them to 3 groups. Shine a laser light pointing towards the edge of the needle. Observe the patterns formed on the wall or screen and measure the distance between the bands. Correlate the distance between the bands formed with the thickness of the edge and the distance from the edge to the screen. By this, calculate the wavelength of the laser light used.

Textbooks

Sl No	Title of the Book	Authors Name	Publisher	Year of Publication
1	The Physics of Waves and Oscillations,	N K Bajaj	Tata McGraw-Hill Publishing Company Ltd., Second Edition,	1984
2	Waves and Oscillations	N Subramanyam and Brij Lal	Vikas Publishing House Pvt. Ltd., Second Revised Edition	2010
3	A Text Book of Sound	D R Khanna and R S Bedi	Atma Ram & Sons, Third Edition	1952
4	Oscillations and Waves	Satya Prakash	PragathiPrakashan, Meerut, Second Edition	2003
5	Optics	AjoyGhatak	McGraw Hill Education (India) Pvt Ltd	2017
6	A text Book of Optics	Brij Lal, M N Avadhanulu& N Subrahmanyam	S. Chand Publishing	2012

References Books

Sl No	Title of the Book	Authors Name	Publisher	Year of Publication
1	Berkeley Physics Course – Waves,	Frank S Crawford Jr.	Tata Mc Graw-Hill Publishing Company Ltd., Special Indian Edition,.	2011
2	Optics	Eugene *Hecht*	Pearson Paperback	2019
3	Introduction To Optics	Pedrotti and Frank L ,	Pearson India	3rd Edition
4	Fundamentals of Optics	Francis Jenkins Harvey White	McGraw Hill Education	2017

Formative Assessment

Assessment	Marks
Internal Assessment	20

REU based Group Activity (Conduct,Report,Presentation)	20
Total	40

List of Experiments to be performed in the Laboratory Note: Minimum Eight experiments has to be performed	
1.	Velocity of sound through a wire using Sonometer.
2.	Frequency of AC using Sonometer.
3.	Study of Lissajous' Figures using CRO.
4.	Determination of frequency of tuning fork by transverse vibration using Melde's apparatus.
5.	Helmholtz resonator using tuning fork.
6.	Helmholtz resonator using electrical signal generator.
7.	To determine refractive index of the Material of a prism using sodium source.
8.	To determine the R P of telescope, compare the R P with theoretical value by Two Wire gauze.
9.	To determine the dispersive power of a prism using mercury source.
10.	To determine the wavelength of sodium source using Michelson's interferometer.
11.	To determine wavelength of sodium light using Fresnel Biprism.
12.	To determine wavelength of sodium light using Newton's Rings
13.	To determine the thickness of a thin paper by measuring the width of the interference fringes produced by a wedge-shaped Film.
14	To determine wavelength of (1) Na source and (2) Spectral lines of Hg source using plane diffraction grating.
15	To determine dispersive power of a plane diffraction grating.
16	To determine resolving power of a plane diffraction grating.
17	To determine the specific rotation of sugar solution-using Laurent's half shade polarimeter.

Reference Book for Laboratory Experiments

Sl No	Title of the Book	Authors Name	Publisher	Year of Publication
1	Advanced Practical Physics for students	B.L. Flint and H.T. Worsnop	Asia Publishing House.	1971
2	A Text Book of Practical Physics	I. Prakash & Ramakrishna	Kitab Mahal, 11th Edition	2011
3	Advanced level Physics Practicals	Michael Nelson and Jon M. Ogborn	Heinemann Educational Publishers, 4th Edition	1985
4	A Laboratory Manual of Physics for undergraduate classes	D.P.Khandelwal	Vani Publications.	1985

OPEN ELECTIVE SUBJEST

Year	2	**Course Code: 21BSC3O3PHY3**	**Credits**	03
Sem.	3	**Course Title: CLIMATE SCIENCE**	**Hours**	40
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	

Unit No.	**Course Content**
Unit I	**Atmosphere:** Atmospheric Science (Meteorology) as a multidisciplinary science. Physical and dynamic meteorology, Some terminology, difference between weather and climate, weather and climate variables, composition of the present atmosphere: fixed and variable gases, volume mixing ratio (VMR), sources and sinks of gases in the atmosphere. (10 hours)
Unit II	Green house gases. Structure (layers) of the atmosphere. Temperature variation in the atmosphere, temperature lapse rate, mass, pressure and density variation in the atmosphere. Distribution of winds. **Climate Science:** Overview of meteorological observations, measurement of: temperature, humidity, wind speed and direction and pressure. Surface weather stations, upper air observational network, satellite observation. Overview of clouds and precipitation, aerosol size and concentration, nucleation, droplet growth and condensation (qualitative description). (10 hours)
Unit III	Cloud seeding, lightning and discharge. Formation of trade winds, cyclones. Modelling of the atmosphere: General principles, Overview of General Circulation Models (GCM) for weather forecasting and prediction. Limitations of the models. R and D institutions in India and abroad dedicated to climate Science, NARL, IITM, CSIR Centre for Mathematical Modeling and Computer Simulation, and many more. (10 hours)
Unit IV	**Global Climate Change** Green house effect and global warming, Enhancement in concentration of carbon dioxide and other green house gases in the atmosphere, Conventional and non-conventional energy sources and their usage. EL Nino/LA Nino Southern oscillations. Causes for global warming: Deforestation, fossil fuel burning, industrialization. Manifestations of global warming: Sea level rise, melting of glaciers, variation in monsoon patterns, increase in frequency and intensity of cyclones, hurricanes, tornadoes. (10 hours)
	Activities to be carried out on Climate Science: 1. Try to find answer to the following questions: (a) Imagine you are going in a aircraft at an altitude greaten than 100 km. The air temperature at that altitude will be greater than 200^{o}C. If you put your hands out of the window of the aircraft, you will not feel hot. (b) What would have happened if ozone is not present in the stratosphere. 2. Visit a nearby weather Station and learn about their activities. 3. Design your own rain gauge for rainfall measurement at your place. 4. Learn to determine atmospheric humidity using wet bulb and dry bulb thermometers. 5. Visit the website of Indian Institute of Tropical Meteorology (IITM), and keep track of occurrence and land fall of cyclone prediction. 6. Learn about ozone layer and its depletion and ozone hole. 7. Keep track of melting of glaciers in the Arctic and Atlantic region through data base available over several decades. 8. Watch documentary films on global warming and related issues (produced by amateur film makers and promoted by British Council and BBC).

References:

1. Basics of Atmospheric Science – A Chndrashekar, PHI Learning Private Ltd. New Delhi, 2010.
2. Fundamentals of Atmospheric Modelling- Mark Z Jacbson, Cambridge University Press, 2000.

Syllabus of IV Semester Physics

Program Outcomes:	
13.	Disciplinary knowledge
14.	Communication Skills
15.	Critical thinking, Reflective thinking, Analytical reasoning, Scientific reasoning
16.	Problem-solving
17.	Research-related skills
18.	Cooperation/ Teamwork/ Leadership readiness/Qualities
19.	Information/ Digital literacy/Modern Tool Usage
20.	Environment and Sustainability
21.	Multicultural competence
22.	Multi-Disciplinary
23.	Moral and ethical awareness/Reasoning
24.	Lifelong learning / Self-Directed Learning

Course Content Semester – IV

Thermal Physics and Electronics

Course Title: Thermal Physics and Electronics	Course Credits:4
Total Contact Hours: 52	Duration of ESA: 3 hours
Formative Assessment Marks: 40	Summative Assessment Marks: 60
Model Syllabus Authors: Physics Expert Committee	

Prerequisites

viii.	Study of Pre-University

Course Learning Outcomes

At the end of the course students will be able to:

vii.	Apply the laws of thermodynamics and analyzethe thermal system.
viii.	Apply the laws of kinetic theory and radiation laws to the ideal and practical thermodynamics systems through derived thermodynamic relations.
ix.	Use the concepts of semiconductors to describe different Semiconductor devices such as diode transistors, BJT, FET etc and explain their functioning.
x.	Explain the functioning of OP-AMPS and use them as the building blocks of logic gates.
xi.	Give the use of logic gates using different theorems of Boolean Algebra followed by logic circuits.

Course Articulation Matrix

Mapping of Course Outcomes (CO) Program Outcomes

CourseOutcomes/ProgramOutcomes		1	2	3	4	5	6	7	8	9	10	11	12
i	Apply the laws of thermodynamics and analyze the thermal system.	X	X	X	X	X	X					X	X
ii	Apply the laws of kinetic theory and radiation laws to the ideal and practical thermodynamics systems through derived thermodynamic relations.	X	X	X	X	X	X					X	X
iii	Use the concepts of semiconductors to describe different Semiconductor devices like diode transistors, BJT, FET etc and explain their functioning.	X	X	X	X	X	X					X	X
iv	Explain the functioning of OP-AMPS and them as the building blocks of logic gates.	X	X	X	X	X	X					X	X
v	Give the use of logic gates using different theorems of Boolean Algebra followed by logic circuits.	X	X	X	X	X	X					X	X

Thermal Physics and Electronics

Unit – 1

The Portion to be Covered

Laws of Thermodynamics:

Review of the concepts of Heat and Temperature. **(1 Hours)**

First Law of Thermodynamics: Differential form, Internal Energy. Equation of state for an adiabatic process, Work Done during Isothermal and Adiabatic Processes. **(2 Hours)**

Second Law of Thermodynamics: Kelvin-Planck and Clausius Statements and their Equivalence. Reversible and Irreversible processes with examples. Concept of Entropy, Change of Entropy in reversible and irreversible process, Refrigeration & coefficient of performance, T-S diagram, Second Law of Thermodynamics in terms of Entropy. Problems **(5 Hours)**

Third Law of Thermodynamics: Statement, Significance and Unattainability of Absolute Zero.

Heat Engines: Carnot engine, Otto and Diesel engines, Derivation for efficiency of Otto and Diesel engines. Applications of Carnot engine in locomotion, Thermodynamic Scale of Temperature and its Equivalence to Perfect Gas Scale. Problems**(5 Hours)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	Explain the first law of thermodynamics.	L1	1	1-6,11-12
ii.	Give the differential form of the first law of thermodynamics and define what is the internal energy.	L2	1	1-6,11-12
iii.	Obtain an expression for work done in isothermal and adiabatic processes.	L2	1	1-6,11-12
iv.	Give two systems of units of temperature measurement and give their equivalence.	L2	1	1-6,11-12
v.	Describe and Discuss heat engine based on Carnot cycle.	L2	1	1-6,11-12
vi.	Explain how the efficiency of refrigeration is measured?	L2	1	1-6,11-12
vii.	Detail out the application of the Carnot engine to a locomotion system.	L1	1	1-6,11-12
viii.	Define entropy and write an expression for entropy using the second law of thermodynamics.	L2	1	1-6,11-12
ix.	State the third law of thermodynamics and give its significance using the third law of thermodynamics describing why absolute zero temperature is not unattainable.	L2	1	1-6,11-12
x.	High Order Problems.	L3	1	1-6,11-12

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self-Directed Learning etc.

Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities

Activity No. 1	I feel cold because coldness enters my body. Discuss the statement in day-to-day life. Approximately give examples of a) open system b) closed system and c) isolated system Discuss when the temperature of the body is locked until what time you hold the thermometer in contact with a body. Discuss it in contact with laws of thermodynamics.

	Discuss why when a person works or does exercise, he sweats. Reason it with the laws of thermodynamics.
Activity No. 2	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks. 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. **Activity:** Take four different sizes of same metal, preferable of same shape and give one piece to each group. Heat it uniformly on a hot plate. Keep a beaker of water with a thermometer immersed in it. Drop one hot metal into the water and record the temperature with time. Repeat the experiment for the other heated metal pieces of different sizes. 1. Plot a graph for the volume of the metal piece used v/s respective temperature change observed. 2. Determine the heat capacity and specific heat of the metal used. All groups shall also do the following activity:
Activity No. 3	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks. 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. **Activity:** Take ice cubes of different size and immerse in water and measure the temperature change with time and repeat the experiment. Graph the observations.

Thermal Physics and Electronics

Unit – 2

The Portion to be Covered

Thermodynamic Potentials: Internal Energy, Enthalpy, Helmholtz Free Energy, Gibb's Free Energy. Properties and Applications. **(2 Hours)**

Maxwell's Thermodynamic Relations: Derivations and applications of Maxwell's Thermodynamic Relations (1) First order Phase Transitions with examples, Clausius - Clapeyron

Equation (2) Values of Cp-Cv (3)Joule-Thomson Effect and Joule-Thomson coefficient and derive an equation for Vander Walls gas. Attainment of low temperature by liquefaction of gases and adiabatic demagnetization. Problems **(4 Hours)**

Kinetic Theory of Gases: Distribution of Velocities: Maxwell-Boltzmann Law of Distribution of Velocities in an Ideal Gas: Mean, RMS and Most Probable Speeds. Degrees of Freedom, Law of Equipartition of Energy. Specific heats of Gases. Problems **(4 Hours)**

Radiation: Blackbody radiation, spectral distribution, the concept of energy density and pressure of radiation, Wien's law, Wien's displacement law,Stefan-Boltzmann law, Rayleigh-Jeans law, and Planck's law of radiation. Problems**(3 Hours)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	State Maxwell relations.	L1	2	1-6, 11-12
ii.	Give examples where Maxwells relations are used.	L1	2	1-6, 11-12
iii.	Explain the phase transition. Which is called as first order phase transition? Give Examples	L2	2	1-6, 11-12
iv.	State Clausius - Clapeyron Equation.	L1	2	1-6, 11-12
v.	Obtain an equation for difference in C_P - C_V.	L2	2	1-6, 11-12
vi.	State Joule-Thomson effect and Joule-Thomson coefficient.	L1	2	1-6, 11-12
vii.	Obtain an expression, giving the relation between pressure, volume and temperature for a real gas (Vander Waals gas).	L2	2	1-6, 11-12
viii.	Explain adiabatic demagnetization and how it is used to obtain low temperature by the liquidation of gases?	L2	2	1-6, 11-12
ix.	State Maxwell-Boltzmann Law of Distribution of Velocities in Ideal gases.	L1	2	1-6, 11-12
x.	Explain the mean RMS and most probable speeds in ideal gases.	L1	2	1-6, 11-12
xi.	Explain degrees of freedom associated with particles in an ideal gas?	L2	2	1-6, 11-12
xii.	Define the specific heat of a gas.	L1	2	1-6, 11-12
xiii.	Explain black body radiation and its spectral distribution.	L1	2	1-6, 11-12
xiv.	Explain the different laws used to describe different parts of the curves of a spectral distribution of black body radiation.	L2	2	1-6, 11-12
xv.	Define ultraviolet radiation catastrophe? Discuss its importance in the explanation of black body radiation.	L2	2	1-6, 11-12

xvi.	Define Planck's law of radiation and discuss how it could describe the whole black body radiation curve.	**L2**	**2**	**1-6, 11-12**
xvii	High Order Problems.	**L3**	**2**	**1-6, 11-12**

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self-Directed Learning etc.

Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities

Activity No. 4	1. Measuring the Solar Constant Materials: Simple flat sided Jar and Thermometer. Activity: Bottle containing water is exposed to solar radiation. The rise in temperature and time taken are noted. Calculate the heat absorbed by water and relate it to the output of the Sun. 2. Thermo emf Materials: Suitable two dissimilar metal wires, voltage measuring device. Activity: In this experiment student will assemble the thermocouple and study the three effects namely, See beck, Peltier, and Thompson. 3. Inverse square law of radiation Materials: A cardboard with a grid, cardboard with a hole, supporting clips, a ruler, candle. 4. Activity: Students set the device. They count the lighted squares on the cardboard with the grid by varying the distance. And make necessary measurements and calculations to arrive at the inverse square law of radiation. Ref: Activity Based Physics Thinking Problems in Thermodynamics: Kinetic Theory http://www.physics.umd.edu/perg/abp/think/thermo/kt.htm
Activity No. 5	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks. 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement.

	3. In the third slide, they will list three observations from that study. **Activity:** Take two dissimilar metal wires. Spot weld them forming two junctions. Dip one junction in ice and heat the other junction with a burner. Plot a graph of time of heating v/s Thermo EFM generated in the voltmeter.
Activity No. 6	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks. 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. **Activity:** Make 4 groups and give different-sized balloons to each group.Fit different-sized nozzles into the mouth of the large balloons. Measure the temperature or the EMF generated using a thermocouple placed at the mouth of the nozzle as the pressurised gas is released. Plot a graph of time v/s temperature. Vary the volume of the balloon and repeat the experiment. Plot the graph of volume v/s temperature difference created.

Thermal Physics and Electronics

Unit – 3

The Portion to be Covered

Semiconductor devices: Semiconductor and its types, doping, Intrinsic and Extrinsic semiconductors, semiconductor diode (p-n junction) and its V-I Characteristics (Forword & Reverse).

Rectifier: Rectifications, Half-wave rectifier, Full-wave rectifier-i) Full wave centre tap ii) Full wave Bridge(Qualitative). Comparison between them.

Filters: Capacitor filter, Inductor filter, LC filter, π - section filter(study of waveforms-qualitative),Comparison between them.

Zener diode:V-I Characteristics, Explanation of Zener Breakdown mechanism(Avalanche& Zener).Voltage regulator -Zener diode used as voltage regulator using unregulated DC voltage bridge rectifier.Problems**(6 hours)**

Junction Transistors: Basics of Bipolar Junction (BJT), types of transistors, construction and operation transistors, Transistor configuration , Common Base, Common Emitter and Common Collector Characteristics, h-parameters ofatransistor andtheirdetermination usingCEconfiguration,Transistor as an Amplifier (CE) with frequency response .

Feedback:-Feedback and types of feedback.

Oscillators:-Oscillators and its types, Essentials of a feedback LC oscillator. Hartley and Phase

shift oscillators, Comparison between amplifier and oscillator.

Field Effect Transistor (FET): FET-Types, characteristics and parameters, Relation between FET parameters. FET as a common source amplifier (Qualitative).Problems**(7hours)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	DefineSemiconductors and Band Gap. Explain on what basis they are classified as intrinsic and extrinsic.	L2	3	1-6, 11-12
ii.	Define PN junction.Explain its functioning in forward and reverse bias.	L1	3	1-6, 11-12
iii.	Explain the approximation used in a real diode with respect to an ideal PN Junction?	L2	3	1-6, 11-12
iv.	With a schematic diagram, explain half wave and full wave rectifiers.	L1	3	1-6, 11-12
v.	Define a Zener diode and explain how it is different from an ordinary diode usingV-I curves?	L2	3	1-6, 11-12
vi.	With the schematic diagram, explain the working of voltage regulators of different types using a Zener diode.	L1	3	1-6, 11-12
vii.	Give the basic concepts used in the instruction of bipolar junction transistor and its operation.	L1	3	1-6, 11-12
viii.	Compare the V-I curve of common base common emitter and common collector BJT curves while explaining their working principles.	L2	3	1-6, 11-12
ix.	Define FET? Give its characteristics.	L1	3	1-6, 11-12
x.	Explain how a transistor can be used as an amplifier and an oscillator using a circuit diagram.	L2	3	1-6, 11-12
xi.	High Order Problems.	L3	3	1-6, 11-12

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self-Directed Learning etc.

Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities	
Activity No. 7	a. Activity: Wire a DC power supply on a bread board or groove board to give a regulated output voltage of + 5 V; +15 V; Dual power output : ± 5 V; Dual power output : ± 15 V b. Use: 3-pin regulators c. Learn to identify the terminals of different types (packages) of BJTs. d. In the case of power transistors, learn how to fix a heat sink for the transistor. e. Understand the concept of virtual ground of an OP-AMP. f. Learn the different types of op-amps used for different applications. What is a buffer? Prepare a report on the application of buffers in instrumentation electronics. Seeing ½ wave of a full wave verification on a bread board.
Activity No. 8	(i)Learn to identify the terminals of different types (packages) of BJTs. (ii)In the case of power transistors, learn how to fix a heat sink for the transistor. (iii) Learn the difference between BJT and FET in its operational characteristics.
Activity No. 9	**Build your own Regulated DC power supply (5V)** Components required: 1.Step down transformer- 1 No. (5 V tapping, 100 – 500 mA current rating), BY 127 semiconductor diodes – 4 Nos, Inductor -1, Capacitor - 1, 3 pin 5V regulator-1 Wire a DC power supply on a bread board or groove board to give a regulated output voltage of + 5 V. Search for circuit diagram in books/net.
Activity No. 10	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks. 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. **Activity:** Form 3 groups and tell them to make a DC supply of low current of different voltages like 5V, 10V, and 15V on a breadboard
Activity No. 11	**Note for the teachers for the activity:** Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and

	presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks. 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. **Activity:** Take any 3 diode and assign one to each group. Measure its resistance when dipped in ice and heating the ice till it boils. Using this data, plot calibration curve of temperature v/s resistance and also the cooling curve of temperature V/s time for the diode by each group.

Thermal Physics and Electronics

Unit – 4

The Portion to be Covered

Electronics: Integrated Circuits (Analog and Digital)and their types , Operational Amplifier: Block diagram of Op-Amplifier, symboland polarity convention, Characteristics of Op-Amp, Pin diagram of IC-741, Concept of virtual ground and summing point, Feedback concepts, Advantages of feedback, types of feedback, Expression for Gain; Op-Amp as a feedback amplifier– Non–Inverting and Inverting amplifier, Modification of input and output impedances with feedback; Differential amplifier with feedback;
Op-Amplifier Applications- Voltage Follower, Adder and Subtractor. Problems**(6 hours)**
Digital: Switching and Logic Levels, Digital Waveform. Number Systems: Decimal Number System, Binary Number System, Converting Decimal to Binary, Hexadecimal Number System: Converting Binary to Hexadecimal, Hexadecimal to Binary. Problems**(4 hours)**

Boolean Algebra Theorems: Digital Circuits: Logic gates, NOT Gate, AND Gate, OR Gate, NAND Gate,IC-7400 Pin diagram, NOR Gate, Algebraic Simplification, Implementation of NAND and NOR functions. Boolean algebra, Truth tables, De- Morgan's theorems.Problems**(3 hours)**

Topic Learning Outcomes
At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	Define op-amps and give the characteristics of an ideal op-amp.	L1	4	1-6, 11-12
ii.	Explains an inverting and non-inverting configuration of typical op-amps, with a schematic diagram.	L2	4	1-6, 11-12
iii.	Explain how op-amps can be used as a voltage follower, with a schematic diagram and with relevant expressions.	L2	4	1-6, 11-12
iv.	Explain how op-amps can be used as a voltage follower, adder and subtractor, with a schematic diagram and with relevant expressions.	L2	4	1-6, 11-12
v.	Give different digital wave forms and explain how one can	L1	5	1-6, 11-12

	visualize the switching and logic levels.			
vi.	Write any four-digit numbers other than zero in the decimal number system and convert that into binary and hexadecimal.	**L2**	**5**	**1-6, 11-12**
vii.	Write any number in a Binary System of 8 digits other than zero and convert it into decimal and hexadecimal.	**L2**	**5**	**1-6, 11-12**
viii.	Write any number in the hexadecimal system of 4 digits other than zero and converted it into a binary and decimal number.	**L2**	**5**	**1-6, 11-12**
ix.	Give simplified diagram for a given Boolean circuit diagram of logic gates, and verify using the De-Morgans theorem.	**L2**	**5**	**1-6, 11-12**
x.	Why are X-NOR gates called Universal Gates?	**L2**	**5**	**1-6, 11-12**
xi.	High Order Problems.	**L3**	**4, 5**	**1-6, 11-12**

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self-Directed Learning etc.

Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities

Activity No. 12	Learn how to implement logic functions (AND, OR, NOT) using just diodes and resistors. With a circuit diagram show how different types of gates can be built by X-NOR gates.
Activity No. 13	**Operational Amplifiers** (i)Understand the concept of virtual ground of an OP-AMP. (ii)Learn the different types of op-amps used for different applications. (iii)What is a buffer? Prepare a report on buffers and its application in instrumentationelectronics.
Activity No. 14	**Activity**A man has to take a wolf, a goat, and some cabbage across a river. His rowboat has enough room for the man plus either the wolf or the goat or the cabbage. If he takes the cabbage with him, the wolf will eat the goat. If he takes the wolf, the goat will eat the cabbage. Only when the man is present are the goat and the cabbage safe from their enemies. All the same, the man carries

	wolf, goat, and cabbage across the river. How? Write the truth table for the above story and implement using gates. **Activity**A locker has been rented in the bank. Express the process of opening the locker in terms of digital operation. **Activity** A bulb in a staircase has two switches, one switch being at the ground floor and the other one at the first floor. The bulb can be turned ON and also can be turned OFF by and one of the switches irrespective of the state of the other switch. The logic of switching of the bulb resembles.

Textbooks	
Sl No	**Title of the Book**
1.	Electronic Devices and Circuits, David A. Bell, 2004, PHI, New Delhi
2.	Integrated Electronics, Jacob Millman and CC Halkias
3.	Digital Fundamentals, Floyd, 2001, PHI, New Delhi

References Books	
Sl No	**Title of the Book**
1.	Heat and Thermodynamics, M.W. Zemansky, Richard Dittman, 1981, McGraw-Hill.
2.	Thermal Physics, S. Garg, R. Bansal and Ghosh, 2nd Edition, 1993, Tata McGraw-Hill
3.	A Treatise on Heat, MeghnadSaha, and B.N.Srivastava, 1958, Indian Press
4.	Modern Thermodynamics with Statistical Mechanics, Carl S. Helrich, 2009, Springer.
5.	Thermodynamics, Kinetic Theory & Statistical Thermodynamics, Sears & Salinger. 1988, Narosa.
6.	An Introduction to Thermal Physics, Daniel V Schroeder, 2020, Oxford University Press

Formative Assessment	
Assessment	**Marks**
Internal Assessment	20
REU based Group Activity (Conduction, Report, Presentation)	20
Total	40

List of Experiments to be performed in the Laboratory **Note:** Minimum Eight experiments to be carried out	
1.	Mechanical Equivalent of Heat, J by Electrical method.
2.	Coefficient of thermal conductivity of Copper by Searle's apparatus.
3.	Coefficient of thermal conductivity of a bad conductor by Lee and Charlton's disc method.
4.	Determination of Stefan's constant/ Verification of Stefan's law.

5.	Variation of thermo-emf across two junctions of a thermocouple with temperature.
6.	Verification of Clausius –Clapeyron equation and determination of specific enthalpy.
7.	V-I Characteristics of Silicon & Germanium PN Junction diodes (FB & RB)
8	Full -Wave bridge Rectifier Without Filter(internalresistance andvoltage regulation).
9	Full- Wave Rectifier bridge with π section Filter(internalresistance andvoltage regulation).
10.	Zenerdiode asvoltage regulatorusingbridge rectifierpowersupply.
11.	H- Parameter of transistor.
12.	Frequency response of CE Amplifier
13.	FET-staticcharacteristics and parameters.
14.	Frequency response of FET Amplifier.
15.	Non-inverting and Inverting using op-amp circuits.
16.	Adder and Subtractor using op-amp circuits.
17.	Realization of basic gates using NAND gate.
18.	Verification Boolean Algebra using NAND gate using IC-7400.
19.	Verification of De -Morgan's laws using IC-7400.

Reference Book for Laboratory Experiments	
Sl No	**Title of the Book**
1	Basic Electronics Lab (P242) Manual 2015-16, National Institute of Science Education andResearch,Bhubaneswar, 2015.
2	**Suggested Readings:** 1. B.L. Worsnop, H.T. Flint, "Advanced Practical Physics for Students", Methuen & Co., Ltd., London, 1962, 9e. 2. S. Panigrahi, B. Mallick, "Engineering Practical Physics", Cengage Learning India Pvt. Ltd., 2015, 1e.

OPEN ELECTIVE PAPER

Year	2	**Course Code: 21BSC4O4PHY4**	**Credits**	03
Sem.	4	**Course Title: ELECTRICAL INSTRUMENTS**	**Hours**	40
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	
Unit No.		**Course Content**		
Unit I		**Voltage and current sources**, Kirchoff's current and voltage laws, loop and nodal analysis of simple circuits with dc excitation. Ammeters,voltmeters: (DC/AC) **Representation of sinusoidal waveforms**, peak and rms values, power factor. Analysis of single-phase series and parallel R-L-C ac circuits. Three-phase balanced circuits, voltage and current relations in star and delta connections. Wattmeters: Induction type, single phase and three phase wattmeter, Energy meters: AC.		

	Induction type single phase and three phase energy meter . **(10 Hours)**
Unit II	**Instrument Transformers**: Potential and current transformers, ratio and phase angle errors, phasor diagram, methods of minimizing errors; testing and applications. **Galvanometers:** General principle and performance equations of D'Arsonval Galvanometers, Vibration Galva nometer and Ballistic Galvanometer. **Potentiometers:** DCPotentiometer, Crompton potentio meter, construction, standardization, application. AC Potentio meter, Drysdalepolarpotentio meter; standardization, application. **(10 Hours)**
Unit III	**DC/AC Bridges**: General equations for bridge balance, measurement of self inductance by Maxwell's bridge (with variable inductance & variable capacitance), Hay's bridge, Owen's bridge, measurement of capacitance by Schearing bridge, errors, Wagner's earthing device, Kelvin's double bridge. **Transducer:** Strain Gauges, Thermistors, Thermocouples, Linear Variable Differential Transformer (LVDT), Capacitive Transducers, Peizo-Electric transducers, Optical Transducer, Hall Effect Transducer . **(10 Hours)**
Unit IV	**CRO:** Block diagram, Sweep generation, vertical amplifiers, use of CRO in measurement of frequency,phase, Amplitude and rise time of a pulse. Digital Multi-meter: Block diagram, principle of operation. **Basics of lead acid batteries**, Lithium Ion Battery , Battery storage capacity, Coulomb efficiency, Numerical of high and low charging rates, Battery sizing. **(10 Hours)**
Activity No. 1	Identify variety of electrical switches and note down their applications/utility.
Activity No. 2	Identify the hazards involved in handling electrical circuits and instruments, make a list of safety precautions as well as first aid for electrical shocks.
Activity No. 3	Make a study of importance of grounding in electrical circuits.
Activity No. 4	Prepare a detailed account of various methods of earthing and their utility/applications
Activity No. 5	Prepare a document on evolution of incandescent bulbs to the present day LED lights
Activity No.6	Make a comparative study of Fuses, MCB, ELCB and Relays highlighting their use and applications
	Tex Books
	AK.Sawhney, ACourseinElec.&Electronics Measurements&Instrumentation **,Dhanpatrai& Co. 1978**
	A.D. Helfrick& W.D. Cooper, Modern Electronic Instrumentation and Measurement Techniques **PHI,2016**
	Reference Books
	D C Kulshreshtha, Basic Electrical Engineering, McGraw Hill Publications,**2019**
	David G Alciatore and Michel B Histand, Introduction to Mechatronics and Measurement Systems, 3rd, Tata McGraw Hill Education Private Limited, New Delhi., 2005
	1. Vincent Del Toro, Electrical Engineering Fundamentals Prentice Hall India**2009**

List of Experiments to be performed in the Laboratory

Sl No	Experiments	
1	Introduction to Lab Equipment	
2	Voltmeter Design	
3	Ammeter Design	
4	Ohmmeter Design	
5	Multimeter Design	
6	Measurement of Resistance using Wheatstone Bridge	
7	Measurement of Capacitance using Schering Bridge	
8	Measurement of Inductance using Maxwell Bridge	
9	Measurement of Light Intensity	
10	Measurement of Temperature	
	Reference Book for Laboratory Experiments	
	AK.SawhneyACourseinElec.&Electronics Measurements&Instrumentation:	
	Helfrick& Cooper, Modern Electronic Instrumentation and Measurement Techniques:	

Question Paper Pattern:

RANI CHANNAMMA UNIVERSITY
Department of PHYSICS

I /II/III/IV Semester B.Sc.

Sub: **Code:** **Maximum Marks: 60**

Q.No.1.	**Answer any Six Questions** ***(Two question from Each Unit to be asked)*** **a.** **b.** **c.** **d,** **e.** **f.** **g.** **h.**	**6X2=12**
Q.No.2.	**(Questions from Unit-I)** **a.** **b.** **OR** **c.** **d.**	 **08** **04** **08** **04**
Q.No.3.	**(Questions from Entire Unit-II)** **a.** **b.** **OR** **c.** **d.**	 **08** **04** **08** **04**
Q.No.4.	**(Questions from Unit-III)** **a.** **b.** **OR** **c.** **d.**	 **08** **04** **08** **04**
Q.No.5.	**(Questions from Unit-IV)** **a.** **b.** **OR** **c.** **d.**	 **08** **04** **08** **04**

Note:

i. There should be a problem carrying 4 marks from each unit and may be asked in either b or d in questions 2 to 5.

ii. If necessary, sub questions a and c from 2 to 5 may be subdivided in to i. and ii. Without exceeding maximum 08 marks.

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS

Of

PHYSICS

as per the Choice Based Credit System (CBCS) designed in accordance with
Learning Outcomes-Based Curriculum Framework (LOCF)
of National Education Policy (NEP) 2020
for

Bachelor of Science (Physics)

V and VI Semester

(Two major system)

w.e.f.

Academic Year 2023-24 and onwards

ROGRAM STRUCTURE

Curricular and Credits Structure of Physics as one of the two majors for the V and VI semester Physics B.Sc. Undergraduate Programme with effect from 2023-24.

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Physics as Major Discipline										
DSC5	21BSC5C5PHY1L	Classical Mechanics-I and Quantum Mechanics-I	40	60	100	4	-	-	4	2
	21BSC5C5PHY1P	Classical Mechanics-I and Quantum Mechanics-I Practical	25	25	50	-	-	4	2	3
DSC6	21BSC5C5PHY2L	Elements of Atomic, Molecular and Laser Physics	40	60	100	4	-	-	4	2
	21BSC5C5PHY2P	Elements of Atomic, Molecular and Laser Physics Practical	25	25	50	-	-	4	2	3
DSC7	Another Department Code as a second Major Subject	Another Department Major Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
DSC8	Another Department Code as a second Major Subject	Another Department Major Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
SEC3	21BSC5SEC3	Employability Skills: Electrical Circuits and Network Skills	25	25	50	2	-	2	3	-
Total Marks					**650**	**Semester Credits**			**27**	

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Physics as Major Discipline										
DSC9	21BSC6C6PHY1L	Elements of Condensed Matter & Nuclear Physics	40	60	100	4	-	-	4	2
	21BSC6C6PHY1P	Elements of Condensed Matter & Nuclear Physics Practical	25	25	50	-	-	4	2	3
DSC10	21BSC6C6PHY2L	Electronic Instrumentation & Sensors	40	60	100	4	-	-	4	2
	21BSC6C6PHY2P	Electronic Instrumentation & Sensors Practical	25	25	50	-	-	4	2	3
DSC11	Another Department Code as a second Major Subject	Another Department Major Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
DSC12	Another Department Code as a second Major Subject	Another Department Major Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
INT	21BSC6IN1PHYIN	Internship / Mini Research Project	-	-	50	3 to 4 weeks			2	Report & Presentation
Total Marks					**650**	**Semester Credits**			**26**	

SEMESTER - V

Program Name	BSc in Physics	**Semester**	V
Course Title	Classical Mechanics and Quantum Mechanics- I **(Theory)**		
Course Code	21BSC5C5PHY1L	**No. of Credits**	04
Contact Hours	60 Hours	**Duration of SEA/Exam**	02 Hours
Formative Assessment Marks	40	**Summative Assessment Marks**	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to

- Identify the failure of classical physics at the microscopic level.
- Find the relationship between the normalization of a wave function and the ability to correctly calculate expectation values or probability densities.
- Explain the minimum uncertainty of measuring both observables on any quantum state.
- Describe the time-dependent and time-independent Schrödinger equation for simple potentials like for instance one-dimensional potential well and Harmonic oscillator.
- Understand the concept of tunnelling.

Contents	**60 Hrs**
UNIT I **Introduction to Newtonian Mechanics**: Frames of references, Newton's laws of motion, inertial and non-inertial frames. Mechanics of a particle, Conservation of linear momentum, Angular momentum and torque, conservation of angular momentum, work done by a force, conservative force and conservative energy. **Lagrangian formulation**: Constraints, Holonomic constraints, non-holonomic constraints, Scleronomic and Rheonomic constraints. Generalized coordinates, degrees of freedom, Principle of virtual work, D'Alembert's principle, Lagrange equations. Newton's equation of motion from Lagrange equations, simple pendulum, Atwood's machine and linear harmonic oscillator. **12 Hours** **Activities: 03 Hours**	15
UNIT II **Relativity:** Newtonian principle of relativity. Non-Inertial Systems: Non-inertial frames and fictitious forces. Uniformly rotating frame. Special Theory of Relativity: Michelson-Morley Experiment and its outcome. Postulates of Special Theory of Relativity. Lorentz Transformations. Simultaneity and order of events. Lorentz contraction. Time dilation. Relativistic transformation of velocity, frequency and wave number. Relativistic addition of velocities. Variation of mass with velocity. Massless Particles. Mass energy Equivalence. Relativistic Doppler effect. Relativistic Kinematics. Transformation of Energy and Momentum. . **12Hours** **Activities: 03 Hours**	15

UNIT III **Introduction to Quantum Mechanics** Brief discussion on failure of classical physics to explain black body radiation, Photoelectric effect, Compton effect, stability of atoms and spectra of atoms. Compton scattering: Expression for Compton shift (With derivation). Matter waves: de Broglie hypothesis of matter waves, Electron microscope, Wave description of particles by wave packets, Group and Phase velocities and relation between them, Experimental evidence for matter waves: Davisson- Germer experiment, G.P Thomson's experiment and its significance. Heisenberg uncertainty principle: Elementary proof of Heisenberg's relation between momentum and position, energy and time, Illustration of uncertainty principle by Gamma ray microscope thought experiment. Consequences of the uncertainty relations: Diffraction of electrons at a single slit, why electron cannot exist in nucleus? Two-slit experiment with photons and electrons. Linear superposition principle as a consequence. **12 Hours** **Activities: 03 Hours**	15
UNIT IV Foundation of Quantum Mechanics Probabilistic interpretation of the wave function - normalization and orthogonality of wave functions, Admissibility conditions on a wave function, Schrödinger equation: equation of motion of matter waves - Schrodinger wave equation for a free particle in one and three-dimension, time-dependent and time-independent wave equations, Probability current density, equation of continuity and its physical significance, Postulates of Quantum mechanics: States as normalized wavefunctions. Applications of Schrodinger's equation – for free particle, particle in one dimensional box-derivation of Eigen values and Eigen function for infinite and finite potential well. Tunnelling. Transmission across a potential barrier, the tunnelling effect. Scanning tunnelling microscope (STM). Development of Schrodinger's equation for One dimensional Linear harmonic oscillator. Concept of zero - point energy **12 Hours** **Activities: 03 Hours**	15

Pedagogy: Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

References	
1	Classical Mechanics, H.Goldstein, C.P. Poole, J.L. Safko, 3rd Edn. 2002, Pearson Education.
2	Classical Mechanics: An introduction, Dieter Strauch, 2009, Springer
3	Classical Mechanics, G. Aruldhas, 2008, Prentice-Hall of India Private limited, New Delhi.
4	Classical Mechanics, Takwale and Puranik-1989, Tata Mcgraw Hill, new Delhi
5	Concepts of Modern Physics, Arthur Beiser, McGraw-Hill, 2009.
6	Physics for Scientists and Engineers with Modern Physics, Serway and Jewett, 9th edition, Cengage Learning, 2014.
7	Quantum Physics, Berkeley Physics Course Vol. 4. E.H. Wichman, Tata McGraw-Hill Co., 2008.
8	Six Ideas that Shaped Physics: Particle Behave like Waves, Thomas A. Moore, McGraw Hill, 2003.
9	P M Mathews and K Venkatesan, A Textbook of Quantum Mechanics, Tata McGraw Hill publication, ISBN: 9780070146174.
10	Ajoy Ghatak, S. Lokanathan, Quantum Mechanics: Theory and Applications, Springer Publication,ISBN 978-1-4020-2130-5.
11	Modern Physics; R.Murugeshan & K.Sivaprasath; S. Chand Publishing.
12	G Aruldhas, Quantum Mechanics, Phi Learning Private Ltd., ISBN: 97881203363.
13	Gupta, Kumar & Sharma, Quantum Mechanics, Jai Prakash Nath Publications.
14	Physics for Degree Students B.Sc., Third Year, C. L. Arora and P. S. Hemne, 1st edition, S. Chand & Company Pvt. Ltd., 2014.

PRACTICAL

Course Title	Classical Mechanics and Quantum Mechanics- I **(Practical)**	**Practical Credits**	02
Course Code	21BSC5C5PHY1P	**Contact Hours**	04 Hours
Formative Assessment	25 Marks	**Summative Assessment**	25 Marks

Contents

Lab experiments: (at least 4 experiments from 1-6 and 4 experiments from 7-16)

1) To determine 'g', the acceleration due to gravity, at a given place, from the L – T 2 graph, for a simple pendulum.

2) Studying the effect of mass of the bob on the time period of the simple pendulum.

[Hint: With the same experimental set-up, take a few bobs of different materials (different masses) but of same size. Keep the length of the pendulum same for each case. Starting from a small angular displacement of about 10° find out, in each case, the time period of the pendulum, using bobs of different masses. Does the time period depend on the mass of the pendulum bob? If yes, then see the order in which the change occurs. If not, then do you see an additional reason to use the pendulum as a time measuring device.

3) Studying the effect of amplitude of oscillation on the time period of the simple pendulum.

[Hint: With the same experimental set-up, keep the mass of the bob and length of the pendulum fixed. For measuring the angular amplitude, make a large protractor on the cardboard and have a scale marked on an arc from 0° to 90° in units of 5°. Fix it on the edge of a table by two drawing pins such that its 0°- line coincides with the suspension thread of the pendulum at rest. Start the pendulum oscillating with a very large angular amplitude (say 70°) and find the time period T of the pendulum. Change the amplitude of oscillation of the bob in small steps of 5° or 10° and determine the time period in each case till the amplitude becomes small (say 5°). Draw a graph between angular amplitude and T. How does the time period of the pendulum change with the amplitude of oscillation? How much does the value of T for A = 10° differ from that for A= 50° from the graph you have drawn? Find at what amplitude of oscillation, the time period begins to vary? Determine the limit for the pendulum when it ceases to be a simple pendulum.]

4) Determine the acceleration of gravity is to use an Atwood's machine.

5) Study the conservation of energy and momentum using projectile motion.

6) Verification of the Principle of Conservation of Linear Momentum

7) Determination of Planck constant and work function of the material of the cathode using Photo-electric cell.

8) To study the spectral characteristics of a photo-voltaic cell (Solar cell).

9) Determination of electron charge ‘e’ by Millikan’s Oil drop experiment.

10) To study the characteristics of solar cell.

11) To find the value of e/m for an electron by Thomson’s method using bar magnets.

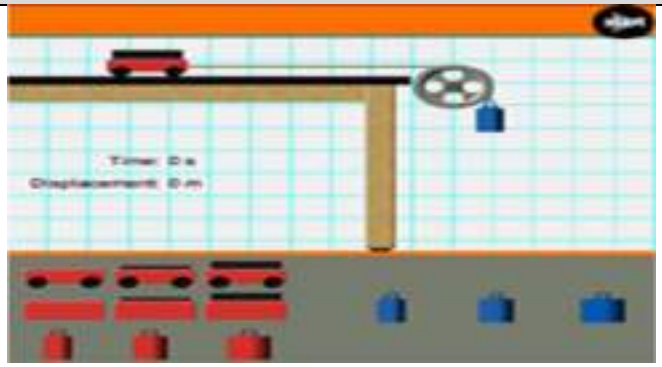
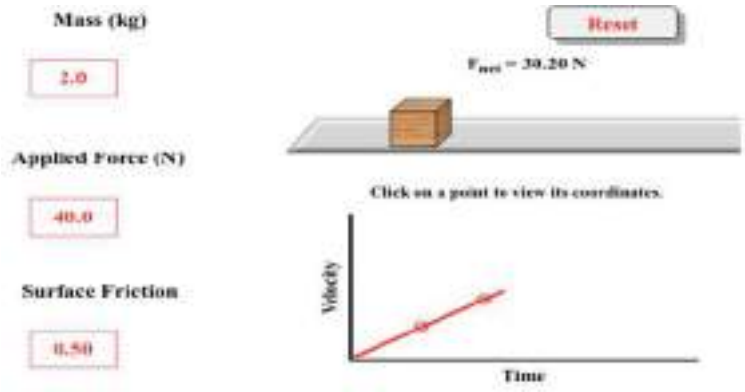
12) To determine the value of e/m for an electron by magnetron method.

13) To study the tunnelling in Tunnel Diode using I-V characteristics.

14) Determination of quantum efficiency of Photodiode.

Pedagogy: Demonstration/Experiential Learning / Self Directed Learning etc.

References	
1	B.Sc Practical Physics by C.L Arora.
2	B.Sc Practical Physics by Harnam Singh and P.S Hemne.
3	Practical Physics by G.S Squires.
4	Scilab Manual for CC-XI: Quantum Mechanics &Applications (32221501) by Dr Neetu Agrawal, Daulat Ram College of Delhi.
5	Scilab Textbook Companion for Quantum Mechanics by M. C. Jain.
6	Computational Quantum Mechanics using Scilab, BIT Mesra.
7	Advanced Practical Physics for Students by Worsnop B L and Flint H T.

Activities	
1	 Atwood's Machine Everyone is fascinated by pulleys. In this Interactive, learners will attach two objects together by a string and stretch the string over a pulley. Both an Atwood's machine and a modified Atwood's machine can be created and studies. Change the amount of mass on either object, introduce friction forces, and measure distance and time in order to calculate the acceleration. Newton's Laws of Motion 

Force

When forces are unbalanced, objects accelerate. But what factors affect the amount of acceleration? This Interactive allows learners to investigate a variety of factors that affect the acceleration of a box pushed across a surface, The amount of applied force, the mass, and the friction can be altered. A plot of velocity as a function of time can be used to determine the acceleration.

In the Balloon Car Lesson Plan, students build and explore balloon-powered cars. This lesson focuses mostly on energy, but it also demonstrates Newton's laws of motion. Guidance is provided for talking specifically about the third law of motion. *Question*: how does the air escaping the balloon relate to Newton's third law of motion? Does the car continue to coast after the balloon is deflated? Why or why not?

Most of the activities and lessons below *focus* on one or two of the laws of motion. The Build a Balloon Car activity specifically **talks about all three of Newton's laws of motion** students can observe when building and experimenting with a simple balloon-powered car. This is an accessible hands-on activity that uses recycled materials and balloons for a fun combined engineering design project and physics experiment. The activity can be used with a wide range of grade levels to introduce and demonstrate the laws of motion. See the "Digging Deeper" section for a straightforward discussion of how each law of motion can be identified in the balloon car activity. (For a related lesson plan, see Balloon Car Lesson Plan, which is NGSS-aligned for middle school and focuses on the third law of motion.)
In the Push Harder — Newton's Second Law , students build their own cars using craft materials and get hands-on exploring Newton's second law of motion and the equation "force equals mass times acceleration" (F=ma). Options for gathering real-time data include using a mobile phone and a sensor app or using a meter stick and a stopwatch. *Questions*: What is the relationship between force, mass, and acceleration? As force increases, what happens to acceleration?

In the Skydive Into Forces , students make parachutes and then investigate how they work to slow down a falling object. As students investigate the forces that are involved, educators can introduce Newton's second law of motion and how

	different forces change the resulting speed of a falling object. *Questions*: What forces help slow down the speed of a falling object? How does a parachute help slow the fall? 
2	Both standard cameras (DSLRs, phone cameras) and our scientific cameras work on the principle of photoelectric effect to produce an image from light, involving the use of **photodetectors** and **sensor pixels. Prepare a report on the working of digital camera.**
3	Demonstration of Heisenberg uncertainty principle in the context of diffraction at a single slit: The uncertainty in the momentum Δp_x correspond to the angular spread of principal maxima *Θ.* Then, $\Delta p_x = \sin\theta . p$ where *p* is the momentum of the incident photon. Conduct the diffraction at a slit experiment virtually using the following link *https://www.walter-fendt.de/html5/phen/singleslit_en.htm* **1.** Measure the angular spread (*Θ*) for different slit widths (Δx) for given wavelength of the incident photon. **2.** Determine the momentum of the incident photon using $p = \frac{h}{\lambda}$ **3.** Create a line of best fit through the points in the plot $\frac{1}{\Delta p_x}$ against Δx and find its slope. How this exercise is related to Heisenberg Uncertainty principle. Make a report of the observations.
4	Virtual lab to demonstrate Photoelectric effect using *Value@Amritha*: Conduct the virtual experiment using the following link *https://vlab.amrita.edu/?sub=1&brch=195&sim=840&cnt=1* 1. Determine the minimum frequency required to have Photoelectric effect for an EM radiation, when incident on a zinc metal surface. 2. Determine the target material if the threshold frequency of EM radiation is 5.5×10^{15} Hz in a particular photoelectric experimental set up. 3. Determine the maximum kinetic energy of photo-electrons emitted from a Zinc metal surface, if the incident frequency is 3×10^{15}Hz. **4.** What should be the stopping potential for photoelectrons if the target Material used is Platinum and incident frequency is 2×10^{15}Hz? Make a report of the calculations.
5	Visualization of wave packets using Physlet@Quantum Physics: The concept of group velocity and phase velocity of a wave packet can be studied using this link https://www.compadre.org/PQP/quantum-need/section5_9.cfm Students can take up the exercises using the link which is as follows https://www.compadre.org/PQP/quantum-need/prob5_11.cfm

	Six different classical wave packets are shown in the animations. Which of the wave packets have a phase velocity that is: greater than / less than / equal to the group velocity? Make a report of the observations.
6	Superposition of eigen states in an infinite one - dimensional potential well using QuVis (Quantum Mechanics Visualization Project): Construct different possible states by considering the first three eigen states and study the variation of probability density with position. Take the challenges after understanding the simulation and submit the report. The link is as follows https://www.standrews.ac.uk/physics/quvis/simulations_html5/sims/SuperpositionStates/SuperpositionStates.html
7	Determination of expectation values of position, momentum for a particle in a an infinite one - dimensional potential well using Physlet@Quantum Physics: The link to the visualization tool for the calculation is as follows https://www.compadre.org/PQP/quantum-theory/prob10_3.cfm A particle is in a one-dimensional box of length L = 1. The states shown are normalized. The results of the integrals that give $\langle x \rangle$ and $\langle x^2 \rangle$ and $\langle p \rangle$ and $\langle p^2 \rangle$. You may vary n from 1 to 10. a) What do you notice about the values of $\langle x \rangle$ and $\langle x^2 \rangle$ as you vary n? b) What do you think $\langle x^2 \rangle$ should become in the limit of $n \rightarrow \infty$? Why? c) What do you notice about the values of $\langle p \rangle$ and $\langle p^2 \rangle$ as you vary n? Make a report of the calculations.
8	Determination of expectation values for a particle in a one-dimensional harmonic oscillator using Physlet@Quantum Physics: The link to the visualization tool for the calculation is as follows https://www.compadre.org/PQP/quantum-theory/prob12_2.cfm A particle is in a one-dimensional harmonic oscillator potential ($\hbar = 2m = 1$; $\omega = k = 2$). The states shown are normalized. Shown are ψ and the results of the integrals that give $\langle x \rangle$ and $\langle x^2 \rangle$ and $\langle p \rangle$ and $\langle p^2 \rangle$. Vary n from 1 to 10. a) What do you notice about how $\langle x \rangle$ and $\langle x^2 \rangle$ and $\langle p \rangle$ and $\langle p^2 \rangle$ change? b) Calculate $\Delta x \,.\Delta p$ for n = 0. What do you notice considering $\hbar$ = 1? c) What is E_n? How does this agree with or disagree with the standard case for the harmonic oscillator? d) How much average kinetic and potential energies are in an arbitrary energy state? Make a report of the calculations.
9	Calculate uncertainties of position and momentum for a particle in a box using Physlet@Quantum Physics: The link to the visualization tool for the calculation is as follows https://www.compadre.org/PQP/quantum-theory/prob6_3.cfm A particle is in a one-dimensional box of length L = 1. The states shown are normalized. The results of the integrals that give $\langle x \rangle$ and $\langle x^2 \rangle$, and $\langle p \rangle$ and $\langle p^2 \rangle$. You may vary n from 1 to 10. a. For n = 1, what are Δx and Δp? b. For n = 10, what are Δx and Δp?

10	Write expressions for the three wave functions using Physlet@Quantum Physics: The link to the visualization tool for the calculation is as follows https://www.compadre.org/PQP/quantum-theory/prob8_1.cfm These animations show the real (blue) and imaginary (pink) parts of three time-dependent energy eigenfunctions. Assume *x* is measured in cm and time is measured in seconds. a. Write an expression for each of the three time-dependent energy eigenfunctions in the form: $e^{i(kx-wt)}$. b. What is the mass of the particle? c. What would the mass of the particle be if time was being shown in ms? Make a report of the calculations.
11	If you store a file on your computer today, you probably store it on a solid-state drive (SSD), Make a detailed report on the role of quantum tunnelling in these devices.

SEMESTER - V

Program Name	BSc in Physics	**Semester**	V
Course Title	Elements of Atomic, Molecular & Laser Physics (Theory)		
Course Code	21BSC5C5PHY2L	**No. of Credits**	04
Contact Hours	60 Hours	**Duration of SEA/Exam**	02 Hours
Formative Assessment Marks	40	**Summative Assessment Marks**	60

Course Outcomes (COs): After the completion of the course, the student will be able to

- Describe atomic properties using basic atomic models.
- Interpret atomic spectra of elements using vector atom model.
- Interpret molecular spectra of compounds using basics of molecular physics.
- Explain laser systems and their applications in various fields.
- Learn the importance of Statistical mechanics and different distribution functions.

Contents	**60 Hours**
UNIT I **Basic Atomic models** Thomson's atomic model; Rutherford atomic model – Model, Theory of alpha particle scattering, Rutherford scattering formula; Bohr atomic model – postulates, Derivation of expression for radius, total energy of electron; Origin of the spectral lines; Spectral series of hydrogen atom; Effect of nuclear motion on atomic spectra - derivation; Ritz combination principle; Correspondence principle; Critical potentials – critical potential, excitation potential and ionisation potential; Atomic excitation and its types, Franck-Hertz experiment; Sommerfeld's atomic model – model, Derivation of condition for allowed elliptical orbits. **12 Hours** **Activities: 03 Hours** 1. Students to estimate radii of orbits and energies of electron in case of hydrogen atom in different orbits and plot the graph of radii / energy versus principal quantum number 'n'. Analyze the nature of the graph and draw the inferences. 2. Students to search critical, excitation and ionisation potentials of different elements and plot the graph of critical /excitation / ionisation potentials versus atomic number/mass number/neutron number of element. Analyze the nature of the graph and draw the inferences.	15
UNIT II **Vector atomic model and optical spectra** Vector atom model – model fundamentals, spatial quantization, spinning electron; Quantum numbers associated with vector atomic model; Optical spectra – spectral terms, spectral notations, selection rules. Spin-orbit coupling/Spin-Orbit Interaction (qualitative). Coupling schemes – L-S and j-j schemes; Pauli's exclusion principle; Magnetic dipole moment due to orbital motion of electron – derivation; Magnetic dipole moment due to spin motion of electron; Stern-Gerlach experiment –	15

Experimental arrangement and Principle; Fine structure of spectral lines with examples. Zeeman effect: Experimental study, Types: normal and anomalous Zeeman effect, Quantum theory of normal Zeeman effect. Energy level diagram for Sodium-D lines. Paschen back effect and Stark effect (qualitative). Lande g-factor and its calculation for different states **12 Hours** **Activities: 03 Hours** 1. Students to couple a p-state and s-state electron via L-S and j-j coupling schemes for a system with two electrons and construct vector diagrams for each resultant. Analyze the coupling results and draw the inferences. 2. Students to estimate magnetic dipole moment due to orbital motion of electron for different states $^2P_{1/2}$, $^2P_{3/2}$, $^2P_{5/2}$, $^2P_{7/2}$, $^2P_{9/2}$ and $^2P_{11/2}$ and plot the graph of dipole moment versus total orbital angular momentum "J'. Analyze the nature of the graph and draw the inferences.	
UNIT III **Molecular Physics** Types of molecules based on their moment of inertia; Types of molecular motions: Rotational and Vibrational motions and energies. Microwave Spectra: Theory of rigid rotator – energy levels and spectrum. Infra-Red Spectra: Theory of vibrating molecule as a simple harmonic oscillator – energy levels and spectrum. Raman effect – Stoke's and anti-Stoke's lines, characteristics of Raman spectra, classical and quantum theory of Raman effect. Experimental set up of Raman Effect. Applications of Raman effect. **Laser Physics** Interaction of radiation with matter: Induced absorption, spontaneous emission and stimulated emission. Einstein's A and B coefficients – Derivation of relation between Einstein's coefficients and radiation energy density; Condition for amplification of light; Population inversion; Methods of pumping; Requisites of laser – energy source, active medium and laser cavity; Three level energy diagram. Construction and Working principle of Ruby Laser. Characteristics of laser light and its applications. **12 Hours** **Activities: 03 Hours** 1. Students to estimate energy of rigid diatomic molecules CO, HCl and plot the graph of rotational energy versus rotational quantum number 'J'. Analyse the nature of the graph and draw the inferences. Also students study the effect of isotopes on rotational energies. 2. Students to estimate energy of harmonic vibrating molecules CO, HCl and plot the graph of vibrational energy versus vibrational quantum number 'v'. Analyse the nature of the graph and draw the inferences. 3. Students to search different lasers used in medical field (ex: eye surgery, endoscopy, dentistry etc.), list their parameters and analyse the need of these parameters for specific application, and draw the inferences. Students also make the presentation of the study. 4. Students to search different lasers used in defense field (ex: range finding, laser weapon, etc.), list their parameters and analyse the need of these parameters for specific application, and draw the inferences. Students also make the presentation of the study.	15

UNIT IV **Statistical Mechanics** Concepts of thermodynamic ensembles (micro-canonical, canonical and grand canonical ensembles). Phase Space- Micro state & Macro state. Thermodynamic probabilities. Maxwell- Boltzmann Statistics. Derivation for Maxwell- Boltzmann distribution function. Limitations of Maxwell- Boltzmann Statistics. Concepts of Bosons and fermions. Bose-Einstein Statistics. Derivation for Bose-Einstein distribution function. Fermi-Dirac Statistics. Derivation for Fermi-Dirac distribution function. Comparison of Maxwell- Boltzmann Statistics, Bose-Einstein Statistics, Fermi-Dirac Statistics.	15

Pedagogy: Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

References	
1	Modern Physics, R. Murugeshan, Kiruthiga Sivaprakash, Revised Edition, 2009, S. Chand & Company Ltd.
2	Atomic & Molecular spectra: Laser, Raj Kumar, Revised Edition, 2008, Kedar Nath Ram Nath Publishers, Meerut.
3	Atomic Physics, S.N. Ghoshal, Revised Edition, 2013, S. Chand & Company Ltd.
4	Concepts of Atomic Physics, S.P. Kuila, First Edition, 2018, New Central Book Agency (P) Ltd.
5	Concepts of Modern Physics, Arthur Beiser, Seventh Edition, 2015, Shobhit Mahajan, S. Rai Choudhury, 2002, McGraw-Hill.
6	Fundamentals of Molecular Spectroscopy, C.N. Banwell and E.M. McCash, Fourth Edition, 2008, Tata McGraw-Hill Publishers.
7	Elements of Spectroscopy – Atomic, Molecular and Laser Physics, Gupta, Kumar and Sharma, 2016, Pragati Publications.
8	1) Statistical Mechanics, An Introduction, **Evelyn Guha**, Narosa (**2008**) 2) Statistical Mechanics, ***R.K.Pathria***, 2nd edition, Pergamon Press (**1972**) 3) Statistical and Thermal physics, ***F.Reif***, McGraw Hill International(**1985**) 4) Statistical Mechanics, ***K.Huang***, Wiley Eastern Limited, New Delhi (**1975**). 5) Fundamentals of Statistical Mechanics: B. B. Laud, New Age International Publishers, 2nd Edn.

PRACTICAL

Course Title	Elements of Atomic, Molecular & Laser Physics (Practical)	**Practical Credits**	02
Course Code	21BSC5C5PHY2P	**Contact Hours**	04 Hours
Formative Assessment	25 Marks	**Summative Assessment**	25 Marks

Practical Content

LIST OF EXPERIMENTS

1. To determine Planck's constant using Photocell.
2. To determine Planck's constant using LED.
3. Photoconductive cell characteristics
4. Photovoltaic Cell characteristics
5. To determine wavelength of spectral lines of mercury source using spectrometer.
6. To determine the value of Rydberg's constant using diffraction grating and hydrogen discharge tube.
7. To determine the wavelength of H-alpha emission line of Hydrogen atom.
8. To determine fine structure constant using fine structure separation of sodium D-lines using a plane diffraction grating.
9. To determine the value of e/m by Magnetic focusing or Bar magnet.
10. To determine the ionization potential of mercury.
11. To setup the Millikan oil drop apparatus and determine the charge of an electron.
12. To determine the absorption lines in the rotational spectrum of Iodine vapour.
13. To determine the force constant and vibrational constant for the iodine molecule from its absorption spectrum.
14. Characteristics of Laser Diode
15. To determine the wavelength of laser using diffraction by single slit/double slits.
16. To determine wavelength of He-Ne laser using plane diffraction grating.
17. To determine angular spread of He-Ne laser using plane diffraction grating.
18. To determine angular spread of He-Ne laser using plane diffraction
19. Study of Raman scattering by CCl_4 using laser and spectrometer/CDS.

NOTE: Students have to perform at-least EIGHT Experiments from the above list.

Pedagogy: Demonstration/Experiential Learning / Self Directed Learning etc.

References

1	Practical Physics, D.C. Tayal, First Millennium Edition, 2000, Himalaya Publishing House.
2	B.Sc. Practical Physics, C.L. Arora, Revised Edition, 2007, S. Chand & Comp.Ltd.
3	An Advanced Course in Practical Physics, D. Chatopadhyaya, P.C. Rakshith, B. Saha, Revised Edition, 2002, New Central Book Agency Pvt. Ltd.
4	Physics through experiments, B. Saraf, 2013, Vikas Publications.

Employability skills

Program Name	BSc in Physics	**Semester**	VI
Course Title	Electrical Circuits and Network Skills (Theory)		
Course Code:	21BSC5SEC3	**No. of Credits**	03
Contact Hours	45 Hours	**Duration of SEA/Exam**	2 Hours
Formative Assessment Marks	25	**Summative Assessment Marks**	25

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

- Understand the fundamental concepts of electrical circuits and networks.
- Analyze the behavior of a simple electrical circuit.
- Design a circuit to meet a specific set of requirements.
- Apply the principles of electrical circuits and networks to solve real-world problems.
- Troubleshoot an electrical circuit that is not working properly.
- Analyze the behavior of an electrical network.
- Communicate effectively about electrical circuits and networks to both technical and non-technical audiences.

Contents	**45 Hours**
Basic Electricity Principles: Voltage, Current, Resistance, and Power. Ohm's law. Series, parallel, and series-parallel combinations. AC Electricity and DC Electricity. Familiarization with multimeter, voltmeter and ammeter. **Understanding Electrical Circuits**: Main electric circuit elements and their combination. Rules to analyze DC sourced electrical circuits. Current and voltage drop across the DC circuit elements. Single-phase and three-phase alternating current sources. Rules to analyze AC sourced electrical circuits. Real, imaginary and complex power components of AC source. Power factor. Saving energy and money. **Electrical Drawing and Symbols**: Rules for electrical drawing. Drawing symbols. Blueprints. Reading Schematics. Ladder diagrams. Electrical Schematics. Power circuits. Control circuits. Reading of circuit schematics. Tracking the connections of elements and identify current flow and voltage drop. **Generators and Transformers**: DC Power sources. AC/DC generators. Inductance, capacitance, and impedance. Transformers: Step-up and step-down transformer: principle, design and fabrication. **Electric Motors**: Single phase and three phase AC motor, DC motors, BLDC motor, Capacitor Coupling, AC regulator, Interfacing DC or AC sources to control motors. RPM and Power Consumption of AC motors..	

Electrical Protection: Grounding and isolation, Phase reversal, Surge protection, Fuses and disconnect switches, Circuit breakers, Overload Devices. Relay, Timer relay, Voltage controller, Ground-fault protection. Grounding and isolating. Phase reversal. Surge protection. Interfacing DC or AC sources to control elements (relay protection device) **Solid-State Devices**: Resistors, inductors and capacitors. Diode and rectifiers. Components in Series or in shunt. Response of inductors and capacitors with DC or AC sources **Electrical Wiring**: Different types of conductors and cables. Basics of wiring-Star and delta connection. Voltage drop and losses across cables and conductors. Instruments to measure current, voltage, power in DC and AC circuits. Insulation. Solid and stranded cable. Conduit. Cable trays. Splices: wirenuts, crimps, terminal blocks, split bolts, and solder. Preparation of extension board. **Reference Books:** 1. A text book in Electrical Technology - B L Theraja - S Chand & Co. 2. A text book of Electrical Technology - A K Theraja **3.** Performance and design of AC machines - M G Say ELBS Edn.	
Practicals: **1**. Verification of Ohms law. 2. Verification of Millman's theorem. 3. IV characteristics of a solid-state relay. 4. Capacitor coupled power supply. 5. Load regulation and line regulation of an SMPS Power Supply. 6. TE model characterization using Peltier Cooler 7. Voltage controller using a 3 pin IC 8. IV characteristics of a buck boost converter 9. Monostable multivibrator using IC 555 10. LDR characteristics	

Note: It is the discretion of teacher to combine theory and practical in 45 hrs**.** Some topics can be covered by inviting experts in the field, e.g., electricians and motor winding experts.

SEMESTER - VI

Program Name	BSc in Physics	**Semester**	VI
Course Title	Elements of Condensed Matter & Nuclear Physics (Theory)		
Course Code	21BSC6C6PHY1L	**No. of Credits**	4
Contact Hours	60 Hours	**Duration of SEA/Exam**	3 Hours
Formative Assessment Marks	40	**Summative Assessment Marks**	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

- Explain the basic properties of nucleus and get the idea of its inner information.
- Understand the concepts of binding energy and binding energy per nucleon v/s mass number graph.
- Describe the processes of alpha, beta and gamma decays based on well-established theories.
- Explain the basic aspects of interaction of gamma radiation with matter by photoelectric effect, Compton scattering and pair production.
- Explain the different nuclear radiation detectors such as ionization chamber, Geiger-Mueller counter etc.
- Explain the basic concept of scintillation detectors, photo-multiplier tube and semiconductor detectors.

Contents	**60 Hours**
UNIT I **Crystal systems and X-rays:** Crystal structure**:** Space Lattice, Lattice translational vectors, Basis of crystal structure, Types of unit cells, primitive, non-primitive cells.. Seven crystal system, Coordination numbers, Miller Indices, Expression for inter planner spacing. **X Rays**: Production and properties of X rays, Coolidge tube, Continuous and characteristic X-ray spectra; Moseley's law. **X-Ray diffraction**, Scattering of X-rays, Bragg's law. **Crystal diffraction:** Bragg's X-ray spectrometer- powder diffraction method, Intensity vs 2θ plot (qualitative). **Free electron theory of metals:** Classical free electron model (Drude-Lorentz model), expression for electrical and thermal conductivity, Weidman-Franz law, Failure of classical free electron theory; Quantum free electron theory, Fermi level and Fermi energy, Fermi-Dirac distribution function (expression for probability distribution F(E), statement only); Fermi Dirac distribution at T=0 and $E<E_f$, at $T\neq 0$ and $E>E_f$, F(E) vs E plot at T = 0 and $T\neq 0$. Density of states for free electrons (statement only, no derivation). Qualitative discussion of lattice vibration and concept of Phonons.; Specific heats of solids: Classical theory, Einstein's and Debye's theory of specific heats. Hall Effect in metals. **12 HOURS** **ACTIVITIES: 03 HOURS**	15
UNIT II **Magnetic Properties of Matter** Magnetic susceptibility (χ), magnetization (M), Classification of Dia, Para, and ferro magnetic materials; Langevin theory of diamagnetism. Langevin Classical and Quantum Theory of Paramagnetism. Curie's law, Ferromagnetism and Ferromagnetic Domains (qualitative). Discussion of M-H Curve. Hysteresis and Energy Loss, Hard and Soft magnetic materials.	15

Dielectric Materials: Static dielectric constant, Types of polarization (electronic, ionic and orientation), calculation of Lorentz field (derivation), Clausius-Mosotti equation (derivation), dielectric loss. Piezo electric effect, cause, examples and applications. **Superconductivity:** Definition, Experimental results – Zero resistivity and Critical temperature– The critical magnetic field – Meissner effect, Type I and type II superconductors. **Thermoelectricity:** Thermoelectric effect: Peltier and Seebeck effects. Principle of thermocouple. **12 Hours** **ACTIVITIES: 03 Hours**	
UNIT III **General Properties of Nuclei**: Constituents of nucleus and their intrinsic properties, quantitative facts about mass, radii, charge density (matter density), binding energy, main features of binding energy versus mass number curve, angular momentum, parity, magnetic moment, electric moments **Radioactivity decay:** Radioactivity: definition of radioactivity, half-life, mean life, radioactivity equilibrium **(**a) Alpha decay: basics of α-decay processes, theory of α decay (Gamow theory). Geiger-Nuttall law. (b) β-decay: energy kinematics for β-decay, positron emission, electron capture, neutrino hypothesis. (c) Gamma decay: Gamma rays' emission & kinematics, internal conversion (Definition). **12 Hours** **ACTIVITIES: 03 Hours**	15
UNIT IV **Interaction of Nuclear Radiation with matter**: Gamma ray interaction through matter, photoelectric effect, Compton scattering, pair production (qualitative). **Nuclear models:** liquid drop model: explanation of semiempirical formula. Explanation of nuclear fission on the basis of liquid drop model. **Nuclear power reactors:** Controlled chain reaction. Nuclear reactor and brief explanation of its components, types of reactors: fast breeder reactor, heavy water reactor and research reactor. **Detector for Nuclear Radiations**: Gas detectors: estimation of electric field, mobility of particle, for ionization chamber and GM Counter. Basic principle of Scintillation Detectors and construction of photo-multiplier tube (PMT). **Accelerators:** Linear accelerators and Cyclotrons. Elementary particles: Classification of elementary particles. Concept of Quark model. **12 Hours** **ACTIVITIES: 03 Hours**	15
Suggested Activities:	
1) Students to construct seven crystal systems with bamboo sticks and rubber bands. Use foam ball as atoms and study the BCC and FCC systems. 2)Students to search the characteristic X ray wavelength of different atoms/elements and plot characteristic wavelength vs atomic number and analyse the result and draw the inference. 3)Magnetic field lines are invisible. Students to trace the magnetic field lines using bar magnet and needle compass. https://nationalmaglab.org/magnet-academy/try-this-at-home/drawing-magnetic-field-lines/ ,	

4)Using vegetable oil and iron fillings students to make ferrofluids and see how it behaves in the presence of magnetic field. https://nationalmaglab.org/magnet-academy/try-this-at-home/making-ferrofluids/ 1) Study the decay scheme of selected alpha, beta & gamma radioactive sources with the help of standard nuclear data book. 2) Calculate binding energy of some selected light, medium and heavy nuclei. Plot the graph of binding energy versus mass number A 3) Study the decay scheme of standard alpha, beta and gamma sources using nuclear data book. 4) Make the list of alpha emitters from Uranium series and Thorium series. Search the kinetic energy of alpha particle emitted by these alpha emitters. Collect the required data such as half life or decay constant. Verify Geiger-Nuttal in each series. 5) Study the Z dependence of photoelectric effect cross section. 6) Study the Z dependence of common cross section for selected gamma energies and selected elements through theoretical calculation. 7) List the materials and their properties which are used for photocathode of PMT. 8) Study any two types of PMT and their advantages and disadvantages.	

Pedagogy: Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

References

1. Solid State Physics-R. K. Puri and V.K. Babber., S.Chand publications,1st Edition(2004).
2. Fundamentals of Solid State Physics-B.S.Saxena,P.N. Saxena,Pragati prakashan Meerut(2017).
3. Introductory nuclear Physics by Kenneth S. Krane (Wiley India Pvt. Ltd., 2008).
4. Nuclear Physics, Irving Kaplan, Narosa Publishing House
1. Introduction to solid State Physics, ***Charles Kittel***, VII edition, (**1996**)
5. Solid State Physics- **A J Dekker**, MacMillan India Ltd, (**2000**)
6. Essential of crystallography**, M A Wahab**, Narosa Publications (**2009)**
7. Solid State Physics-**S O Pillai**-New Age Int. Publishers (**2001**).
8. Concepts of nuclear physics by Bernard L. Cohen. (Tata McGraw Hill, 1998).
9. Introduction to the physics of nuclei & particles, R.A. Dunlap. (Thomson Asia, 2004).
10. Introduction to High Energy Physics, D.H. Perkins, Cambridge Univ. Press
11. Basic ideas and concepts in Nuclear Physics - An Introductory Approach by K. Heyde (Institute of Physics (IOP) Publishing, 2004).
12. Radiation detection and measurement, G.F. Knoll (John Wiley & Sons, 2000).
13. Physics and Engineering of Radiation Detection, Syed Naeem Ahmed (Academic Press, Elsevier, 2007).

PRACTICAL

Course Title	Elements of Condensed Matter & Nuclear Physics (Practical)	**Practical Credits**	02
Course Code	21BSC6C6PHY1P	**Contact Hours**	04 Hours
Formative Assessment	25 Marks	**Summative Assessment**	25 Marks

Practical Content

CONDENSED MATTER PHYSICS

1. Determination of Plank's constant by Photo Cell
2. Hall Effect in semiconductor: determination of mobility, hall coefficient.
3. Energy gap of semiconductor (diode/transistor) by reverse saturation method
4. Thermistor energy gap
5. Fermi Energy of Copper
6. Analysis of X-ray diffraction spectra and calculation of lattice parameter.
7. Plank's constant by LED
8. Specific Heat of Solid by Electrical Method
9. Determination of Dielectric Constant of polar liquid.
10. Determination of dipole moment of organic liquid
11. B-H Curve Using CRO.
12. Spectral Response of Photo Diode and its I-V Characteristics.
13. Determination of particle size from XRD pattern using Debye-Scherrer formula.
14. Measurement of susceptibility of paramagnetic solution (Quinck`s Tube Method).
15. Measurement of susceptibility of paramagnetic solid (Gouy's Method)

NUCLEAR PHYSICS

1. Study the characteristics of Geiger-Mùller Tube. Determine the threshold voltage, plateau region and operating voltage.
2. Study the absorption of beta particles in aluminium foils using GM counter. Determine mass attenuation coefficient of Aluminium foils.
3. Study the absorption of beta particles in thin copper foils using G M counter and determine mass attenuation coefficient.
4. Study the attenuation of gamma rays in lead foils using Cs-137 source and G M counter. Calculate mass attenuation coefficient of Lead for Gamma.
5. Determine the end point energy of Tl-204 source by studying the absorption of beta particles in aluminium foils.
6. Study the attenuation of absorption of gamma rays in polymeric materials using Cs-137 source and G M counter.

Pedagogy: Demonstration/Experiential Learning / Self Directed Learning etc.

References

1	IGNOU : Practical Physics Manual
2	Saraf : Experiment in Physics, Vikas Publications
3	S.P. Singh : Advanced Practical Physics
4	Melissons : Experiments in Modern Physics
5	Misra and Misra, Physics Lab. Manual, South Asian publishers, (**2000**)
6	Gupta and Kumar, Practical physics, Pragati prakashan, (**1976**)

SEMESTER VI

Program Name	BSc in Physics	**Semester**	VI
Course Title	Electronic Instrumentation & Sensors (Theory)		
Course Code:	21BSC6C6PHY2L	**No. of Credits**	04
Contact Hours	60 Hours	**Duration of SEA/Exam**	2 Hours
Formative Assessment Marks	40	**Summative Assessment Marks**	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

- Identify different types of tests and measuring instruments used in practice and understand their basic working principles.
- Get hands on training in wiring a circuit, soldering, making a measurement using an electronic circuit used in instrumentation.
- Have an understanding of the basic electronic components viz., resistors, capacitors, inductors, discrete and integrated circuits, colour codes, values and pin diagram, their practical use.
- Understanding of the measurement of voltage, current, resistance value, identification of the terminals of a transistor and ICs.
- Identify and understand the different types of transducers and sensors used in robust and hand-held instruments.
- Understand and give a mathematical treatment of the working of rectifiers, filter, data converters and different types of transducers.
- Connect the concepts learnt in the course to their practical use in daily life.
- Develop basic hands-on skills in the usage of oscilloscopes, multimeters, rectifiers, amplifiers, oscillators and high voltage probes, generators and digital meters.
- Servicing of simple faults of domestic appliances: Iron box, immersion heater, fan, hot plate, battery charger, emergency lamp and the like.
- Learn about Fourier series and its applications.

Contents	**60Hours**
UNIT I **Power supply** AC power and its characteristics, Single phase and three phase, Need for DC power supply and its characteristics, line voltage and frequency, Bridge rectifier, Filters: Capacitor and inductor filers, L-section and π-section filters, ripple factor, electronic voltage regulators, stabilization factor, voltage regulation using ICs. **Basic electrical measuring instruments** Cathode ray oscilloscope- Block diagram, basic principle, electron beam, CRT features, signal display. Basic elements of digital storage oscilloscopes. Generation of Lissajous figures. Basic DC voltmeter for measuring potential difference, Extending Voltmeter range, AC voltmeter using rectifiers	15

Basic DC ammeter, requirement of a shunt, Extending of ammeter ranges. Electrical fuses: different types. Circuit breakers: types, principle and applications. *Topics for self-study:* *Average value and RMS value of current, Ripple factor, Average AC input power and DC output power, efficiency of a DC power supply. Multirange voltmeter and ammeter.* **12 Hours** **ACTIVITIES: 3 Hours** **Activities** Design and wire your own DC regulated power supply. Power output: 5 V, 10 V, ± 5 V. Components required: A step down transformer, semiconductor diodes (BY126/127), Inductor, Capacitor, Zener diode or 3-pin voltage regulator or IC. Measure the ripple factor and efficiency at each stage. Tabulate the result. 1. Extend the range of measurement of voltage of a voltmeter (analog or digital) using external component and circuitry. Design your own circuit and report. 2. Measure the characteristics of the signal waveform using a CRO and function generator. Tabulate the frequency and time period. Learn the function of Trigger input in an CRO. 3. Learn to use a Storage Oscilloscope for measuring the characteristics of a repetitive input signal. Convince yourself how signal averaging using Storage CRO improves S/N ratio.	
UNIT II **Wave form generators and Filters** Basic principle of standard AF signal generator: Fixed frequency and variable frequency, AF sine and square wave generator, basic Wein-bridge network and oscillator configuration, Triangular and saw tooth wave generators, circuitry and waveforms. Passive and active filters. Fundamental theorem of filters, Proof of the theorem by considering a symmetrical T-network. Types of filters, Circuitry and Cut-off frequency and frequency response of Passive (RC) and Active (op-amp based) filters: Low pass, high pass and band pass. **12 Hours** **ACTIVITIES:** **03 Hours** **Activities** 1. Measure the amplitude and frequency of the different waveforms and tabulate the results. Required instruments: A 10 MHz oscilloscope, Function generators (sine wave and square wave). 2. Explore where signal filtering network is used in real life. Visit a nearby telephone exchange and discuss with the Engineers and technicians. Prepare a report. 3. Explore op-amp which works from a single supply biasing voltage (+15V). Construct an inverting/non-inverting amplifier powered by a single supply voltage instead of dual or bipolar supply voltage. 4. Op-amp is a linear (analog) IC. Can it be used to function as logic gates? Explore, construct and implement AND, OR NAND and NOR gate functions using op-amps.	15

Verify the truth table. Hint: LM3900 op-amp may be used. The status of the output may be checked by LED.	
UNIT III **Transducers and sensors** Definition and types of transducers. Basic characteristics of an electrical transducer, factors governing the selection of a transducer, Resistive transducer-potentiometer, Strain gauge and types (general description), Resistance thermometer-platinum resistance thermometer. Thermistor. Inductive Transducer-general principles, Linear Variable Differential Transducer (LDVT)- principle and construction, Capacitive Transducer, Piezo-electric transducer, Photoelectric transducer, Photovoltaic cell, photo diode and phototransistor – principle and working. **12 Hours** **ACTIVITIES: 03 Hours** **Activities** 1. Construct your own thermocouple for the measurement of temperature with copper and constantan wires. Use the thermocouple and a Digital multimeter (DMM). Record the emf (voltage induced) by maintaining one of the junctions at a constant temperature (say at 0^o C, melting ice) and another junction at variable temperature bath. Tabulate the voltages induced and temperatures read out using standard chart (Chart can be downloaded from the internet). Observe a solar water heater. Some solar water heaters are fitted with an anode rod (alloy of aluminium). Study why it is required. Describe the principle behind solar water heater	15
UNIT IV **MATHEMATICAL PHYSICS** **Fourier Series**: Periodic functions. Orthogonality of sine and cosine functions, Dirichlet Conditions (Statement only). Expansion of periodic functions in a series of sine and cosine functions and determination of Fourier coefficients. Complex representation of Fourier series. Expansion of functions with arbitrary period. Expansion of non-periodic functions over an interval. Application. Summing of Infinite Series. **Laplace transform:** Definition, transform of elementary functions, inverse transforms, transform of derivations, differentiation and integration of transforms. Difference between Laplace and Fourier transform.	15

Pedagogy: Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

References
1. Physics for Degree students (Third Year) – C.L. Arora and P.S. Hemne, S, Chand and Co. Pvt. Ltd. 2014 (For Unit-1, Power supplies)

References
2. Electronic Instrumentation, 3rd Edition, H.S. Kalsi, McGraw Hill Education India Pvt. Ltd. 2011 (For rest of the syllabus) 3. Instrumentation – Devices and Systems (2nd Edition)– C.S. Rangan, G.R. Sarma, V.S.V. Mani, Tata McGraw Hill Education Pvt. Ltd. (Especially for circuitry and analysis of signal generators and filters). 4. Mathematical Physics ---H. K. Dass and Dr. Rama Verma 5. Mathematical Methods for Physicists (4th Edition) George Arfken and Hans J. Weber Academic Press San Diego(1995). 6. Mathematical Physics - P.K. Chatopadhyay-Wiley Eastern Limited New Delhi (1990). 7. Introduction to mathematical Physics – Charlie Harper, Prentice-Hall of India Private Limited New-Delhi (1995)

PRACTICAL

Course Title	Electronic Instrumentation & Sensors (Practical)	**Practical Credits**	02
Course Code	21BSC6C6PHY2P	**Contact Hours**	04 Hours
Formative Assessment	25 Marks	**Summative Assessment**	25 Marks

Practical Content

List of experiments (At least 8 experiments to be performed)

1. Construct a DC power supply using a bridge rectifier and a capacitor filter. Use a Zener diode or a 3-pin voltage regulator and study the load and line regulation characteristics. Measure ripple factor with and without filter and compare with theoretical values.
2. Calibration of a low range voltmeter using a potentiometer
3. Calibration of an ammeter using a potentiometer
4. Design and construct a Wien bridge oscillator (sine wave oscillator) using µA 741 op-amp. Choose the values of R and C for a sine wave frequency of 1 KHz. Vary the value of R and C to change the oscillation frequency.
5. Design and construct a square wave generator using *µA* 741 op-amp. Determine its frequency and compare with the theoretical value. Also measure the slew rate of the op-amp. If the 741 is replace by LM318, study how does the waveform compare with the previous one.
6. Study the frequency response of a first order op-amp low pass filter
7. Study the frequency response of a first order op-amp low pass filter
8. Study the characteristics of *pn*-junction of a solar cell and determine its efficiency.
9. Study the illumination intensity of a solar cell using a standard photo detector (e.g., lux meter).
10. Study the characteristics of a LED (variation of intensity of emitted light).
11. Study the characteristics of a thermistor (temperature coefficient of resistance)
12. Study the characteristics of a photo-diode
13. Determine the coupling coefficient of a piezo-electric crystal.
14. Study the amplitude modulation using a transistor.
15. Performance analysis of A/D and D/A converter using resistor ladder network and op-amp.

Pedagogy: Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

References
1. Advanced Practical Physics for students, B. L. Flint and H.T. Worsnop, 1971, Asia Publishing House. 2. B.Sc. Practical Physics, C.L. Arora (Revised Edition), S. Chand and Co. Ltd. 2007 3. Practical Physics, D.C. Tayal, First Millennium Edition, Himalaya Publishing House, 2000

Employability and skill development

The whole syllabus is prepared with a focus on employability.

Skill development achieved: Fundamental understanding of the working of test and measuring instruments. Operating and using them for measurements. Servicing of laboratory equipment for simple cable faults, loose contacts and discontinuity.

Job opportunities: Lab Assistant/Scientific Assistant in hospitals, R and D institutions, educational institutions.

B.Sc. Semester–VI
Internship/Mini Research Project

Course Title	Internship/Mini Research Project	**Practical Credits**	02
Course Code	21BSC6IN1PHYIN	**Contact Hours for Mini Project**	04 Hours
Report and Presentation			50 Marks

Course Outcomes (COs): At the end of the course the students will be able to

CO1: The students learn the scientific methodology in carrying out internship/project work including planning and execution of the experiment.

CO2: The students acquire experiential learning by handling instruments/devices, etc., while setting up an experiment or by reading in-depth assigned subject for theoretical analysis.

CO3: The students learn the importance of team work, mutual participation and nurture their motivation either towards theoretical or experimental internship/project work.

CO4: Internship/project helps students to get research and industrial exposure and application of knowledge.

Internship:

A course requiring students to participate in a professional activity or work experience, or cooperative education activity with an entity external to the education institution, normally under the supervision of an expert of the given external entity. A key aspect of the internship is induction into actual work situations for 2 credits. Internships involve working with local industry, local governments (such as panchayats, municipalities) or private organizations, business organizations, artists, crafts persons, and similar entities to provide opportunities for students to actively engage in on-site experiential learning.

Note:

1. **One credit** internship is equal to 30 hrs on field experience.
2. Internship shall be Discipline Specific of 45-60 hours (2 credits) with duration 1-2 weeks.
3. Internship may be full-time/part-time (full-time during last 1-2 weeks before closure of the semester or weekly 4 hrs. in the academic session for 13-14 weeks).
4. College shall decide the suitable method for program wise but not subject wise.
5. Internship mentor/supervisor shall avail work allotment during 6^{th} semester for a maximum of 20hrs.
6. The student should submit the final internship report (45-60 hours of Internship) to the mentor for completion of the internship.
7. Method of Evaluation: Power Point Presentations, Submission of Report and Internship Completion Certificate.

Mini Research Project:

Physics deals with various concepts and material properties. Students can get good knowledge on Physics principles after doing project work in the area of experimental and theoretical Physics.

The objective of the Project work is to provide a platform for the students to demonstrate their ability to apply their technical/theoretical knowledge and skills gained from theory lectures and practical work throughout the course.

COs: After completing the project work students will be able to

1) Understand, plan and execute a mini project with team with the help of a supervisor.
2) implement the theoretical knowledge of Physics in model building, material synthesis.
3) learn software such as LabViwew, Phyton and MATLAB and solve Physics problems.
4) Prepare a technical report on the mini project work.
5) Deliver a presentation based on the mini project work.

Mini project work is carried out in the following form:

This course will be conducted for students as an individual or in a group of three to four students under the guidance of a staff member in the college.

Course Guidelines:

1) Students should select a problem which addresses some basic home, office or other real life applications.
2) A written report of about 5 to 10 pages should be submitted individually.
3) A group of maximum four students can be permitted to work on one mini project.
4) Student should deliver presentation about the project and demonstrate its working individually.
5) The evaluation of the project carries a maximum of 50 marks. The experimental work and preparation of the report carries 40 Marks. The viva-voce examination carries a maximum of 10 marks and will be in the form of presentation by the student.

ASSESSMENT METHODS

Evaluation Scheme for Internal Assessment:

Theory:

Assessment Criteria	40 marks
1st Internal Assessment Test for 30 marks 1 hr after 8 weeks and 2nd Internal Assessment Test for 30 marks 1 hr after 15 weeks . Average of two tests should be considered.	30
Assignment	05
Activity	05
Total	**40**

Assessment Criteria	25 marks
1st Internal Assessment Test for 20 marks 1 hr after 8 weeks and 2nd Internal Assessment Test for 20 marks 1 hr after 15 weeks. Average of two tests should be considered.	20
Assignment/Activity	05
Total	**25**

Practical:

Assessment Criteria	25 marks
Internal test	15
Viva Voce / basic understanding of the concept	05
Journal/Practical Record	05
Total	**25**

Scheme of Evaluation for Practical Examination

Sl. No.	Particulars	Marks Allotted Max. 25
1.	Basic formula with description, nature of graph if any & indication of unit	05
2.	Tracing of schematic ray diagram/Circuit diagram with description and tabulation	05
4.	Experimental skill & connection	05
5.	Record of observation,	05
6.	Calculation including drawing graph	04
7.	Accuracy of result with unit	01
	Total	**25**

Question Paper Pattern:

RANI CHANNAMMA UNIVERSITY
Department of PHYSICS

V / VI Semester B.Sc.

Sub: **Code:** **Maximum Marks: 60**

Q.No.1.	**Answer any Six Questions** ***(Two question from Each Unit to be asked)*** **a.** **b.** **c.** **d,** **e.** **f.** **g.** **h.**	**6X2=12**
Q.No.2.	**(Questions from Unit-I)** **a.** **b.** **OR** **c.** **d.**	 **08** **04** **08** **04**
Q.No.3.	**(Questions from Entire Unit-II)** **a.** **b.** **OR** **c.** **d.**	 **08** **04** **08** **04**
Q.No.4.	**(Questions from Unit-III)** **a.** **b.** **OR** **c.** **d.**	 **08** **04** **08** **04**
Q.No.5.	**(Questions from Unit-IV)** **a.** **b.** **OR** **c.** **d.**	 **08** **04** **08** **04**

Note:

i. There should be a problem of marks from each unit and may be asked in either b or d in questions 2 to 5.

ii. If necessary, sub questions a and c from 2 to 5 may be subdivided in to i. and ii. Without exceeding maximum 08 marks.

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS

As per the Choice Based Credit System (CBCS) designed in accordance with Learning Outcomes-Based Curriculum Framework (LOCF) of National Education Policy (NEP) 2020

for

Bachelor of Science/(Hons) Chemistry

Effective from Academic Year 2021-22 and onwards

RANI CHANNAMMA UNIVERSITY, BELAGAVI

BSc (Hons) Chemistry program-2022-23

(Revised)

BoS Committee-NEP-B.Sc (Hons) Chemistry 2022-23

S.No.	Name & Address	Designation
1	Prof. K. Kantharaju Chairman & Professor, Dept. of Chemistry RCUB	**Chairman**
2	Mr.A.K.Samant Govindram Seksaria Science College, Belagavi	**Member**
3	Dr. S.M.Gaonkar Basaveshwar Science College, Bagalkot.	**Member**
4	Mr.A.D.Kamath C.S.Bembalagi College, Ramdurg	**Co-opted Member**

BoS Committee-NEP-B.Sc (Hons) Chemistry 2021-22

S.No.	Name & Address	Designation
1	Prof. K. Kantharaju Chairman & Professor, Dept. of Chemistry RCUB	**Chairman**
2	Dr.A.S.Kulkarni B.K.College, Belagavi	**Member**
3	Mr. B.I.Vasulkar B.K.College, Belagavi	**Member**
4	Dr.A.S.Jagnure G.I.Bagewadi College, Nippani	**Co-opted Member**
5	Dr.S.M.Deshpande GSS College, Belagavi	**Co-opted Member**

PREAMBLE

The objective of any programme at Higher Education Institute is to prepare their students for the society at large. The Rani Channamma University envisions all its programmes in the best interest of their students and in this endeavour, it offers a new vision to all its Under-Graduate courses. It embedded Learning Outcome-based Curriculum Framework (LOCF) for all its Under Graduate programmes.

The LOCF approach is envisioned to provide a focused, outcome-based syllabus at the undergraduate level with an agenda to structure the teaching-learning experiences in a more student-centric manner. The LOCF approach has been adopted to strengthen students' experiences as they engage themselves in the programme of their choice. The Under-Graduate Programmes will prepare the students for both, academia and employability.

Each programme vividly elaborates its nature and promises the outcomes that are to be accomplished by studying the courses. The programmes also state the attributes that it offers to inculcate at the graduation level. The graduate attributes encompass values related to well-being, emotional stability, critical thinking, social justice and also skills for employability. In short, each programme prepares students for sustainability and life-long learning.

The new curriculum of BSc (Hons) Chemistry offer courses in the areas of inorganic, organic, physical, industrial, materials and analytical. All the courses are having defined objectives and Learning Outcomes, which will help prospective students in choosing the elective courses to broaden their skills in the field of chemistry and interdisciplinary areas. The courses will train students with sound theoretical and experimental knowledge that suits the need of academics and industry. The course also offers ample of skills to pursue research as career in the field of chemistry and allied areas. As usual, B.Sc (Hons) Chemistry programme offered will continue to produce best minds to meet the demands of society.

The Rani Channamma University hopes the LOCF approach of the programme BSc (Hons) Chemistry will help students in making an informed decision regarding the goals that they wish to pursue in further education and life, at large.

Syllabus & Regulations Governing the Choice-Based Credit System (CBCS) for the Four-Year (Eight Semesters) B.Sc (Hons) Chemistry Program

Introduction to B.Sc (Hons.) Chemistry

The Choice Based Credit System (CBCS) provides an opportunity to a student to choose courses from the syllabus comprising Core, Elective, Vocational and Skill based courses. It offers a flexibility of programme structure while ensuring that the student gets a strong foundation in the subject and gains in-depth knowledge. The learning outcome based curriculum framework (LOCF) will provide students with a clear purpose to focus their learning efforts and enable them to make a well judged choice regarding the course they wish to study. This will suit the present day needs of students in terms of securing their paths towards higher studies or employment.

Programme Structure

Discipline Specific Core (DSC) Courses: First, second, third and fourth semesters will have one DSC course in each semester. Every DSC course has 6 credits and a practical component (4 credits for theory and 2 credits for practical).

Fifth and sixth semesters will have two Discipline Specific Core (DSC) courses in each semester. Every DSC course has 5 credits and has practical component (3 credits for theory and 2 credits for practical).

Seventh and eighth semesters will have three Discipline Specific Core (DSC) courses in each semester, three DSC courses have 6 credits each (4 credits for theory and 2 credits for practical).

Open Elective (OE) Courses: First, second, third and fourth semesters will have one OE course in each semester. Every OE course has 3 credits and with no practical component. OE courses are for other subject students (other than major and minor), and the candidate has to choose one OE from the each semester.

Vocational Courses: Fifth and sixth semester will have one each vocational courses of each 3 credits. In sixth semester students have 2 credits internship course (usually on research related work (basic knowledge about research, how to start, literature, journals, reviews and more can be taught and ask students to do and submit a final report for assessment). These courses can enable students to obtain the required basic research insights knowledge along with online resource or practical skills.

Discipline Specific Elective (DSE) Courses: Seventh and eighth semesters will have two DSE courses. In seventh semester will have one research methodology (3 credits) and another spectroscopy to meet the equivalence of first year master degree (4 credits).

In eighth semester again one DSE 4 credits theory and another research project for 4 credits need to perform one semester project work by selecting suitable problems by the mentors.

PROGRAMME OUTCOME from B.Sc (Hons.) Chemistry

The B.Sc (Hons) programme in Chemistry is designed to develop in students in depth knowledge of thecore concepts and principles that are central to the understanding of this core science discipline. Undergraduates pursuing this programme of study go through laboratory work that specifically develop their quantitative and qualitative skills, provides opportunities for critical thinking and team work, and exposes them to techniques useful for applied areas of scientific study.

- **Knowledge: Width and depth:**

  Students acquire theoretical knowledge and understanding of the fundamental concepts, principles and processes in main branches of chemistry, namely, organic, inorganic, physical, spectroscopy, analytical and biochemistry. In depth understanding is the outcome of transactional effectiveness and treatment of specialized course contents. Width results from the choice of electives that students are offered.

- **Laboratory Skills: Quantitative, analytical and instrument based:**

  A much valued learning outcome of this programme is the laboratory skills that students develop during the course. Quantitative techniques gained through hands on methods opens choice of joining the industrial laboratory work force early on. The programme also provides ample training in handling basic chemical laboratory instruments and their use in analytical and biochemical determinations. Undergraduates on completion of this programme can cross branches to join analytical, pharmaceutical, material testing and biochemical labs besides standard chemical laboratories.

- **Communication:**

  Communication is a highly desirable attribute to possess. Opportunities to enhance students' ability to write methodical, logical and precise reports are inherent to the structure of the programme. Techniques that effectively communicate scientific chemical content to large audiences are acquired through oral and poster presentations and regular laboratory report writing.

- **Capacity Enhancement:**

  Modern day scientific environment requires students to possess ability to think independently as well as be able to work productively in groups. This requires some degree of balancing. The chemistry honours programme course is designed to take care of this important aspect of student development through effective teaching learning process.

- **Portable Skills:**

  Besides communication skills, the programme develops a range of portable or transferable skills in students that they can carry with them to their new work environment after completion of chemistry honours programme. These are problem solving, numeracy and mathematical skills- error analysis, units and conversions, information retrieval skills, IT skills and organizational skills. These are valued across work environments.

Structure of the Programme in B.Sc (Hons.) Chemistry

The programme includes Core Courses and Elective Courses. The Core Courses are all compulsory courses (DSC).There are three types of Elective Courses – Discipline Specific Elective (DSE), Open Elective (OE), and Skill Enhancement Courses (SEC), have sub skill based and value based. In addition there are two compulsory Ability Enhancement Courses (AECC). The Core, DSE and GE Courses are six credit courses; the SEC, AEC are four credit courses.

RANI CHANNAMMA UNIVERSITY

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Proposed Curricular and Credits Structure under Choice Based Credit System [CBCS] of Chemistry Major& One Minor Discipline Scheme for the Four Years Chemistry B.Sc. Undergraduate Honors Programmewith effect from 2021-22

SEMESTER-I										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L1	21BSC1L1LK1	Kannada	40	60	100	4	-	-	3	2
	21BSC1L1LFK1	Functional Kannada								
L2	21BSC1L2LEN2	English	40	60	100	4	-	-	3	2
	21BSC1L2LHI2	Hindi								
	21BSC1L2LSN2	Sanskrit								
	21BSC1L2LTE2	Telugu								
	21BSC1L2LUR2	Urdu								
DSC1	21BSC1C1CHE1L	Chemistry-1	40	60	100	4	-	-	4	2
	21BSC1C1CHE1P	Chemistry Lab-1	25	25	50	-	-	4	2	4
DSC1	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
SEC1	21BSC1S1CS1	Digital Fluency	25	25	50	1	-	2	2	2
VBC1	21BSC1V1PE1	Physical Education-Yoga	25	-	25	-	-	2	1	-
VBC2	21BSC1V2HW1	Health & Wellness	25	-	25	-	-	2	1	-
OEC1	21BSC1O1CHE1	Chemistry in daily life	40	60	100	3	-	-	3	2
OEC1A	21BSC1O1CHE1A [Only for B.Sc. in Sugar Sci & Tech]	Sugarcane Production Technology	40	60	100	3	-	-	3	2
		Total Marks			**700**	**Semester Credits**			**25**	
Note: *All skill enhancement course (SEC) syllabus and title should be selected time to time notice from the university and/ or NEP committee accordingly.*										

SEMESTER-II										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L3	21BSC2L3LK2	Kannada	40	60	100	4	-	-	3	2
	21BSC2L3FKL2	Functional Kannada								
L4	21BSC2L4EN2	English	40	60	100	4	-	-	3	2
	21BSC2L4HI2	Hindi								
	21BSC2L4SN2	Sanskrit								
	21BSC2L4TE2	Telugu								
	21BSC2L4UR2	Urdu								
DSC2	21BSC2C2CHE2L	Chemistry-2	40	60	100	4	-	-	4	2
	21BSC2C2CHE2P	Chemistry Lab-2	25	25	50	-	-	4	2	4
DSC2	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
AECC 1	21BSC2AE1ES	Environmental Studies	25	25	50	1	-	2	2	2
VBC3	21BSC2V3PE2	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC4	21BSC2V4NC1	NCC/NSS/R&R(S &G) / Cultural	25	-	25	-	-	2	1	-
OEC2	21BSC2O2CHE2	Molecules of life	40	60	100	3	-	-	3	2
OEC2A	21BSC2O2CHE2A [Only for B.Sc. in Sugar Sci Technol]	Sugar Factory Chemical Control	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	

Exit option with Certificate (50 credits)

SECOND YEAR; SEMESTER-III										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L5	21BSC3L5LK3	Kannada	40	60	100	4	-	-	3	2
	21BSC3L5LFK3	Functional Kannada								
L6	21BSC3L6EN3	English	40	60	100	4	-	-	3	2
	21BSC3L6HI3	Hindi								
	21BSC3L6SN3	Sanskrit								
	21BSC3L6TE3	Telugu								
	21BSC3L6UR3	Urdu								
DSC3	21BSC3CHE3L	Chemistry-3	40	60	100	4	-	-	4	2
	21BSC3CHE3P	Chemistry Lab-3	25	25	50	-	-	4	2	4
DSC3	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
SEC2	21BSC3S2AI/ 21BSC3S2CHE	Artificial Intelligence/	25	25	50	1	-	2	2	2
VBC5	21BSC3V5PE3	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC6	21BSC3V6NC2	NCC/NSS/R&R (S&G) / Cultural	25	-	25	-	-	2	1	-
OEC3	21BSC3O3CHE3	Fuel chemistry & Environmental chemistry	40	60	100	3	-	-	3	2
OEC3A	21BSC3O3CHE3A [Only for B.Sc. in Sugar Sci & Tech]	Boiler Water Management	40	60	100	3	-	-	3	2
				Total Marks	**700**	**Semester Credits**			**25**	

SEMESTER-IV

Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			IA	SEE	Total	L	T	P		
L7	21BSC4L7LK4	Kannada	40	60	100	4	-	-	3	2
	21BSC4L7LFK4	Functional Kannada								
L8	21BSC4L8EN4	English	40	60	100	4	-	-	3	2
	21BSC4L8HI4	Hindi								
	21BSC4L8SN4	Sanskrit								
	21BSC4L8TE4	Telugu								
	21BSC4L8UR4	Urdu								
DSC4	21BSC4C4CHE4L	Chemistry-4	40	60	100	4	-	-	4	2
	21BSC4C4CHE4P	Chemistry Lab-4	25	25	50	-	-	4	2	4
DSC4	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
AECC 2	21BSC4AE2CI	Constitution of India	25	25	50	1	-	2	2	2
VBC7	21BSC4V5PE4	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC8	21BSC4V6NC3	NCC/NSS/ R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC4	21BSC4O4CHE4	Electrochemistry, corrosion and metallurgy	40	60	100	3	-	-	3	2
OEC4A	21BSC4O4CHE4A [Only for B.Sc. in Sugar Sci Technol]	Analytical Instrumentation	40	60	100	3	-	-	3	2
		Total Marks			**700**	**Semester Credits**			**25**	

Exit option with Diploma (100 credits)

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Chemistry **as Major Discipline**										
DSC5	21BSC5C5CHE5L	Chemistry-5	40	60	100	3	-	-	3	2
	21BSC5C5CHE5P	Chemistry Lab-5	25	25	50	-	-	4	2	4
DSC6	21BSC5C5CHE6L	Chemistry-6	40	60	100	3	-	-	3	2
	21BSC5C5CHE6P	Chemistry Lab-6	25	25	50	-	-	4	2	4
DSC5	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	4
VC1	21BSC5VC1	Vocational-I	40	60	100	3	-	-	3	2
VBC9	21BSC5V5PE5	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC10	21BSC5V6NC4	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
SEC3	21BSC5S3CHE3		25	25	50	1	-	2	2	2
Total Marks					**650**	**Semester Credits**			**22**	

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Chemistry **as Major Discipline**										
DSC7	21BSC6C6CHE7L	Chemistry-7	40	60	100	3	-	-	3	2
	21BSC6C6CHE7P	Chemistry Lab-7	25	25	50	-	-	4	2	4
DSC8	21BSC6C6CHE8L	Chemistry-8	40	60	100	3	-	-	3	2
	21BSC6C6CHE8P	Chemistry Lab-8	25	25	50	-	-	4	2	4
DSC6	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	4
VC2	21BSC6VC2	Vocational-II	40	60	100	3	-	-	3	2
INT1	21BSC6 INT1L	Internship	25	50	75	-	-	2	2	2
VBC1	21BSC6V5PE5	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC2	21BSC6V6NC4	NCC/NSS/R&R (S&G) / Cultural	25	-	25	-	-	2	1	-
SEC4	21BSC6S4CHE		25	25	50	1	-	2	2	2
Total Marks					**700**	**Semester Credits**			**24**	
Total Marks for BSC Program					**-**	**Total Credits for BSC Program**			**146**	

*Internship between 5th and 6th semester with 3-4 weeks

Chemistry Subject as a Minor Discipline

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC5 As a Minor Subject	21BSC5C5CHE5L	Chemistry-5	40	60	100	3	-	-	3	2
	21BSC5C5CHE5P	Chemistry lab-5	25	25	50	-	-	4	2	4

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC7 As a Minor Subject	21BSC6C6CHE7L	Chemistry -7	40	60	100	3	-	-	3	2
	21BSC6C6CHE7P	Chemistry Lab-7	25	25	50	-	-	4	2	4

Exit option with Bachelor of Science, B. Sc. Basic Degree (146 credits)

SEMESTER-VII										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Chemistry**(General) as Major Discipline**										
DSC9	21BSC7C9CHE9L	Chemistry-9	40	60	100	4	-	-	4	2
	21BSC7C9CHE9P	Chemistry Lab-9	25	25	50	-	-	4	2	4
DSC10	21BSC7C10CHE10L	Chemistry-10	40	60	100	4	-	-	4	2
	21BSC7C10CHE10P	Chemistry Lab-10	25	25	50	-	-	4	2	4
DSC11	21BSC7C11CHE11L	Chemistry-11	40	60	100	4	-	-	4	2
	21BSC7C11CHE11P	Chemistry Lab-11	25	-	25	-	-	4	2	4
DSE1	21BSC7E1CHE1L	Spectroscopy-1	40	60	100	4	-	-	4	4
DSE2	21BSC7E2CHE2L	Research Methodology	40	60	100	3	-	-	3	4
Total Marks					**650**	**Semester Credits**			**25**	

SEMESTER-VIII										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Chemistry**(General) as Major Discipline**										
DSC12	21BSC8C12CHE12L	Chemistry-9	40	60	100	4	-	-	4	2
	21BSC8C12CHE12P	Chemistry Lab-9	25	25	50	-	-	4	2	2
DSC13	21BSC8C13CHE13L	Chemistry-10	40	60	100	4	-	-	4	2
	21BSC7C13CHE13P	Chemistry Lab-10	25	25	50	-	-	4	2	2
DSC14	21BSC7C14CHE14L	Chemistry-11	40	60	100	4	-	-	4	2
	21BSC7C14CHE14P	Chemistry Lab-11	25	25	50	-	-	4	2	2
DSE3	21BSC8E3CHE3L	Spectroscopy-II	40	60	100	4	-	-	4	2
DSE4	21BSC8E4CHE4L	Research Project	50	100	150	-	-	8	4	2
Total Marks					**700**	**Semester Credits**			**26**	

Award of Bachelor of Science (Hons) degree in a Chemistry (197 credits)

Concept Note, Abbreviation Explanation and Coding:

Concept Note:

1. **CBCS** is a mode of learning in higher education which facilitates a student to have some freedom in selecting his/her own choices, across various disciplines for completing a UG/PG program.
2. A credit is a unit of study of a fixed duration. For the purpose of computation of workload as per UGC norms the following is mechanism be adopted in the University:
   One credit (01) = One Theory Lecture (L) period of one (1) hour.
   One credit (01) = One Tutorial (T) period of one (1) hour.
   One credit (01) = One practical (P) period of two (2) hours.
3. Course: paper/subject associated with AECC, DSC, DSEC, SEC, VBC, OEC, VC, IC and MIL
4. In case of **B.Sc**. **Once a candidate chose two courses/subjects of a particular two department in the beginning, he/she shall continue the same till the end of the degree/Hons, then there is no provision to change the course(s) and Department(s) in between.**
5. A candidate shall choose **one of the Department's courses as major and other Department course as minor in fifth and sixth semester and major course will get continued in higher semester.**
6. Wherever there is a practical there will be no tutorial and vice-versa
7. A major subject is the subject that's the main focus of Core degree/concerned.
8. A minor is a secondary choice of subject that complements core major/ concerned.
9. Vocational course is a course that enables individual to acquire skills set that are required for a particular job.
10. Internship is a designated activity that carries some credits involving more than **25 days** of working in an organization (either in same organization or outside) under the guidance of an identified mentor. Internship shall be an integral part of the curriculum.
11. **OEC: For non- chemistry students. Chemistry students have to opt for OEC from departments other than major and minor disciplines.**

Abbreviation Explanations:

1. AECC: Ability Enhancement Compulsory Course.
2. DSC: Discipline Specific Core Course.
3. DSEC: Discipline Specific Elective Course.
4. SEC: Skill Enhancement Course.
5. VBC: Value Based Course.
6. OEC: Open/Generic Elective Course
7. VC: Vocational Course.
8. IC: Internship Course
9. L1: Language One
10. L2: MIL
11. L= Lecture; T= Tutorial; P=Practical.
12. MIL= Modern Indian Language; English or Hindi or Telugu or Sanskrit or Urdu

Program Coding:

1. Code 21: Year of Implementation
2. Code BSC: BSC Program under the faculty of Applied Science of the University
3. Code 1: First Semester of the Program, (2 to 6 represent higher semesters)
4. Code AE: AECC, (C for DSC, S for SEC, V for VBC and O for OEC)
5. Code 1: First "AECC" Course in semester, similarly in remaining semester for such other courses
6. Code LK: Language Kannada, similarly Language English, Language Hindi, Language Telugu, Language Sanskrit, &Language Urdu
7. Code 1: Course in that semester.
8. CHE: Chemistry

Note: *All skill enhancement course (SEC) syllabus and title should be selected time to time notice from the university and/ or NEP committee accordingly.*

ASSESSMENT METHODS
Evaluation Scheme for Internal Assessment:

Theory:

Assessment Criteria	40 marks
1st Internal Assessment Test for30 marks 1 hr after 8 weeks and 2nd Internal Assessment Test for 30 marks 1 hr after 15 weeks. Average of two tests should be considered.	30
Assignment	10
Total	**40**

Assessment Criteria	25 marks
1st Internal Assessment Test for 20 marks 1 hr after 8 weeks and 2nd Internal Assessment Test for 20 marks 1 hr after 15 weeks. Average of two tests should be considered.	20
Assignment	05
Total	**25**

Practical:

Assessment Criteria	25 marks
Semester End Internal Assessment Test for 20 marks 2 hrs	20
Journal (Practical Record)	05
Total	**25**

Question Paper Pattern:

RANI CHANNAMMA UNIVERSITY
Department of Chemistry

Duration: 2hr ***I Semester B.Sc*** ***(****Chemistry****)***

Sub: **Code:** **Maximum Marks: 60**

a. Answer any SIX Questions from Question 1

b. Answer any Three in each Question from 2,3,4 and 5questions.

Q.No.1.	**Answer any SIX Questions (Two question from each Unit)** **a.** **b.** **c.** **d,** **e.** **f.** **g.** **h.**	**2X6=12**
Q.No.2.	**(Should cover entire unit-I)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.3.	**(Should cover Entire Unit-II)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.4.	**(Should cover Entire Unit-III)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.5.	**(Should cover Entire Unit-IV)** **a.** **b.** **c.** **d.**	**4X3=12**

BSc (Hons) Chemistry-Semester 1

Title of the Course: DSC-1: Subject code: 21BSC1C1CHE1L Paper: Chemistry – 1

Number of Theory Credits	Number of lecture hours/ semester	Number of practical credits	Number of practical hours / semester
4	56	2	56
Content of Theory Course 1			

Unit – 1 Analytical chemistry **14 hours**

Definitions of analysis, determination, measurement, techniques and methods. Classification of analytical techniques. Choice of an analytical method - accuracy, precision, sensitivity, selectivity, method validation. Figures of merit of analytical methods and limit of detection (LOD), Limit of quantification (LOQ)

Errors and treatment of analytical data: Limitations of analytical methods – Errors: Determinate and indeterminate errors, absolute error, relative error, minimization of errors. Statistical treatment of finite samples -mean, median, range, standard deviation and variance. Numerical problems

Titrimetric analysis: Basic principle of titrimetric analysis. Classification, Preparation and dilution of reagents/solutions. Preparation of ppm level solutions from source materials (salts), conversion factors.

Acid-base titrimetry: Theory, Titration curves for all type of acid- base titrations. Quantitative applications – selecting and standardizing a titrant,

Complexometric titrimetry: Indicators for EDTA titrations - theory of metal ion indicators, titration methods employing EDTA – direct and indirect determinations, Application determination of hardness of water.

Redox titrimetry: Titration curves, Theory of redox indicators, Applications of redox titrations.

Precipitation titrimetry: Titration curves, titrants and standards, indicators for precipitation titrations involving silver nitrate- Volhard's and Mohr's methods and their differences.

Unit - 2 Atomic structure & Periodicity of elements **14 hours**

Atomic Structure: Review of Rutherford's atomic model, Bohr's theory, Hydrogen atomic spectra. Derivation of radius and energy of an electron in hydrogen atom, limitations of Bohr's theory, dual behavior of matter and radiation, de Broglie's equations, Heisenberg Uncertainty principle and their related problems. Quantum numbers and their significance. Orbital shapes of *s,p,d and f* atomic orbitals, nodal planes. Rules for filling electrons in various orbitals, Electronic configurations of the atoms (atomic number up to 54).Concept of exchange energy. Anomalous electronic configurations. **9hrs**

Periodic properties of elements: Brief account on the following properties of elements with reference to s and p-block and trends in groups and periods. Effective nuclear

charge, screening effect, Slater rules, atomic and ionic radii, ionization enthalpy, electron gain enthalpy, and electronegativity, Pauling / Allred-Rochow scales of electronegativity**.** **5hrs**

Unit 3 Bonding in Organic Molecules and Mechanism of Organic reactions 14 hours

Classification and nomenclature of organic compounds, Hybridization, Shapes of organic molecules m Influence of hybridization on bond properties.

Nature of bonding in Organic molecules Types of chemical bonding, Formation of Covalent bond, localized and delocalized, conjugation and cross conjugation, concept of resonance, electronic displacements: Inductive effect, Electromeric effect, Resonance and Hyper conjugation with examples. Concept of resonance and aromaticity, Huckel rule, anti-aromaticity explanation with examples. **6hrs**

Mechanisms of Organic Reactions-I

Notations used to represent electron movements and directions of reactions- curly arrows, formal charges. Types of bonds breaking- homolytic and heterolytic. Types of reagents-Electrophiles, nucleophiles, nucleophilicity and basicity. Types of organic reactions- substitution, addition, elimination, rearrangement and pericyclic reactions, explanation with examples.

Chemistry of Aliphatic hydrocarbons: Carbon-Carbon Sigma bonds Chemistry of alkanes: Formation of alkanes, Wurtz reaction, Wurtz-Fittig reaction, Free radical substitutions Mechanism of Halogenation- relative reactivity and selectivity **8hrs**

Unit - 4 Gaseous State & Distribution Law 14hours

Gaseous state: Review of kinetic theory of gases, van der Waals equation of state Boyle temperature. Molecular velocity: Maxwell's Boltzmann distribution law of molecular velocities (most probable, average and root mean square velocities). Relation between RMS, average and most probable velocity and average kinetic energies (derivation not required). Collision frequency, collision diameter, Collision cross-section, collision number and mean free path. Critical phenomena: Andrews isotherms of CO_2, critical constants and their determination Relation between critical constants and van der Waals equation (Derivation), continuity of states, law of corresponding states. Numerical problems are to be solved wherever applicable. **8hrs**

Distribution Law: Nernst Distribution Law - Statement and its derivation. Distribution constant, factors affecting distribution constant, validity of Distribution Law, Modification of distribution law when molecules undergo a) Association b) Dissociation. Application of Distribution Law in Solvent extraction. Derivation for simple and multiple extraction. Principles of distribution law in Parkes Process of desilverisation of lead. Numerical Problems. **6hrs**

LEARNING OUTCOMES / COURSE OUTCOMES:

Chemistry as Discipline Specific Course (DSC)

B.Sc. Semester –I; CHEMISTRY-1

After successful completion of three year degree program in Chemistry a student should be able to;

1. Describe the dual nature of radiation and matter; dual behaviour of matter and radiation, de Broglie's equations, Heisenberg Uncertainty principle and their related problems.
2. Electronic configurations of the atoms.
3. Define periodicity, explain the cause of periodicity in properties, and classify the elements into four categories according to their electronic configuration.
4. Define atomic radii, ionisation energy, electron affinity and electronegativity, discuss the factors affecting atomic radii, describe the relationship of atomic radii with ionisation energy and electron affinity, describe the periodicity in atomic radii, ionization energy, electron affinity and electronegativity.
5. Explain bond properties, electron displacement effects (inductive effect, electrometric effect, resonance effect and Hyper conjugation effect). Steric effect and their applications in explaining acidic strength of carboxylic acids, basicity of amines.
6. Understand basic concept of organic reaction mechanism, types of organic reactions, structure, stability and reactivity of reactive intermediates.
7. Describe important characteristics of configurationally and conformational isomers. Practice and write conformational isomers of ethane, butane and cyclohexane.
8. Understand the various concepts of geometrical isomerism and optical isomerism. Describe CIP rules to assign E,Z notations and R& S notations. Explain D and L configuration and *threo* and *erythro* nomenclature.
9. Explain racemic mixture and racemisation, resolution of racemic mixture through mechanical separation, formation of diastereomers, and biochemical methods, biological significance of chirality.
10. Explain the existence of different states of matter in terms of balance between intermolecular forces and thermal energy of the particles. Explain the laws governing behavior of ideal gases and real gases. Understand cooling effect of gas on adiabatic expansion.
11. Describe the conditions required for liquefaction of gases. Realise that there is continuity in gaseous and liquid state.
12. Explain properties of liquids in terms of intermolecular attractions.
13. Understand principles of titrimetric analysis.
14. Understand principles of different type's titrations. Titration curves for all types of acids – base titrations.
15. Gain knowledge about balancing redox equations, titration curves, theory of redox indicators and applications.
16. Understand titration curves, indicators for precipitation titrations involving silver nitrate-Volhard's and Mohr's methods and their differences.
17. Indicators for EDTA titrations - theory of metal ion indicators. Determination of hardness of water.

CHEMISTRY LAB (Inorganic and Organic Analyses)

After studying this course and performing the experiments set in it student will be able to:

1. Understand and practice the calibration of glasswares (burette, pipette, volumetric flask).
2. Basic concepts involved in titrimetric analysis, primary standard substances, preparation of standard solutions.
3. Explain the principles of acid-base, redox and iodometric titrations.
4. Work out the stoichiometric relations based on the reactions involved in the titrimetric analysis.
5. Based on principles of titrimetric analysis student can perform
6. Describe the significance of organic quantitative analysis.
7. Determine the amount of phenol, aniline, amide, ester and formaldehyde in a given solution by performing blank titration and main titrations.
8. Determine aspirin in the tablet by hydrolysis method.

Chemistry Lab-1: List of experiments to be conducted
Course code: 21BSC1C1CHE1P; Paper: Chemistry Lab-1

PART-A

1. Determination of sodium carbonate and sodium bicarbonate in a mixture
2. Determination of alkali present in soaps/detergents
3. Determination of oxalic acid using potassium permanganate solution
4. Standardization of EDTA solution and determination of hardness of water
5. Determination of phenol/aniline by bromination method
6. Determination of acetamide/ethylbenzoate by hydrolysis method

PART-B

7. Preparation of acetanilide from aniline using Zn/acetic acid (Green method)
8. Synthesis of p-nitro acetanilide from acetanilide using nitrating mixture
9. Bromination of acetanilide (i) Conventional method and /or
   (ii) with ceric ammonium nitrate and potassium bromide (Green method).
10. Hydrolysis of methyl m-nitrobenzoate to m-nitrobenzoic acid (Conventional method)

Examination

In the practical examination, a batch of maximum 15 (Fifteen) students may be made. Anyone experiment from Part-A or B can be given by selection done by the students based on lots. **Viva questions must be asked on any of the experiments prescribed in the practical syllabus.**

Part A: Distribution of marks

1. Accuracy: 12 (6+6) Marks
2. Technique and presentation: 03Marks
3. Reactions and Calculations: 05 Marks
4. Viva: 05 Marks

Total 25 marks

Deduction of marks for accuracy: ±0.4 CC – 6 marks, ± 0.6 CC- 04 marks, ±0.8 CC- 02 marks, ±1.0 CC - 01 marks. Above ±1.0 CC - 00 marks

Part B: Distribution of Marks:

1. Reaction & Mechanism-04 marks,
2. Calculation of theoretical yield – 02 mark,
3. Observed yield -10 marks,
4. M.P- 004 marks,
5. Viva-Voce-5 marks,

Total=25 marks.

Deduction of marks for observed yield: Less than 10% - 10 marks, 11-15% - 8 marks, 16-20% - 6 marks, 21-25 % - 4 marks & above 25% - zero mark.

References

1. Vogel's Textbook of Quantitative Chemical Analysis, J. Mendham, R.C. Denney, J.D. Barnes and M.J.K. Thomas, 6th edition, Third Indian Reprint, Pearson Education Pvt. Ltd.(2007).
2. Fundamentals of Analytical Chemistry, D.A. Skoog, D.M. West, Holler and Crouch, 8th edition, Saunders College Publishing, New York (2005).
3. Analytical Chemistry, G.D. Christian, 6th edition, Wiley-India (2007).
4. Practical Volumetric Analysis, Peter A C McPherson, Royal Society of Chemistry, Cambridge, UK (2015).
5. Morrison, R. N. & Boyd, R. N. *Organic Chemistry*, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education)
6. Finar, I. L. *Organic Chemistry (Volume I),* Dorling Kindersley (India) Pvt. Ltd. (Pearson Education)
7. McMurry, J. E. *Fundamentals of Organic Chemistry*, 7th Ed. Cengage Learning India Edition, 2013
8. Organic Reaction mechanism by V. K. Ahluwalia and K. Parashar (Narosa Publishers).
9. Organic Chemistry by S. M. Mukherji, S. P. Singh and R. K. Kapoor. (Narosa Publishers)
10. A Guide book to mechanism in Organic Chemistry by Peter Sykes. Pearson.

BSc Semester 1 – B.Sc/(Hons) Chemistry

Title of the Course: Open Elective (OE-1): CHEMISTRY IN DAILY LIFE

Course code: 21BSC1O1CHE1

Courses	Credits	No. of Classes/ Week	Total No. of Lectures/ Hours	Duration of Exam in hrs	Internal Assessment Marks	Semester End Exam Marks	Total Marks
Theory	03	03	42	2	40	60	100
Content of Theory Course 1							**42 Hrs**

Unit – 1 **14 hours**

Dairy Products: Composition of milk and milk products. Analysis of fat content, minerals in milk and butter. Estimation of added water in milk. Beverages: Analysis of caffeine in coffee and tea, detection of chicory in coffee, chloral hydrate in toddy, determination of methyl alcohol in alcoholic beverages.

Food additives, adulterants, and contaminants- Food preservatives like benzoates, propionates, sorbates, disulphites. Artificial sweeteners: Aspartame, saccharin, dulcin, sucralose, and sodium cyclamate. Flavors: Vanillin, alkyl esters (fruit flavors), and monosodium glutamate.

Artificial food colorants: Coal tar dyes and non-permitted colors and metallic salts. Analysis of pesticide residues in food.

Unit – 2 **14 hours**

Vitamins: Classification and Nomenclature. Sources, deficiency diseases, and structures of Vitamin A1, Vitamin B1, Vitamin C, Vitamin D, Vitamin E & Vitamin K1.

Oils and fats: Composition of edible oils, detection of purity, rancidity of fats and oil. Tests for adulterants like argemone oil and mineral oils. Halphen test.

Soaps & Detergents: Definition, classification, manufacturing of soaps and detergents, composition and uses.

Unit – 3 **14 hours**

Chemical and Renewable Energy Sources:

Principles and applications of primary & secondary batteries and fuel cells. Basics of solar energy, future energy storer.

Polymers: Basic concept of polymers, classification and characteristics of polymers. Applications of polymers as plastics in electronic, automobile components, medical fields, and aerospace materials. Problems of plastic waste management. Strategies for the development of environment-friendly polymers

COURSE OUTCOMES: OEC-1 Chemistry

On completion of the course students will be able to:

- Understand the chemical constituents in various day today materials using by a common man.
- Understand the chemical constituents in fertilizers, insecticides and pesticides, chemical explosives etc.
- Understand the chemical constituents in polymers, surface coatings etc.

References Text Books

1. B. K. Sharma: Introduction to Industrial Chemistry, Goel Publishing, Meerut (1998)
2. Medicinal Chemistry- Ashtoush Kar.
3. Analysis of Foods – H.E. Cox: 13.
4. Chemical Analysis of Foods – H.E. Cox and Pearson.
5. Foods: Facts and Principles. N. Shakuntala Many and S. Swamy, 4thed. New Age International (1998)
6. Physical Chemistry – P l Atkins and J. de Paula – 7thEd. 2002, Oxford University Press.

BSc Semester 1 – B.Sc (Hons) Chemistry

Title of the Course: Open Elective (OE-1): SUGARCANE PRODUCTION TECHNOLOGY

[Only for B.Sc. Sugar Science and Technology students]

Course code: 21BSC1O1CHE1À

Courses	Credits	No. of Classes/ Week	Total No. of Lectures/ Hours	Duration of Exam in hrs	Internal Assessment Marks	Semester End Exam Marks	Total Marks
Theory	03	03	42	2	40	60	100

Unit – I **10**

Hours

Introduction

Origin, History and distribution of sugarcane growing regions of India. The taxonomic classification of sugarcane. Morphology – stem of sugarcane. Economic root system and inflorescence in sugarcane and growth phases in sugarcane. Economic important cane v/s beet sugar. Major varieties of sugarcane cultivated in Karnataka and their features.

Ecology

Temperature, Rainfall, Relative humidity (RH), Atmospheric CO_2 concentration, Sunlight, Frost, Wind, Microclimate, Effect of greenhouse gases (GHGs) on cultivation of sugarcane.

Unit – II **11 Hours**

Basic concepts of sugarcane physiology

Photosynthesis, factors of influencing photosynthesis, effect of temperature, photoperiod, Transpiration, Growth promoters, Growth inhibitors.

Soil

Elements of Soils and their Characters; Definition of soil. Importance and functions of soils. Soil profile, soil particles, structure, texture, density, porosity, physical properties, soil pH, Electrical Conductivity and Ion exchange process.

Soil organic matter, importance, characters and carbon and nitrogen ratio and its importance. Acid soils, saline and alkaline soils, their characters, formation, problems and their management practices. Meaning of soil fertility, soil fertility deciding factors, plant nutrients and their classification. Essential nutrients, Forms of nutrients required by plant, movement of nutrients towards roots, availability of nutrients. Organics, meaning and classification / types. Nitrogen, Phosphorus and potassium fertilizers and their characters and reactions in the soil. Complex, Mixed and liquid fertilizers and micronutrient fertilizers. Soil analysis, Recommendations of fertilizers based on soil test results.

Unit – III **11 Hours**

Production practices

Land preparation: Preparatory tillage, green manuring and application of bulky manures, seed material and seed rate, geometry of planting and planting depth, planting period, agronomy of late planted crop, planting methods, mechanical planters, aftercare. Sugarcane based cropping and farming systems, companion cropping in sugarcane, sugarcane based farming systems.

Nutrition and fertilizer management

Time and method of N application, bio-fertilizers, Time and method of applying Bio-fertilizers, Ex situ composing of trash and press mud (modified Japanese method), Vermi-composting, major nutrients and micro nutrients.

Weed management

Integrated weed control, herbicide, antidotes or softeners, surfactants and adjuvant, control of noxious, perennial weeds and methods of weed control measures.

Water management

Irrigation water requirement, Evapo-transpiration (ET) Water use efficiency (WUE), Different methods of Irrigation, Furrow method of irrigation Sprinkler irrigation, and Drip or trickle Irrigation.

Management of seed cane

Sett treatment, agronomy of seed cane, thermotherapy or heat therapy and Three-tier seed programme. Tissue culture and its importance in seed programme.

Unit – IV **10 Hours**

Ripening, cane maturity and harvesting

Ripening methods, Methods of cane purchase, Harvest strategy, Pre-harvest maturity survey, Methods of harvest, Mechanized harvesting. Quality assessment of late harvested cane, Composition of sugarcane and juice and quality parameters of juice, Post harvest losses and measures to reduces the losses. Cost of cultivation of sugarcane.

Management of ratoon cane

Importance of Ratoon management Ratoon cane Management practices, Time and method of fertilizer application, yield attributes of ratoon cane, ratoon v/s plant cane. Water requirement, gap filling, trash management, management of weeds, pests, and diseases associated with ratoon effect of growth regulators on sprouting and ratoon yield.

Pests and disease management

Pests: Shoot borer, top borer, internode borer, stalk borer, gurudaspur borer, root borer, White Grubs, Termites, Scale insect: (Green), Pyrillapurpusilla, Walker), White files, Non-insect pests, Biological control of sugarcane pests, parasites.

Diseases: Red rot, Smut, Wilt, Pineapple disease, Yellow Leaf Disease (YLD), Leaf spots, Ratoon stunning disease (RSD), Grassy Shoot Disease (GSD), Nematodes and Mosaic.

Reference Books:

1. Hartmann and Kester's – Plant propagation – Principles and practices – Hudscan T. Hartmann, Dale E. Kester, Fred T. Davies, Jr. Robert L. Geneve.
2. Textbook of Plant Physiology – C. P. Malik
3. Diseases of Crop plants in India – G. Rangaswami and A. Mahadevan
4. Plant Pathology – R. S. Mehrotra
5. Practical cytology – Applied Genetics and Biostatistics – H. K. Goswami and Rajeev Goswami
6. Recent Advances in Plant Diseases Vol-1 to 5-K.M. Chandniwala
7. Introduction to Principles of Plant Pathology – R.S. Singh
8. An Introduction to Plant Anatomy – Authur R. Eames and Laurence H. Mac Deniels.
9. Genetics and Plant Breeding – E. B. Babcock
10. Plant Taxonomy – O.P. Sharma
11. Plant Breeding – Theory and Techniques – S.K. Gupta
12. Breeding Asian Field Crops – John Milton Poehlman and DhirendranathBorthakur.
13. Crop Production and Field Experimentation – Dr. V. G. Vaidya, K. R. Sahasrabudhe, Dr. V. S. Khuspe.
14. Agricultural Problems of India – A. N. Agrwal and Kundam Lal
15. Elementary Principles of Plant Breeding – H.K. Chaudhari
16. Trends in Agricultural Insect Pest Management – G.S. Dhaliwal and Ramesh Arora.

SKILL ENHANCEMENT COURSE IN CHEMISTRY

Title of the Course: SEC: Course code: 21BSC1E1CS1
Paper name: Digital Fluency

Courses	Credits	No. of Classes/Week	Total No. of Lectures/Hours	Duration of Exam in hrs	Internal Assessment Marks	Semester End Exam Marks	Total Marks
Theory	02	01	11	---	---	10	10
Practical		02	22	2	25	15	40
				Total	25	25	50

BSc Semester 2 – Chemistry (Hons)

Title of the Course: DSC-2: Subject code: 21BSC1C1CHE2LPaper: Chemistry – 2

Number of Theory Credits	Number of lecture hrs/ semester	Number of practical Credits	Number of practical hrs/ sem
4	56	**2**	**56**
Content of Theory Course 2			**56Hrs**

Unit – 1 Chemical bonding, molecular structure 14hours

Ionic Bonding*:* General characteristics of ionic compounds. Energy considerations in ionic bonding, lattice energy and solvation energy and their importance in the context of stability and solubility of ionic compounds. Born-Landé equation and calculation of lattice energy. Born-Haber cycle and its applications.

Polarizing power and polarizability: Fajan's rules, ionic character in covalent compounds and percentage of ionic character.

Covalent bonding: General characteristics of covalent compounds. VB approach, shapes of some inorganic molecules and ions on the basis of VSEPR and hybridization with suitable examples of linear, trigonal planar, square planar, tetrahedral, trigonal bipyramidal and octahedral arrangements. Concept of resonance and resonating structures of NO_3^-, CO_3^{2-} and SO_4^{2-}.

Molecular Orbital Theory: LCAO method, bonding and antibonding MOs and their characteristics for *s-s*, *s-p* and *p-p* combinations of atomic orbitals, nonbonding combination of orbitals, MO treatment of homonuclear diatomic molecules: H_2,O_2,N_2 and ions of $1^{st}$and 2^{nd}periods: He_2^{+1}, $O_2^{+1}$and heteronuclear diatomic molecules such as CO,NO and NO^+. Comparison of VB and MO approaches. Numerical problems are to be solved wherever applicable.

Unit - 2 Acidic Strengths of Organic compounds and Stereochemistry 14 hours

Strengths of Organic acid and bases: Comparative study with emphasis on factors effecting pKa values. Relative strength of aliphatic and aromatic carboxylic acids-Acetic acid and chloroacetic acid, acetic acid and propionic acid, acetic acid and Benzoic acid. Steric effect-Relative stability of trans and cis-2-butene.

Concept of Confirmational analysis with reference to Ethane & n-Butane with staggered & eclipsed confirmations & energy profile diagrams. **4hrs**

Stereoisomersim: Definition of stereoisomerism, conformational isomers and configurational isomers (distinction between conformation and configuration). Newman, Sawhorse and Fischer projection formulae and their interconversions.

Geometrical isomerism: Definition, reason for geometrical isomerism, E and Z notation - CIP rules and examples, determination of configuration of geometric isomers by dipole moment method and anhydride formation method, *syn* and *anti* isomers in compounds containing C=N.

Optical isomerism: Chirality/asymmetry, enantiomerism, diastereomerism and meso compounds. R and S notations (compounds with two asymmetric centers), D and L configurations and *threo* and *erythro* nomenclature, racemic mixture and racemization,

Resolution: Definition, Resolution of racemic mixture by: i) Mechanical separation ii) Formation of diastereomers iii) Biochemical methods. Biological significance of chirality. **10hrs**

Unit - 3 Solids &Liquid crystals **14 hours**

Liquid Crystals: Explanation, classification with examples- Smectic, nematic, cholesteric, disc shaped and polymeric. Structures of nematic and cholesteric phases-molecular arrangements in nematic and cholesteric liquid crystals. Applications of liquid crystals in LCDs and thermal sensing. **6hrs**

Solids: Types of solids. Unit cell and space lattice, anisotropy of crystals, size and shape of crystals, Laws of Crystallography: Law of constancy of interfacial angles, Law of rational indices, Law of symmetry, Symmetry elements, X–Ray diffraction by crystals: Bragg's law and derivation of Bragg's equation, Structure of NaCl. KCl and CsCl, Defects in crystals, glasses and liquid crystals. Numerical problems. **8hrs**

Unit - 4 Chemical Kinetics I, Liquid state & Gravimetric Analysis **14hours**

Chemical Kinetics I: Review of reaction rates, order and molecularity. Factors affecting rates of reaction: concentration pressure, temperature, catalyst, etc. Examples for different orders of reactions. Derivation of integrated rate equations for zero and second order reactions (both for equal and unequal concentrations of reactants). Half–life of a reaction (numerical problems). Methods for determination of order of a reaction by half-life period and differential equation method. **3hrs**

Liquid state: Molecular forces and general properties of liquids**.**

Surface tension: surface tension, surface energy, effect of temperature on surface tension, shapes of liquid drops and soap bubbles, capillary action, determination of surface tension by capillary rise method, drop weight and drop number methods using stalagmometer. Effect of temperature on surface tension. Parachor, Additive and constitutive properties: atomic and structural parachor. Elucidation of structure of benzene and benzoquinone. .

Viscosity: Definition, viscosity coefficient, fluidity, molecular viscosity, relative viscosity and absolute viscosity, determination of coefficient of viscosity using Ostwald viscometer. Effect of temperature, size, weight, shape of molecules and intermolecular forces.

Refractive index: Definition, Specific and molar refraction. Determination of refractive index using Abbe's refractometer. Additive and constitutive properties: Numerical problems are to be solved wherever applicable. **7hrs**

Gravimetric Analysis: Stages in gravimetric analysis, requisites of precipitation, factors influencing precipitation, co-precipitation and post-precipitation. Structure, specificity, conditions and applications of organic reagents such as salicylaldoxime, oxine, dimethylglyoxime, cupron in inorganic analysis. **4hrs**

Reference Books

1. **Inorganic Chemistry**

1. Lee, J.D. *Concise Inorganic Chemistry* ELBS, 1991.
2. Cotton, F.A., Wilkinson, G.& Gaus, P.L. *Basic InorganicChemistry*,3rd ed.,Wiley.
3. Douglas, B.E., McDaniel, D.H. &Alexander, J. J. *Concepts and Models in Inorganic Chemistry*, John Wiley & Sons.
4. Huheey, J. E., Keiter, E.A., Keiter, R.L. &Medhi, O.K. *Inorganic Chemistry: Principles of Structure and Reactivity*, Pearson Education India,2006.
5. Shriver, D.F. & Atkins, P.W. *Inorganic Chemistry*, Oxford University Press.
6. Wulfsberg, G. *Inorganic Chemistry*, Viva Books Pvt. Ltd.
7. Rodgers, G.E. *Inorganic &Solid State Chemistry*, Cengage Learning India Ltd., 2008.
8. Mark Weller and Fraser Armstrong, 5th Edition, Oxford University Press (2011-2012) Adam, D.M. *Inorganic Solids: An introduction to concepts in solid-state structural chemistry*. John Wiley & Sons, 1974.
9. G.L. Miessler & Donald A. Tarr: *Inorganic Chemistry*, Pearson Publication.
10. Mahan, B.H. *University Chemistry* 3rd Ed. Narosa (1998).
11. Petrucci, R.H. *General Chemistry* 5thEd. Macmillan Publishing Co.: New York (1985).

Organic Chemistry

1. Organic Chemistry-P. Y. Bruice, 7th Edition, Pearson Education Pvt. Ltd., New Delhi (2013).
2. Heterocyclic Chemistry- R. K. Bansal, 3rd Edition, New- Age International, New Delhi,2004
3. McMurry, J.E. *Fundamentals of Organic Chemistry*,7thEd. Cengage Learning India Edition, 2013.
4. Sykes, P.*A Guidebook to Mechanism in Organic Chemistry*, Orient Longman, New Delhi(1988).
5. Stereochemistry-Conformation and Mechanism-P. S. Kalsi, Wiley-Eastern Ltd, New Delhi.
6. Morrison, R.T.&Boyd,R.N.*OrganicChemistry*,Pearson,2010.
7. Bahl,A.&Bahl,B.S.*AdvancedOrganicChemistry*,S.Chand,2010.
8. Graham Solomons, T.W., Fryhle, C.B. &Snyder, S.A. *Organic Chemistry*, John Wiley & Sons(2014).
9. Organic Chemistry Volume-I, II- I. L. Finar, 6th Edition, ELBS London (2004).
10. Organic Chemistry-F.A. Carey, 4th Edition, McGraw Hill (2000).
11. Modern Organic Chemistry - R.O.C. Norman and D.J. Waddington, ELBS, 1983
12. Understanding Organic reaction mechanisms - A. Jacobs, Cambridge Univ. Press, 1998
13. Organic Chemistry - L.Ferguson, Von Nostrand, 1985
14. Organic Chemistry - M. K. Jain, Nagin & Co., 1987
15. Organic Chemistry- Mehta and Mehta.

Physical Chemistry

1. Barrow, G.M. *Physical Chemistry* Tata Mc Graw-Hill(2007).
2. Castellan, G.W. *Physical Chemistry* 4th Ed.Narosa(2004).
3. Kotz, J.C., Treichel, P.M. & Townsend, J.R. *General Chemistry* Cengage Learning India Pvt.Ltd.,New Delhi(2009).
4. P.W. Atkins: PhysicalChemistry.
5. W.J. Moore: PhysicalChemistry
6. Text Book of Physical Chemistry - P.L. Soni, S. Chand & Co.,1993
7. Text Book of physical chemistry - S. Glasstone, Mackmillan India Ltd., 1982

8. Principles of Physical Chemistry - B. R. Puri, L.R. Sharma and M.S.Patania, S.L.N. Chand & Co. 1987
9. Physical Chemistry - Alberty R. A. and Silbey, R.J.John Wiley and sons, 1992
10. Physical Chemistry - G.M.Barrow, McGraw Hill, 1986
11. Physical Chemistry(3rd Edition) - Gilbert W. Castilian, Narosa Publishing House,1985
12. Chemical Kinetics by K. J. Laidler, Tata McGraw Hill Publishing Co., New Delhi.
13. Kinetics and Reaction Mechanisms by Frost and Pearson, Wiley, New York.

Analytical Chemistry

1. Jeffery, G.H., Bassett, J., Mendham, J. & Denney, R.C. *Vogel's Textbook of Quantitative Chemical Analysis*, JohnWiley&Sons,1989.
2. Willard, H.H., Merritt, L.L., Dean, J. & Settle, F.A. *Instrumental Methods of Analysis*,7thEd. Wadsworth Publishing Company Ltd.,Belmont, California, USA, 1988.
3. Christian, G.D; *Analytical Chemistry*, VI Ed. John Wiley & Sons, NewYork, 2004.
4. Harris, D.C. *Exploring Chemical Analysis*, Ed.New York, W.H. Freeman,2001.
5. Skoog, D.A. Holler F.J. & Nieman, T.A. *Principles of Instrumental Analysis*, Cengage Learning India Ed.

Content of Chemistry Lab-2: List of Experiments to be conducted
Title of the Course: DSC-2: Subject code: 21BSC1C1CHE2P; Paper: Chemistry Lab-2

PART-A Inorganic Chemistry

A.1. TITRIMETRY

1. Determination of carbonate and hydroxide present in a mixture.
2. Standardization of potassium permanganate solution and determination of nitrite in a water sample
3. Determination of chlorine in bleaching powder using iodometric method.

A.2. GRAVIMETRY

1. Determination of Ba^{2+} as BaSO4
2. Determination of Cu^{2+} as CuSCN

PART-B Physical Chemistry

1. Determination of density using specific gravity bottle and viscosity of liquids using Ostwald's viscometer (Ethyl acetate, Toluene, Chloroform, Chlorobenzene or any other non-hazardous liquids).
2. Study of the variation of viscosity of sucrose solution with the concentration of a solute.
3. Determination of the density using specific gravity bottle and surface tension of liquids using Stalagmometer (Ethyl acetate, Toluene, Chlorobenzene, any other non-hazardous liquids.
4. Study of variation of surface tension of detergent solution with concentration.
5. Determination of specific and molar refraction by Abbes Refractometer. (Ethyl acetate, Methyl acetate, Ethylene Chloride).
6. Determination of the composition of liquid mixture by refractometry. (Toluene & Alcohol, Water & Sucrose).

** Standard solution is to be prepared by students for both in regular and in practical examination.

Examination

In the practical examination, a batch of maximum 15 (Fifteen) students may be made. Anyone experiment from Part-A or B can be given by selection done by the students based on lots. **Viva questions must be asked on any of the experiments prescribed in the practical syllabus.**

Part A1: Distribution of marks

1. Accuracy: 12 (6+6) Marks
2. Technique and presentation: 03Marks
3. Reactions and Calculations: 05 Marks
4. Viva: 05 Marks

Total 25 marks

Deduction of marks for accuracy: ±0.4 CC – 6 marks, ± 0.6 CC- 04 marks, ±0.8 CC- 02 marks, ±1.0 CC - 01 marks. Above ±1.0 CC - 00 marks

Part A2: Distribution of marks

1. Accuracy: 12 Marks
2. Technique and presentation: 03Marks
3. Reactions and Calculations: 05 Marks
4. Viva: 05 Marks

Total 25 marks

Deduction of marks for accuracy : ±6mg – 12 marks, ± 7 mg- 10 marks, ±8mg - 08 marks, ±10 mg - 06 marks. Above 10mg - 00 marks

Part B: Distribution of marks

1. Accuracy: 12 Marks
2. Technique and presentation: 03marks
3. Graphs and Calculations: 05 Marks
4. Viva: 05 Marks

Total 25 marks

Deduction of marks for accuracy: Error up to 5% - 12 marks, 6 - 10% 09 marks, 11-15% 6 marks, 16 % or above 3 marks.

Open Elective Course-Chemistry

Title of the Course: OEC-2: Subject code: 21BSC1O2CHE2; Paper: Molecules of Life
B.Sc. Semester –II

Course	Credits	No. of Classes/ Week	Total No. of Lecture Hours	Duration of Exam in hrs	Internal Assessment Marks	Semester End Exam Marks	Total Marks
Theory	03	03	42	2	40	60	100

UNIT I

Carbohydrates

Sugars, non-sugars, reducing and non-reducing sugars. Occurrence and general properties of glucose and fructose. Open chain and Haworth ring structures of glucose and fructose. Epimers, mutarotation and anomers.

Disaccaharides: Occurance of disaacharides (Sucrose, Maltose and Lactose). Glycosidic linkage in disaccharides. Ring structures of sucrose, maltose and lactose. Polysaccharides: Starch – monomer units, glycosidic linkage, components-difference in their structure (explanation only) and solubility in water. Cellulose and glycogen– monosaccharide, glycosidic linkage, structure (explanation only). Biological importance of carbohydrates **8hrs**

Amino Acids, Peptides and Proteins

α- amino acids , general formula, zwitter ion form of α- amino acid, general formula.Isoelectric point and its importance.Classification of amino acids as essential and non-essential-examples. Configuration of optically active α-amino acids (found in proteins). Peptide bond. Proteins: classification based on molecular shape–fibrous and globular, examples. Structure of protein – qualitative idea about primary, secondary, tertiary, and quaternary structures (diagrams not required).Denaturation of protein. **8hrs**

UNIT II

Enzymes and correlation with drug action

Mechanism of enzyme action, factors affecting enzyme action, Co-enzymes and cofactors and their role in biological reactions, Specificity of enzyme action (including stereo specificity),Enzyme inhibitors and their importance, phenomenon of inhibition (Competitive and Non-competitive inhibition including allosteric inhibition). **7hrs**

Drug action- Receptor theory. Structure–activity relationships of drug molecules, binding role of –OH group, -NH_2 group, double bond and aromatic ring. **4hrs**

Oils and fats

Biological Importance of oils and fats. Fatty acids (saturated, unsaturated fatty acids, formation of triglycerides and general formula of triglycerides. Chemical nature of oils and fats-saponification, acid hydrolysis, rancidity and its prevention methods, refining of oils, hydrogenation of oils, drying of oils. Iodine value.

Introduction to lipids, classification. Biological importance of triglycerides, phospholipids, glycolipids, and steroids (cholesterol). **6hrs**

UNIT III

Nucleic Acids

Components of nucleic acids: Adenine, guanine, thymine and cytosine (Structure only), other components of nucleic acids, Nucleosides and nucleotides (nomenclature), Structure of polynucleotides; Structure of DNA (Watson-Crick model) and RNA (types of RNA), Genetic Code, Biological roles of DNA and RNA: Replication, Transcription and Translation. **6hrs**

Vitamins and Hormones

Classification and biological significance, source and structure of Vitamin A, B1 (thiamine), B2 (riboflavin), B6 (pyridoxine), α-tocopherol, K1 (phylloquinone), C (ascorbic acid). Deficiency diseases of vitamins,

Hormones: definition, classification with examples, functions and deficiency diseases of hormones. **5hrs**

Course Outcome / Learning Outcome:

After studying this paper the student would be able to

1. Acquire knowledge about different types of sugars and their chemical structures.
2. Identify different types of amino acids and determine the structure of peptides.
3. Explain the actions of enzymes in our body and interpret enzyme inhibition.
4. Predict action of drugs. Depict the biological importance of oils and fats. Importance of lipids in the metabolism Differentiate RNA and DNA and their replication. Explain production of energy in our body.

Reference Books:

1. Morrison, R. T. & Boyd, R. N. *Organic Chemistry*, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
2. Finar, I. L. *Organic Chemistry* (*Volume 1*), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
3. Finar, I. L. *Organic Chemistry* (*Volume 2)*, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
4. Nelson, D. L. & Cox, M. M. *Lehninger's Principles of Biochemistry 7th Ed.,*
5. W. H. Freeman. Berg, J.M., Tymoczko, J.L. &Stryer, L. *Biochemistry*, 2002.

Open Elective Course-Chemistry-2A

Title of the Course: OEC-2A: Subject code: 21BSC1O2CHE2A;

[Only for B.Sc. Sugar Science and Technology students]

Paper: SUGAR FACTORY CHEMICAL CONTROL

B.Sc. Semester –II

Courses	Credits	No. of Classes/ Week	Total No. of Lectures/Hours	Duration of Exam in hrs	Internal Assessment Marks	Semester End Exam Marks	Total Marks
Theory	03	03	42	2	40	60	100

Unit – I **11 Hours**

General: Weighment system & estimation of % cane figures – MJ/imbibition/ bagasse, Calculation for estimation of Pol in bagasse, Pol in MJ, Pol % cane

Unit – II **11 Hours**

Milling control: Fundamental equations for milling control**,** Mill extraction, fiber % cane, fiber % bagasse, Estimation of RME, Deer & RME (Mittal), Imbibition % cane, Imbibition % fibre, dilution indicator

Unit – III **10 Hours**

Sugar balance and its losses – Estimation of sugar losses –bagasse/filter cake/ molasses/ recovery/ unknown, Estimation of Pol balance, RS balance and total losses.
Available sugar / available molasses, General stock taking, Reduced boiling house control,

Unit – IV **10 Hours**

Boiling house recovery, Reduced BHR, Purity drop, % exhaustion, Massecuite % cane, Steam % cane

Overall: Preparation of daily manufacturing report (DMR),RT(8)C,RT(7)C.

Reference Books:

1. Training manual for sugar mills; Mangal Singh; Somaiya publications Pvt.Ltd. Mumbai.
2. Efficient Management of sugar factories, Mangal Singh, Somaiya publication Pvt., Ltd. Bombay
3. Cane Sugar Manufacture in India, Kulkarni, D.P., The Sugar Technologists Association of India N.Delhi.
4. System of Technical control for cane sugar factories in India; Varma, N.C. The Sugar Technologists Association of India New Delhi.

DSC-3: Semester-III: Chemistry-3

Number of Theory Credits	Number of lecture hrs/semester	Number of practical Credits	Number of practical hrs/ sem
4	56	**2**	**56**
Content of Theory Course 3			**56Hrs**

Workload:4Hours/Week.

Course objectives:

1. Interrelationship among frequency, wavelength and wave number and importance of validation parameters of an instrumental method will be taught
2. Principle,instrumentationandapplicationsofspectrophotometry,nephelometry and turbidometry will be taught
3. Fundamentals of separation methods and principles of paper, thin layer and column chromatography will be taught
4. Principle, types and applications of solvent extraction will be taught
5. Principle and mechanism of ion-exchange, types of resins and domestic and industrial applications of ion-exchange chromatography will be taught
6. The concept of mechanism and its importance will be taught to the student
7. Concept and importance of intermediates inorganic chemistry will be taught taking proper examples
8. The various techniques for identification of reaction mechanism will be taught to the student taking proper examples
9. Concept of stereochemistry and its importance will be taught.
10. The various projection formulae and the techniques of designating the molecules into R, S, D, L will be taught taking proper examples
11. The theory and concept of Cis-,Trans-isomerism and its importance and the techniques to differentiate between them will be taught taking examples

Course Specific Outcomes

After the completion of this course, the student would be able to

1. Understand the importance of fundamental law and validation parameters in chemical analysis
2. Know how different analytes in different matrices (water and real samples) can be determined by spectrophotometric nephelometric and turbidometric methods.
3. Understand the requirement for chemical analysis by paper, thin layer and column chromatography.
4. Apply solvent extraction method for quantitative determination of metal ions in different samples
5. Utilize the ion-exchange chromatography for domestic and industrial applications
6. Explain mechanism for a given reaction.
7. Predict the probable mechanism for a reaction. explain the importance of reaction intermediates, its role and techniques of generating such intermediates
8. Explain the importance of Stereochemistry in predicting the structure and property of organic molecules.
9. Predict the configuration of an organic molecule and able to designate it.
10. Identify the chiral molecules and predict its actual configuration.

Syllabus

Unit-I Quantitative analysis-Instrumental methods 14hrs

Electromagneticspectrum,absorptionofelectromagneticradiationBeer'slaw,Beer-Lambert law derivation, deviations from Beer's law, limitations, construction of calibration graph (Plot of absorbance versus concentration), Evaluation Procedures-standard addition, Internal standard addition, validation parameters-detection limits, sensitivity, dynamic/linearity range, Instrumentation: single beam and double beam spectrophotometers, quantitative applications of colorimetry (determination of Fe, Mo, Cu, Ti and PO_4^{3-}) and numerical problems on application of Beer's law. **10hrs**

Nephelometry and Turbidometry: Introduction, principle, instrumentations of nephelometry and turbidometry; effects of concentration, particle size and wavelength on scattering; choice between nephelometry and turbidometry, applications of nephelometry and turbidimetry (determination of $S0_4^{2-}$and PO_4^{3-}) **4hrs**

Unit-II Structure and Bonding-I 14 hrs

Structure and Bonding-I

The ionic bond II: Structures of ionic solids, Radius ratio rules, Calculation of some limiting radius ratio values, Coordination number 3 (planar triangle), Coordination number 4 (tetrahedral and square planar), Coordination number6 (octahedral) close packing. **4hrs**

Classification of ionic structures:
Ionic compounds of the type AX (ZnS, NaCl, CsCI), Ionic compounds of the type AX_2 (Calcium fluoride (fluorite) and Rutile structure, Layer structures CdI_2, Cadmium iodide structure, Limitations of radius ratio concept, Kapustinskii equation, solvation energy and solubility of ionic solids, Numerical problems **5hrs**

Covalent bond II: The Lewis theory, octet rule, exceptions to the octet rule, Sidgwick-Powell theory. Review of Valence shell electron pair repulsion (VSEPR) theory, Effect of lone pairs, electronegativity, isoelectronic principle, Examples using VSEPR theory: $BF_3$and BF_4^-, NH_3 and NH_4^+, CIF_3, SF_4, $I_3^-$and I_3^+, SF_6 and IF_7. Limitations of VSEPR. **5hrs**

Unit III Mechanism of Organic Reactions II 14hrs

Carbon-carbon pi bonds: Formation of alkenes and alkynes by elimination reaction. Mechanism of E1, E2, E1cB reaction. Saytzeff and Hofmann eliminations. Addition of HBr to propene, Free radical addition of HBr to propene. Addition of halogens to alkenes-carbocation and halonium ion mechanism. Stereo-specificity of halogen addition. Ozonolysis mechanism - ozonolysis of propene. Diel –Alder reaction and Mechanism of Allylic and benzylic bromination and mechanism in propene, 1-butene, 1-toluene and ethylbenzene. **7 hrs**

Nucleophilic substitution at saturated carbon: Mechanism of SN_1 and SN_2 reactions with suitable examples. Energy profile diagrams, Stereochemistry and factors effecting SN_1 and SN_2 reactions.

Aromatic Electrophilic substitution reactions**:** Mechanisms, σ and π complexes, Halogenation, Nitration, Sulphonation, Friedel Crafts alkylation and acylation with their mechanism. Activating and deactivating groups. Orientation influence, Ortho-para ratio. Aromatic nucleophilic substitution reaction: SN_{Ar} and Benzyne mechanism with suitable examples. **7 hrs**

UNIT IV Thermodynamics and surface chemistry 14hrs

First Law of Thermodynamics

Thermodynamic Processes, Reversible and Irreversible Processes, Nature of Heat and Work, Internal Energy, First Law of Thermodynamics, Enthalpy of a System, Work done in isothermal and adiabatic expansion of an ideal gas, Numerical problems, Joule -Thomson Expansion, Relation between Joule-Thomson coefficient and other thermodynamic parameters

Second law of Thermodynamics

Concept of entropy, thermodynamic scale of temperature, Statements of the Second Law of Thermodynamics, molecular interpretation of entropy, Calculation of entropy change for reversible and irreversible processes. Free Energy Functions: Gibbs and Helmholtz energy, Variation of S, G, A with T, V and P, Numerical problems, Free energy change and spontaneity, Gibbs-Helmholtz equation

Third Law of Thermodynamics

Statement of third law, concept of residual entropy, calculation of absolute entropy of molecules. **9Hrs**

Surface Chemistry

Adsorption

Types of adsorption isotherms. Freundlich adsorption isotherm (only equation), its limitations. Langmuir adsorption isotherm (derivation to be done) and BET equation (derivation not included).

Catalysis

Types of Catalysis and theories with examples (intermediate compound theory and adsorption theory), Michaelis-Menten equation-derivation. Heterogeneous catalysis: surface reactions, unimolecular, bimolecular surface reactions. Autocatalysis with examples. Applications: Design process to removal of toxic compounds from industrial wastewater and treatment of portable water requirements. **5Hrs**

References:

1. Fundamental of Analytical Chemistry, D.A. Skoog, D.M. West, Holler and Crouch, 8th edition, Saunders College Publishing, New York (2005).
2. Analytical Chemistry, G.D. Christian, 6th edition, Wiley-India (2007).
3. Quantitative Analysis, R.A. Dayand A.L.Underwood, 6thedition, PHI Learning Pvt Ltd. New Delhi (2009).
4. Vogel's Textbook of Quantitative Chemical Analysis, J. Mendham, R.C. Denney, J.D.Barnes and M.J.K. Thomas, 6th edition, Third Indian Reprint, Pearson Education Pvt. Ltd.(2007).
5. Organic Reaction Mechanism by V.K.Ahluwalia and R.K.Parashar (Narosa Publishers)
6. Organic Chemistry by S.M.Mukherji, S.P.Sinha and R.K.Kapoor (Narosa Publishers)
7. Morrison R.N and Boyd R.N, Organic Chemistry, Darling Kindersley (India) Pvt. Ltd. (Pearson Education)
8. Finar I.L, Organic Chemistry (VolumeI); Finar I.L (VolumeII) Stereochemistry and the Chemistry of Natural Products.,Dorling Kindersley (India) Pvt. Ltd. (Pearson Education)
9. Kalsi P.S.Stereochemistry, conformation and Mechanism, Newage International
10. Eliel E.Landwilen S.H,Stereochemistry of OrganicCompounds,Wiley,(London).

PRACTICALS

Credit Points: 2 Teaching Hours: 4 hrs
Evaluation: Continuous InternalAssessment-25marks
Semester End Examination: 25marks

Course Objectives

1) To impart skills related to preparation of stock and working solutions and handling of instrumental methods
2) To know the principle of colorimetric analysis and construction of calibration plot
3) To understand the chemistry involved in colorimetric determination of metal ions and anions
4) To determine R_f values of different metal ions present in a mixture
5) To impart knowledge on the importance of functional groups inorganic compounds.
6) Techniques to identify the functional groups in a compound by performing physical and chemical tests
7) To record its melting point/boiling point.
8) To prepare suitable derivative for that compound and to characterize it.

Course Specific outcomes

After the completion of this course, the student would be able to

1) Understand the importance of instrumental methods for quantitative applications Apply colorimetric methods for accurate determination of metal ions and anions in water or real samples
2) Understand how functional groups in a compound is responsible for its characteristic property
3) Learn the importance of qualitative tests in identifying functional groups.
4) Learn how to prepare a derivative for particular functional groups and how to purify it.

Experiments list

PART-A

1) Colorimetric determination of copper using ammonia solution
2) Colorimetric determination of iron using thiocyanate solution
3) Determination of R_f values of two or three component systems by TLC /Paper Chromatography
4) Separation of different metal ions by paper chromatography/ Solvent extraction of iron using oxine solution **(demonstration)**

PART-B

Qualitative analysis of Organic compounds such as

1) Salicylic acid, p-Nitrobenzoic acid, Antranilicacid, p-Chloro benzoic acid
2) o-Cresol, p-Cresol, Resorcinol, o-Nitrophenol, p-nitophenol
3) o-Nitro aniline, p-Nitroaniline, p-Toluidine, p-Chloroaniline, p-Bromoaniline,
4) Ethyl Salicylate, Salicylaldehyde, Acetophenone, p-Dichlorobenzene, p-Nitrotoluene, Benzamideetc. (At least 6-8compounds to be analysed in a semester)

Examination

In the practical examination, a batch of maximum 15 (Fifteen) students may be made. Anyone experiment from Part-A or B can be given by selection done by the students based on lots. **Viva questions must be asked on any of the experiments prescribed in the practical syllabus.**

Part A: Distribution of marks

1. Accuracy: 12 Marks
2. Technique and presentation: 03 Marks
3. Graphs and Calculations: 05 Marks
4. Viva: 05 Marks

Total 25 Marks

Deduction of marks for accuracy: Error up to 5% - 12 marks, 6 - 10% 09 marks, 11-15% 6 marks, 16 or above 3 marks.

Part B: Distribution of Marks:

1. Preliminary tests and presentation - 03 marks,
2. Group test based on solubility: 02 marks
3. Distinguishing test and C.T: 10 marks (4+6)
4. Preparation of derivative: 03marks
5. Melting point of derivative: 02marks
6. Viva-Voce-5 marks

Total=25 marks.

References

1) Vogel's Textbook of Quantitative Chemical Analysis, J. Mendham, R.C. Denney, J.D.BarnesandM.J.K.Thomas,6thedition,ThirdIndian Reprint, Pearson Education Pvt. Ltd.(2007)
2) Vogels Text Book of Qualitative Chemical Analysis, ELBS

Semester-3: BSc/B Sc (Honors)

Title of the Course: Open Elective: Fuel Chemistry and Environmental Chemistry

Course	Credits	No. of Classes/ Week	Total No. of Lecture Hours	Duration of Exam in hrs	Internal Assessment Marks	Semester End Exam Marks	Total Marks
Theory	03	03	42	2	40	60	100

This course provides a broad introduction to the fundamental principles of Fuel chemistry, and Environmental Chemistry. The student will gain an understanding of basic and practical applications aspects of Fuels and environmental chemistry. This course is a valuable prerequisite for taking more technically challenging courses that will be required for career development.

Course Objectives

This course will deal with

1. Types of energy sources, concept of fuels, Petroleum and Environmental chemistry
2. Concept of different types of fuels and calorific values,
3. Basic principles of fuel sources, their preparation and applications.
4. Different types of lubricants and their applications
5. Concept of pollution, types of pollution and its prevention.

Expected Course Outcomes

Upon completion of the course students will be able to

1. Understand the concept of fuels, and their classifications.
2. Learn the different types of fuels and their applications.
3. Know the different types of pollution and their prevention

UNIT-I: FUEL CHEMISTRY: 14hrs

Review of energy sources (renewable and non-renewable). Classification of fuels and their calorific value. Coal: Uses of coal (fuel and nonfuel) in various industries, its composition, carbonization of coal. Coal gas, producer gas and water gas—composition and uses. Fractionation of coal tar, uses of coal tar bases chemicals, requisites of a good metallurgical coke, Coal gasification (Hydro gasification and Catalytic gasification).
Petroleum and Petrochemical Industry: Composition of crude petroleum, Refining and different types of petroleum products and their applications

UNIT-II 14 hrs

Fractional Distillation (Principle and process), Cracking (Thermal and catalytic cracking), Reforming Petroleum and non-petroleum fuels (LPG, CNG, LNG, bio-gas, fuels derived from biomass), fuel from waste, synthetic fuels (gaseous and liquids), clean fuels.

Lubricants: Classification of lubricants, lubricating oils (conducting and non-conducting) Solid and semisolid lubricants, synthetic lubricants. Properties of lubricants (viscosity index, cloud point, pore point) and their determination.

UNIT-III ENVIRONMENTAL CHEMISTRY 14 hrs

Energy and Environment: Sources of energy: coal, petrol and natural gas. Nuclear fusion/ fission, solar energy, hydrogen and geo-thermal energy. **3 hrs**
Air pollution: Major regions of atmosphere,

Air pollutants: types, sources, particle size and chemical nature. Control measures of air pollution. Photochemical smog: its constituents and photochemistry. Green house effect, global warming and ozone depletion. **4 hrs**
Water pollution, water quality standards: Water pollutants and their sources. Industrial effluents and their treatment (primary and secondary treatment). Sludge disposal. Water quality parameters for waste water, industrial water and domestic water.

Nuclear pollution: Disposal of nuclear waste, nuclear disaster and its management.**7hrs**

Reference:

1. Stocchi, E. Industrial Chemistry, Vol-I, Ellis Horwood Ltd. UK (1990).
2. Jain, P.C. & Jain, M. Engineering Chemistry DhanpatRai& Sons, Delhi.
3. Sharma, B.K. & Gaur, H. Industrial Chemistry, Goel Publishing House, Meerut (1996).
4. Environmental Chemistry, A. K. De, 6th Edn. New Age International (P) Ltd.,(2008).
5. Environmental Chemistry-S. K. Banerji, (Prentice Hall India), 1993
6. Industrial Chemistry, B.K.Sharma, 9th Edn. Krishna Prakashan Media (P) Ltd. Meerut (1997-98)

SEMESTER III

OEC3-BOILER WATER MANAGEMENT

[Only For B. Sc. (Sugar Science & Technology) Students]

Credits – 3	Max. Marks: 100
Teaching Hours / week: 4 Hours	Marks: Theory = 60
Theory Examination duration :2 Hours	Internal assessment= 40

UNIT – I **14 hours**

General boiler mounting/accessories & working: General boiler types, Water tube boiler- General parts – furnace / combustion zone / feed water tank/feed pump/ steam drum /mud drum /super heater/level indicators/ economizer/air heater/ID fan/FD fan/SA fan/ etc, High pressure & low pressure boilers

UNIT – II **14 hours**

Water: Water properties & nature, Sources of water, Use of water & basic chemistry, water related tables, Impurities in water and their effects on boiler working – scale formation – boiler tubes &economiser / carry over / Silica deposition/Super heater & turbine deposits/ Corrosion

Water quality requirement & treatment: General standards for boiler water/boiler feed water for high pressure as well as low pressure boilers, Objectives of boiler water treatment, External & Internal treatment

UNIT – III 1**4 hours**

External water treatment - Clarification, Filtration, , Chlorination, Ion exchange, De-areation, Reverse Osmosis, Silica removal, Oil removal, deareation

Ion exchange methods: Softner, De-alkalisation, Demineralisation application & limitation, Resin

Membrane Technology: Ultra filtration, Nano Filtration, Reverse Osmosis, Electro-dialysis

UNIT - IV **14 hours**

Internal treatment: Organic polymers & their role in scale inhibition, Dispersants & sludge conditioners, various chemical dosing, corrosion due to low pH, prevention of corrosion in boiler. Use of oxygen scavengers

Boiler operations & water quality: Boiler blow down, Reasons for boiler failures, Boiler preventive maintenance, Tubes internal chemical cleaning, water tube boilers – fire side cleaning

REFERENCE BOOKS:

1. Practical boiler water treatment Handbook, N. Manivasakam, By Shakti Book Services, Coimbatore
2. Training manual for sugar mills. Mangal Singh; Somaiya publications Pvt.Ltd. Mumbai.
3. Efficient Management of sugar factories, Mangal Singh, Somaiya publication Pvt.Ltd. Bombay
4. System of Technical control for cane sugar factories in India; Varma, N.C. The Sugar Technologists Association of India N.Delhi.

Semester –IV; CHEMISTRY: DSC-4: Chemistry-IV

Number of Theory Credits	Number of lecture hrs/semester	Number of practical Credits	Number of practical hrs/ sem
4	56	**2**	**56**
Content of Theory Course 4			**56Hrs**

Course Objectives: Students learn about

1. Different types of bonding in molecules/compounds/ions
2. The structures of molecules/compounds/ions based on different models/theories
3. Properties of compounds based on bonding and structure
4. The fundamentals of thermodynamics including the laws, the concept of entropy and free energy functions and their applications.
5. The concepts of surface chemistry, catalysis and their applications.
6. The theoretical and experimental aspects of chemical kinetics including basic theories of reaction rates and methods of determining order.
7. Electrochemistry dealing with electrolytes in solution. Conductance measurements and applications. Concept of ionic mobility and their determination.

Course outcomes: After the completion of this course, the student would be able to

1. Predict the nature of the bond formed between different elements
2. Identify the possible type of arrangements of ions in ionic compounds
3. Write Born-Haber cycle for different ionic compounds
4. Relate different energy parameters like, lattice energy, entropy, enthalpy and solvation energy in the dissolution of ionic solids
5. Explain covalent nature in ionic compounds
6. Write the M.O. energy diagrams for simple molecules
7. Differentiate bonding in metals from their compounds
8. Learn important laws of thermodynamics and their applications to various thermodynamic systems
9. Understand adsorption processes and their mechanisms and the function and purpose of a catalyst.
10. Apply adsorption as a versatile method for waste water purification.
11. Understand the concept of rate of a chemical reaction, integrated rate equations, energy of activation and determination of order of a reaction based on experimental data
12. Know different types of electrolytes, usefulness of conductance and ionic mobility measurements
13. Determine the transport numbers

Syllabus

Unit-I Separation methods **14 hrs**

Fundamentals of chromatography: General description, definition, terms and parameters used in chromatography, classification of chromatographic methods, criteria for selection of stationary and mobile phase, nature of adsorbents. Principles of paper, thin layer, column chromatography. Column efficiency, factors affecting the column efficiency, van Deemter's equation and its modern version. **5 hrs**

Paper chromatography: Theory and applications

Thin layer chromatography (TLC): Mechanism, $R_f$value, efficiency of TLC plates, development, spray reagents, identification and detection, qualitative applications **2 hrs**

Solvent Extraction: Types-batch, continuous, efficiency, selectivity, distribution coefficient, factors affecting the partition, relationship between % extraction and volume fraction, Numerical problems on solvent extraction. Solvent extraction of iron and copper. **4hrs**

Ion exchange Chromatography

Resins, types with examples-cation exchange and anion exchange resins, mechanism of cation and anion exchange process and applications of ion -exchange chromatography (softening of hard water, separation of lanthanides,). **3hrs**

Unit-II Structure and Bonding-II **14hrs**

Structure and Bonding-II

Concept of resonance, resonance energy, hybridisation, types of hybridization, sp, sp^2, sp^3, dsp^2, dsp^3, d^2sp^3, sp^3d^2, with one example each, and energetics of hybridization. Bent's rule, Limitations of Valence Bond Theory. **4hrs**

Molecular Orbital theory-II:

Calculation of bond order, relationship between bond order, bond energy and bond length. Magnetic properties based on MOT. Examples of molecular orbital treatment for homonulcear diatomic molecules: He_2, Li_2, Be_2, B_2, C_2, N_2, N_2^+, and O_2^{2-} **5hrs**

Metallic Bonding:

General properties of metals: Conductivity, Lustre, Malleability and cohesive force, Crystal structures of metals and Bond lengths. Theories of bonding in metals: Free electron theory, Valence bond theory, Molecular orbital or band theory of solids. Prediction of conducting properties of conductors, insulators and semiconductors, extrinsic and intrinsic semiconductors using M.O. theory. **5hrs**

Unit III Reaction Intermediates and methods of identification **14hrs**

Reaction Intermediates: Generation, Stability and Reactions of,

i) Carbocations: Dienone-phenol; and Pinacol-Pinacolone Rearrangement.
ii) Carbanions: Perkin Reaction, Aldol condensation,
iii) Free Radicals: Sandmeyer Reaction
iv) Carbenes and Nitrenes: Singlet and Triplet states, their relative stability and reactions
v) Arynes: Formation and detection **9hrs**

Methods for Identifying Reaction Mechanism:

Product analysis, Isolation and identification of intermediates, stereochemical evidences, crossover experiments, isotopic studies, kinetic studies **5 hrs**

UNIT-IV Kinetics and Electrochemistry 14hrs

Chemical Kinetics-II

Temperature dependence of reaction rates; Arrhenius equation, activation energy, Numerical problems on Arrhenius equation in calculating energy of activation and rate constants. Collision theory of reaction rates-Lindemann's mechanism, qualitative treatment of the theory of absolute reaction rates. Experimental determination of kinetics of (i) inversion of cane sugar by polarimetric method (ii) spectrophotometric method for the reaction between potassium persulphate and potassium iodide. **5 Hrs**

Electrochemistry–I

Arrhenius theory of electrolytic dissociation. Merits and Demerits, Conductance, Specific conductance, equivalent and molar conductivity and their variation with dilution. Molar conductivity at infinite dilution. Numerical problems.

Kohlrausch's law of independent migration of ions and its applications, Debye-Hückel-Onsager equation. Ionic mobility and its determinations, transference numbers and their relation to ionic mobility's, determination of transference numbers using Hittorf and Moving Boundary methods.

Applications of conductance measurement: (i) degree of dissociation of weak electrolytes (ii) ionic product of water (iii) solubility and solubility product of sparingly soluble salts (iv) conductometric titrations (acid base titrations only) and (v) Hydrolysis constants of salts. Numerical problems. **9hrs**

Reference Books

1. Peter Atkins & Julio De Paula, Physical Chemistry, 9th Ed., Oxford University Press(2010)
2. GWCastellan,PhysicalChemistry,4thEd.,Narosa(2004)
3. RGMortimer,PhysicalChemistry3rdEd.,Elsevier:Noida,UP(2009)
4. B R Puri, L R Sharma and M S Pathania, Principal of Physical Chemistry, Vishal Publishing Co.
5. B S Bahl, G D Tuli and ArunBahl, Essentials of Physical chemistry, S Chand & Company Ltd.
6. A S Negi and S C Anand, A textbook of Physical Chemistry, New Age International Publishers.
7. BN Bajpai, Advanced Physical chemistry, S Chand and Company ltd.
8. R L Madan, Chemistry for Degree Students, Semester I, II, III and IV, S Chand and Company Ltd.
9. P L Soni, O P Dharmarha and U N Dash, Textbook of Physical Chemistry, Sultan Chand and Sons.

PRACTICALS

Credit Points: 2 Teaching Hours: 4Hrs
Evaluation: Continuous Internal Assessment: 25marks
Semester End Examination: 25 marks

Course objective: To attain practical knowledge about:

1. Analytical skills in detecting the constituents present in unknown samples by systematically carrying out the qualitative analysis.
2. The methods of determining rates of chemical reactions.
3. Designing electrochemical cells and making measurements related to it.
4. Determination of physical characteristics of electrolytes using conductivity measurements in solution.
5. Adsorption phenomenon, mechanism and basic models to explain adsorption.
6. Simple techniques like conductometry to obtain physicochemical parameters of electrolytes.

Course outcomes: At the end of the course student would be able to

1. Understand the chemical reactions involved in the detection of cations and anions.
2. Explain basic principles involved in classification of ions into groups in semi-micro qualitative analysis of salt mixture
3. Carry out the separation of cations into groups and understand the concept of common ion effect.
4. Understand the choice of group reagents used in the analysis.
5. Analyse a simple inorganic salt mixture containing two anions and cations
6. Use instruments like conductivity meter to obtain various physicochemical parameters.
7. Apply the theory about chemical kinetics and determine the velocity constants of various reactions.
8. Learn about the reaction mechanisms.
9. Interpret the behaviour of interfaces, the phenomena of physisorption and chemisorptions and their applications in chemical and industrial processes.
10. Learn to fit experimental data with theoretical models and interpret the data

Part A- Inorganic Chemistry Practicals

Qualitative semi-microanalysis of mixtures containing 2anions and 2 cations. Emphasis should be given to the understanding of different reactions.
The following cations and anions are suggested.

Cations: NH_4^+,Pb^{2+},Bi^{3+},Cu^{2+},Al^{3+},Fe^{3+},Co^{2+},Cr^{3+},Ni^{2+},Zn^{2+},Mn^{2+},Ba^{2+},Ca^{2+}, Sr^{2+}, Mg^{2+},Na^+, K^+.

Anions: CO_3^{2-},Cl^-,Br^-,I^-,NO_3^-,,SO_4^{2-}, S^{-2}(Sulphide)

Spot tests and flame tests to be carried out wherever possible.

Part B- Physical Chemistry Practicals

1. Determination of the enthalpy of neutralization of a strong acid with strong base.
2. Determination of velocity constant for acid catalysed hydrolysis of methylacetate.
3. Determination of equivalent conductivity of strong electrolyte and verification of DHO equation.
4. Determination of dissociation constant of weak acid by conductivity method.
5. Conductometric titration of strong acid and strong base.
6. Conductometric titration of weak acid and strong base.

Examination

In the practical examination, a batch of maximum 15 (Fifteen) students may be made. Anyone experiment from Part-A or B can be given by selection done by the students based on lots. **Viva questions must be asked on any of the experiments prescribed in the practical syllabus.**

Part A: Distribution of Marks:

Preliminary tests and presentation - 04 marks,
Anions (group test + C.T +ionic reactions) (1+1+1)×2=6 marks,
Cations (group test + C.T+ ionic reactions) (1+3+1)×2=10 marks,
Viva-Voce-5 marks,
Total=25 marks.

Part B: Distribution of marks

1. Accuracy: 12 Marks
2. Technique and presentation: 03 Marks
3. Graphs and Calculations: 05 Marks
4. Viva: 05 Marks

Total 25 Marks

Deduction of marks for accuracy: Error up to 5% - 12 marks, 6 - 10% 09 marks, 11-15% 6 marks, 16 or above 3 marks.

References

1. Vogel's Qualitative analysis, Revised by G. Svehla, Pearson education, 2002
2. J B Yadav, Advanced Physical Chemistry, Krishna Prakashan Media (P) Ltd, Meerut.
3. Khosla, B. D.; Garg, V. C. &Gulati, A. Senior Practical Physical Chemistry, R. Chand & Co. New Delhi (2011).
4. Garland, C.W. Nibler,J.W.& Shoemaker, D.P. Experiments in Physical Chemistry 8th Ed.; McGraw-Hill:NewYork(2003).
5. Halpern, A.M. & McBane, G.C. Experimental Physical Chemistry 3rd Ed.; W.H.Freeman &Co.New York(2003).

Semester4

BSc/B Sc(Honors)

Title of the Course: **Open Elective: Electrochemistry, Corrosion and Metallurgy**

Course	Credits	No. of Classes/ Week	Total No. of Lecture Hours	Duration of Exam in hrs	Internal Assessment Marks	Semester End Exam Marks	Total Marks
Theory	03	03	42	2	40	60	100

This course provides a broad introduction to the fundamental principles of Electrochemistry, Corrosion and Metallurgy. The student will gain an understanding of basic and practical applications in various fields of Electrochemistry, Corrosion and Metals and Alloy behaviour and manufacturing processes. This course is a valuable prerequisite for taking more technically challenging courses that will be required for career development.

Course Objectives

This course will deal with

1. Types of conductance, concept of electrolytes, electrolysis, redox reactions and EMF
2. Concept of different types of electrochemical cells, Types of electrodes and electrode potential. Application of electrochemical series.
3. Basic principles and applications of conductometric, potentiometric and pH titrations.
4. Different types of Batteries their principle construction and working, lead-acid storage and lithium ion battery. Study of Fuels cells.
5. Concept of corrosion, types of corrosion and its prevention by different methods. Introduction to electroplating.
6. Introduction to ores and minerals, extraction of metals from their ores, and purification. Eg: Manganese, Titanium and Uranium.
7. Study of alloys, classification, production and uses of alloys.

Expected Course Outcomes

Upon completion of the course students will be able to

1. Understand the concept of conductance in electrolytic solutions, electrolysis and redox reactions involved in electrode reactions.
2. Learn the different types of electrochemical cells, their symbolical representation and application of electrochemical series.
3. Apply conductometric, potentiometric and pH titrations
4. Know the principle, construction and working of batteries
5. Understand different types of corrosion and its prevention by different methods
6. Learn the methods of extraction of metals from their ores and purification

Unit I Electrochemistry **14hrs**

Conductance, specific and molar conductance Types of Electrolytes, Conductivity in electrolytic solution, Electrolysis, Kohlrausch's law and its application, Equivalent Conductance of Weak electrolyte at Infinite dilution.
Oxidation -reduction reactions, electrode potential, EMF of an electrochemical cell, cell reaction, Daniel cell, dry Cells-electrolytic and Galvanic cell, Representation of a cell. Standard electrode potential, Nernst equation (No derivation) and its application to chemical cell, Electrochemical series and its importance. Types of Electrodes.
Basic Principles of (i) Conductometric titrations-HCl Vs NaOH, CH_3COOH Vs NaOH
(ii)Potentiometric titrations: Acid-base titration HCl Vs NaOH,
Redox titration (FAS Vs $K_2Cr_2O_7$) **12hrs**

Batteries- Primary and Secondary batteries, Battery components and their role. Working of the following Batteries-Lead acid, Lithium Storage, Batteries, Fuel cells. **2hrs**

Unit II Corrosion **14hrs**

Corrosion: Introduction, definition, Types of Corrosion, Corrosion rate, Factors affecting corrosion rate, Metallic factor-purity, electrode potential of metal, hydrogen overvoltage, nature of corrosion product. Environmental Factors-Temperature, pH of the medium, humidity, presence of impurities, electrical conductivity of the medium, velocity of the medium, concentration of the medium. **7hrs**

Prevention of Corrosion: Material selection-Metals and alloys, metal purification, non-metallic, Alteration of environment - Changing media, inhibitors, Design-wall thickness, design rules, Coating-Metallic and other inorganic coatings, organic coating. **4hrs**

Electroplating: Introduction, Electroplating of chromium (hard and decorative). Electro lessplating: Introduction, distinction between electroplating and electroless plating processes. Electroless plating of copper. **3hrs**

Unit III Metallurgy **14hrs**

Introduction: Ore, minerals, important ores of some common elements in India, General Principles of pyrometallurgy, roasting, Calcination, Gangue, Smelting, Flux, Gravity separation, Froth flotation process, leaching. Techniques employed for Purification of metal Distillation process, Bessemerization, Electro-refining, Van Arkel and DeBoer's filament **6hrs**

Extraction of metals: Extraction of Manganese (Pyrolusite) Titanium (Ilmanite) and Uranium. **4hrs**

Alloys: Introduction, Classification of alloys, commercially important alloys, gold karats, Production of Ferroalloys; Ferrochrome, Ferro Manganese, Uses of alloy **4hrs**

Reference Books

1. Barrow. G.M, Physical Chemistry, Tata McGraw-Hill,(2007)
2. An introduction to electrochemistry, Samuel Glasstone, East-West edition New Delhi,(1942)
3. Text book of physical chemistry, Samuel Glasstone, 2nd Edition, Mac Millan India Ltd,(1991)
4. Principles and applications of Electrochemistry, D. R. Crow, 3rd edition, Chapmanhall London,(1988)
5. Fundamentals of electrochemical deposition, Milan Paunovic and Mordechay Schlesinger,Wiley Interscience Publications,NewYork,(1998)
6. Engineering Chemistry, VR Kulkarni and K Ramakrishna Reddy, New Age International, (2015)
7. Electrochemistry and Corrosion Science, Nestor Perez, Springer (india) Pvt. Ltd.,(2004)
8. Principles and Prevention of Corrosion, D.A. Jones ,Macmillan Publ. Co.,(1996)
9. Essentials of Materials Science and Engineering, Donald R.Askeland, Thomson Learning, 5th Edition, (2006)
10. Introduction to Engineering Materials, B.K.Agarwal,TataMcGrawHill,1st Edition
11. Material Science and Engineering,V.Raghavan,PHILearning,5th Edition
12. Engineering Materials and Metallurgy, R.K.Rajput,S.Chand-1st Edition,(2011)

SEMESTER IV

OEC 4 - ANALYTICAL INSTRUMENTATION

[Only For B. Sc. (Sugar Science & Technology) Students]

Credits – 3	Max. Marks: 100
Teaching Hours / week: 4 Hours	Marks: Theory = 60
Theory Examination duration :2 Hours	Internal assessment= 40

Unit – I **14 Hours**

Spectroscopy: General principles of absorption spectroscopy, theory of Colorimetry, Beers & Lambert Law, Instrumentation of Photoelectric Colorimeter, construction of standard curve and applications.

Flame Photometry: General discussion and elementary theory, Instrumentation of flames photometer, monochromators, detectors and applications

Unit – II **14 Hours**

Polarimetry: Introduction, plane polarized light, optical activity, Instrumentation of Polarimeter, types of polarimeter, Laurenzpolarimeter, Industrial polarimeter, white lamp single wedge and double wedge polarimeter, automatic polarimeter, measurement of specific rotation and determination of unknown concentration and other applications in sugar technology.

Refractometry: Introduction, Snell's law, specific refraction, molar refraction, Hand Refractometer, Abbe's Refractometer, experimental techniques and applications.

Unit – III **14 Hours**

pH and Conductivity measurements: Introduction sensors, Electroanalytical Sensors, different types of sensor electrodes, pH meter, standardization and pH measurements, conductivity solutions, specific and equivalent conductivity, equivalent conductivity at infinite dilution, measurement of conductivity/resistivity of solution, Conductometers, conductivity cell applications.

Laboratory equipment calibration process – Brix hydrometer, Thermometer, weight box, lab oven, Polarimeter, Refractometer, pH meter, conductivity meter, TDS meter, spectrophotometer

Unit – IV **14 Hours**

Chromatography: Introduction, Classification of chromatographic methods, introduction of terms used in chromatography,

Thin layer chromatography: Introduction of basic concept and technique, methodology, application,

Gas chromatography: General introduction of terminology, stationary phases, supports used for making GLC column

REFERENCE BOOKS:

1. Vogel's Textbook of quantitative inorganic revised by J. Bassett et al.
2. Instrumental Methods of Chemical Analysis by H. Kaur.
3. Instrumental methods of analysis by Strobel.
4. Practical Physical Chemistry by Findley.
5. Instrumental methods of chemical analysis by Bhal and Tuli.

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/ week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC5	21BSC5C5 CHE5L	Chemistry-5	40	60	100	4	-	-	4	2
	21BSC5C5 CHE5P	Chemistry Lab-5	25	25	50	-	-	4	2	4
DSC6	21BSC5C5 CHE6L	Chemistry-6	40	60	100	4	-	-	4	2
	21BSC5C5 CHE6P	Chemistry Lab-6	25	25	50	-	-	4	2	4

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC7	21BSC6C6 CHE7L	Chemistry-7	40	60	100	4	-	-	4	2
	21BSC6C6 CHE7P	Chemistry Lab-7	25	25	50	-	-	4	2	4
DSC8	21BSC6C6 CHE8L	Chemistry-8	40	60	100	4	-	-	4	2
	21BSC6C6 CHE8P	Chemistry Lab-8	25	25	50	-	-	4	2	4
INT1	21BSC6 INT1L	Project work/ Industrial Tour and report	25	25	50	-	-	2	2	2

BSc Chemistry-Semester V

Title of the Course: DSC Chemistry-5: Subject code: 21BSC5C5 CHE5L Paper:1

Course title	**DSC5 Chemistry -5**		
Course Code	**21BSC5C5 CHE5L**	No. of Credits	**04**
Contact hours	**60 Hours (4 Hours/ week)**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Objectives:

Students learn about

1. General group trends of d and f block elements
2. Valence Bond Theory (VBT) and Structural and stereoisomerism in coordination complexes
3. Classification and synthesis of Heterocyclic compounds
4. Sources, classification and general characteristics of Alkaloids
5. Principles of green chemistry
6. Selection rules, energy levels and respective transitions in molecular spectroscopy
7. Overview of nanostructures and nanomaterials and polymers

Course outcomes:

After the completion of this course, the student would be able to

1. Predict the Electronic configurations, oxidation states, colour, magnetic properties of d and f block elements
2. Identify the possible types of inner and outer orbital complexes with coordination numbers 4 and 6
3. Write molecular orbital picture and Aromatic character of heterocyclic compounds
4. Write the constitution of Coniine, hygrine and nicotine
5. Appreciate the need for green chemistry and eco-efficiency
6. Identify the selection rules for electronic, vibrational and rotational spectra
7. Elucidate the Properties of Polymers and nanomaterials

V semester
Paper – I

Unit – I **15 hours**

d- and f- block Elements 7 hours

Transition Elements (3d series): General group trends with special reference to electronic configuration, variable valency, colour, magnetic and catalytic properties, ability to form complexes.

Lanthanoids and actinoids: Electronic configurations, oxidation states, colour, magnetic properties, lanthanide contraction, separation of lanthanides (ion exchange method only).

Coordination Chemistry - I 8 hours

Classification of ligands, IUPAC system of nomenclature, Valence Bond Theory (VBT): Inner and outer orbital complexes of Cr, Fe, Co, Ni and Cu (coordination numbers 4 and 6). Structural and stereoisomerism in complexes with coordination numbers 4 and 6. Drawbacks of VBT.

Unit – II **15 hours**

Heterocyclic compounds 8 hours

Classification, molecular orbital picture and Aromatic character of furan, thiophene, pyrrole and pyridine, synthesis of the following compounds.

i). Furan and pyrrole from 1,4- diketones. ii) Pyridine by Hantzch synthesis. Electrophilic substitution reactions of pyrrole, furan and pyridine (chlorination and nitration), comparison of basicities of pyridine, piperidine and pyrrole.

Alkaloids 4 hours

Definition, source, classification and general characteristics, Hofmann exhaustive methylation with pyridine as an example. Isolation, constitution and confirmation by synthesis – Coniine, hygrine and nicotine

Green Chemistry 3 hours

The need for green chemistry and eco-efficiency, green methods, green products, recycling of wastes, 12 principles of green chemistry

Unit – III **15 hours**

Introduction to Molecular Spectra 2 hours

Electromagnetic radiation, regions of the spectrum, Born-Oppenheimer approximation, degrees of freedom

Electronic Spectroscopy 4 hours

Concept potential energy curves for bonding and antibonding molecular orbitals, qualitative description of selection rules, energy levels and respective transitions, Frank–Condon principle

Rotational Spectroscopy 4 hours

Classification of molecules, rotational spectra of rigid diatomic molecules, criteria for showing the spectra, energy levels of rigid rotator, selection rules (final equations only), calculation of bond length and moment of inertia of HCl molecule

Vibrational Spectroscopy 5 hours

Simple harmonic oscillator, Hooke's law, energy level of simple harmonic oscillator model of diatomic molecule (final equations only), selection rules, zero- point energy determination of force constant and qualitative relation between force constant and bond dissociation energies. Vibrational degrees of freedom of molecules (Linear and nonlinear).

Unit – IV **15 hours**

Properties of Polymers 8 hours

Physical, thermal, Flow & Mechanical Properties, Brief introduction to preparation, structure, properties and application of the following polymers:

polyolefins, polystyrene and styrene copolymers, poly (vinyl chloride) and related polymers, poly (vinyl acetate) and related polymers, acrylic polymers, fluoro polymers, polyamides and related polymers. Phenol formaldehyde resins (Bakelite, Novalac), polyurethanes, silicone polymers, polydienes, Polycarbonates, Conducting Polymers, [polyacetylene, polyaniline, poly (p-phenylene sulphide polypyrrole, polythiophene)]

Inorganic Polymers 3 hours

Inorganic polymers, Types, comparison with organic polymers, silicones, phosphonitrilic halides-formation, structure and applications

Nanomaterials 4 hours

Overview of nanostructures and nanomaterials: classification. Preparation of gold and silver metallic nanoparticles, self-assembled nanostructures-control of nanoarchitecture-one dimensional control. Carbon nanotubes and inorganic nanowires. Bio- inorganic nanomaterials.

BSc Chemistry-Semester V

Title of the Course: DSC-6: Subject code: 21BSC5C5 CHE6L Paper:2

Course title	**DSC6 Chemistry -6**		
Course Code	**21BSC5C5 CHE6L**	No. of Credits	**04**
Contact hours	**60 Hours (4 Hours/ week)**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Objectives:

Students learn about

1. Industrial Chemistry of alloys, abrasives, glass, cement and fuels
2. Preparation, mechanism of action and applications of various reagents
3. Classification, colour constitution and synthesis of dyes.
4. Electrochemistry – EMF and Batteries and Fuel Cells
5. Applications of infra-red spectroscopy, UV-Vis spectroscopy and mass spectrometry in organic chemistry

Course outcomes:

After the completion of this course, the student would be able to

1. Write the manufacture and application of alloys, abrasives, glass, cement and fuels
2. Preparation, mechanism of action and applications of various reagents like DCC, DDQ, LTA, NBS, PCC
3. Write the synthesis of various dyes
4. Write the types of electrodes, sign conventions and applications of EMF measurements
5. Understand construction and applications of batteries and fuel cells
6. Identify the molecules using the data from infra-red spectroscopy, UV-Vis spectroscopy and mass spectrometry

V semester
Paper – II

Unit – I **15 hours**

Industrial Chemistry – I 9 hours

Alloys-Significance, types of alloys (ferrous and non-ferrous alloys), preparation (fusion and electro-deposition) and their applications.

Abrasives- Classification, Mohr scale of hardness, Manufacture and application of carborundum, alundum, tungsten carbide.

Glass - physical and chemical properties of glass, raw materials, manufacture using tank furnace, annealing of glass, types, composition and uses of glasses.

Industrial Chemistry – II 6 hours

Cement: Raw materials, composition of Portland cement, manufacture by rotary kiln method, mechanism of setting.

Fuels: characteristic and calorific values of fuels, advantages of gaseous fuels, Manufacture of water gas and biogas.

Unit – II **15 hours**

Reagents and Reactions 9 hours

Preparation, mechanism of action and applications DCC (Amide formation), $LiAlH_4$ (reduction of aldehyde, carboxylic acid and ester), DDQ (Benzylic

oxidation of tetralin, aromatization of tetralin), Lead Tetra Acetate(oxidation of 1,2-diols), NBS(allylic bromination), OsO_4 (hydroxylation of alkenes), PCC(Pyridinium chlorochromate) in the oxidation of primary alcohols.

Dyes 6 hours

Classification, requirement of a dye, colour and constitution. The synthesis of each of the following Class of dyes: Azo dyes-Congo red, Vat dyes–Indigo, Anthraquinone dyes– Alizarin Triphenylemethane dyes–Malachite green, Crystal violet, Phthalein dyes- Fluoroscein, Eosin; Synthesis of each dyes.

Unit – III **15 hours**

Electrochemistry – EMF 10 hours

Electrochemical cells, Reversible and irreversible cells, EMF of a cell and its measurement by potentiometer, standard cell (Weston standard cell), types of electrodes, reference electrode-calomel electrode, sign conventions, Nernst equation, electrochemical series and its applications, salt bridge and its applications. Determination of pH of solution by hydrogen electrode, quinhydrone electrode and glass electrode methods, concentration cell with and without transference, liquid junction potential.

Numerical problems.

Applications of EMF measurements-

i) Determination of solubility and solubility product of sparingly soluble salts.

ii) Potentiometric titrations- acid– base and redox titrations,
iii) Determination of redox potential

Batteries and Fuel Cells 5 hours

Primary and secondary batteries – Construction and Applications of Pb-acid battery, Li-Battery, Lithium-polymer cell, and nickel-cadmium cell. Fuel cells-hydrogen-oxygen and Hydrocarbon–Oxygen fuel cells and their applications.

Unit – IV **15 hours**

Infrared Spectroscopy 5 hours

Introduction to infrared spectroscopy, intensity of absorption band, position of absorptions, C-H, >C=O, O-Hand N-H absorption bands with explanation for variation in stretching frequencies. Identification of H- bonding in alcohols, phenols and carboxylic acids using IR spectroscopy

UV and Visible Spectroscopy 5 hours

Types of electronic transitions, chromophores and auxochromes, bathochromic shift and hypochromic shift, intensity of absorption, Woodward- Fieser rules for calculating λ_{max} of Conjugated dienes such as alicyclic, homoannular and hetero annular dienes. Applications of UV spectroscopy

Mass Spectrometry 5 hours

Principle, determination of m/e ratio, instrumentation, determination of molecular mass and isotopic abundance, molecular ion peak and base peak, McLafferty rearrangement with respect to 2-hexanone, hexenoic acid and methyl hexanoate.

BSc Chemistry-Semester V

Title of the Course: DSC Chemistry Lab-5: Subject code: 21BSC5C5 CHE5P Paper:1

Course title	**DSC5:** Chemistry Lab-5		
Course Code	**21BSC5C5 CHE5P**	No. of Credits	**04**
Contact hours	**60 Hours (4 Hours/ week)**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**25**	Summative Assessment Marks	**25**

V Semester Paper I **INORGANIC AND PHYSCIAL CHEMISTRY PRACTICAL**

Part A: Preparation and quantitative analysis of inorganic complexes:

1. Cis- and trans- potassium dioxalatodiaquachromium(III) complex [analysis of oxalate and chromium]
2. Hexamminecobalt(III)chloride [analysis of cobalt]
3. Mercurytetrathiocyanatocobaltate.
4. Preparation of pentamminechlorocobalt (III)chloride.

Part B: PHYSCIAL CHEMISTRY PRACTICAL

Colorimetry

1. Estimation of Fe^{2+} ions concentration in the given solution by titration of FAS versus $KMnO_4$ through colorimetric method.
2. Estimation of Fe^{2+} ions concentration using EDTA through colorimetric method
3. Phase diagram of two component systems and determination of Ec, E_T and the determination of the composition of given unknown.

Potentiometry

1. Determination of single electrode potential of Cu^{2+}/Cu and estimate the given unknown concentration.
2. Determination of single electrode potential of Zn^{2+}/Zn and estimate the given unknown concentration.
3. Titration of $AgNO_3$ versus KCl.
4. Titration of weak acid against a strong base using quinhydrone electrode and calculation of pKa and Ka values of the weak acid.
5. Determination of pH of a buffer by using quinhydrone electrode and comparison of the pH values obtained with glass electrode

Examination

In the practical examination, a batch of maximum 15 (Fifteen) students may be made. Anyone experiment from Part-A or B can be given by selection done by the students based on lots. Viva questions must be asked on any of the experiments prescribed in the practical syllabus only

Part A: Distribution of Marks:

1. Reaction & Mechanism-04 marks,
2. Calculation of theoretical yield – 02 mark,
3. Observed yield -10 marks,
4. M.P- 04 marks,

5. Viva-Voce-5 marks,
Total=25 marks.
Deduction of marks for observed yield: Less than 10% - 10 marks, 11-15% - 8 marks, 16-20% - 6 marks, 21-25 % - 4 marks & above 25% - zero mark.

Part B: Distribution of marks
Accuracy: 12 Marks
Technique and presentation: 03 Marks
Graphs and Calculations: 05 Marks
Viva: 05 Marks
Total 25 Marks
Deduction of marks for accuracy: Error up to 5% - 12 marks, 6 - 10% 09 marks, 11-15% 6 marks, 16 or above 3 marks.

BSc Chemistry-Semester 5

Title of the Course: DSC6 Chemistry Lab-6: Subject code: 21BSC5C5 CHE6P **Paper:2**

Course title	**DSC6:** Chemistry Lab-6		
Course Code	21BSC5C5 CHE6P	No. of Credits	**04**
Contact hours	**60 Hours (4 Hours/ week)**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**25**	Summative Assessment Marks	**25**

V Semester Paper II **ORGANIC CHEMISTRY PRACTICAL**

Part A: Preparation (one stage)

1. Cannizarro reaction: Benzaldehyde.
2. Fries rearrangement: Phenyl acetate.
3. Friedel-Crafts reaction: Benzene and Acetyl chloride.
4. Sandmeyer reaction: 4-Chlorotoluene from 4-toluidine.
5. Pechmann reaction: Resorcinol and ethylacetoacetate.
6. Oxidation of Cyclohexanol.
7. Preparation of S- Benzylisothiuronium chloride.
8. Synthesis of p-iodonitrobenzene
9. Synthesis of N-Phenyl-2, 4-dinitroaniline.
10. Synthesis of 2, 4-dichlorophenoxyacetic acid.

Part B: Quantitative analysis

1. Saponification value of oil.
2. Estimation of glucose by Fehling's method.
3. Estimation of keto group.

Examination
In the practical examination, a batch of maximum 15 (Fifteen) students may be made. Anyone experiment from Part-A or B can be given by selection done by the students based on lots. Viva questions must be asked on any of the experiments prescribed in the practical syllabus only.
Part A: Distribution of Marks:
1. Reaction & Mechanism-04 marks,
2. Calculation of theoretical yield – 02 mark,
3. Observed yield -10 marks,

4. M.P- 04 marks,
5. Viva-Voce-5 marks,
Total=25 marks.
Deduction of marks for observed yield: Less than 10% - 10 marks, 11-15% - 8 marks, 16-20% - 6 marks, 21-25 % - 4 marks & above 25% - zero mark.
Part B: Distribution of Marks:
1. Accuracy: 12 (6+6) Marks
2. Technique and presentation: 03Marks
3. Reactions and Calculations: 05 Marks
4. Viva: 05 Marks
Total 25 marks
Deduction of marks for accuracy: ±0.4 CC – 6 marks, ± 0.6 CC- 04 marks, ±0.8 CC- 02 marks, ±1.0 CC - 01 marks. Above ±1.0 CC - 00 marks

BSc Chemistry-Semester VI

Title of the Course: DSC Chemistry-7: Subject code: 21BSC6C6 CHE7L **Paper:1**

Course title	**DSC7 Chemistry-7**		
Course Code	21BSC6C6 CHE7L	No. of Credits	**04**
Contact hours	**60 Hours (4 Hours/ week)**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Objectives:

Students learn about

1. Crystal field theory (CFT) with reference to octahedral, distorted octahedral (Jahn- Tellar distortion), tetrahedral and square planar complexes
2. Thermodynamic and kinetic stability of metal complexes
3. Structure, classification and properties of natural products
4. Concept of phases, components and degrees of freedom
5. Laws of photochemistry
6. Liquid-liquid mixtures (miscible, immiscible and partially miscible), Raoult's law and Duhem – Margules equation
7. Basic principles of NMR, Instrumentation and working of a NMR spectrometer
8. Different concepts of Acids and Bases
9. Manufacture and cleaning action of soap and detergent

Course outcomes:

After the completion of this course, the student would be able to

1. Calculate of crystal field stabilization energy of inner and outer orbital complexes with coordination numbers 4 and 6
2. Understand Factors affecting the stability of metal complexes
3. Write the interconversions, synthesis of natural products.
4. Write phase diagram for one and two component systems
5. Explain the reasons for high and low quantum yields with examples
6. Explain the differences between Azeotropes, Immiscible liquids and Partially miscible liquids
7. Interpret of PMR structure of simple organic molecules

VI semester
Paper – I

Unit – I **15 hours**

Coordination Chemistry – II 12 hours

Crystal field theory (CFT) with reference to octahedral, distorted octahedral (Jahn- Tellar distortion), tetrahedral and square planar complexes, calculation of crystal field stabilization energy, factors affecting 10Dq, consequences of crystal field splitting on ionic radii of M^{+2} ions, enthalpy of hydration of M^{+2} ions, explanation of colour and magnetic properties of magnetic complexes, limitations of crystal field theory, calculation of magnetic moment using Gouy's method

Metal-ligand Equilibria 3 hours

Stability of metal complexes (thermodynamic and kinetic), stepwise and overall stability constant and their relationship. Factors affecting the stability of metal complexes

Unit – II **15 hours**

Carbohydrates 5 hours

Haworth and conformational formulae of glucose and fructose, mutarotation and its mechanism, osazone formation, Killani's synthesis, Ruff's degradation, epimers and epimerisation with respect to monosaccharides, interconversions of glucose and fructose.

Vitamins 4 hours

Vitamins: Classification and importance of vitamin-A, B6, B12, C, D and E. Synthesis of Vitamin-C from D(+)-glucose, synthesis of vitamin-A by van Dorp *et al*

Amino acids, Peptides and Proteins 6 hours

Classification, structure and stereochemistry (D and L) of amino acids, acid-base behaviour, iso-electric point and electrophoresis, peptides- nomenclature and structure of peptides, synthesis of a dipeptide(Bergmann synthesis),Classification of proteins, levels of protein structure(primary, secondary and tertiary structure), protein denaturation and renaturation.

Unit – III **15 hours**

Phase Equilibria 5 hours

Concept of phases, components and degrees of freedom, derivation of Gibbs Phase Rule for nonreactive and reactive systems; Clausius-Clapeyron equation and its applications to solid-liquid, liquid-vapor and solid-vapor equilibria, phase diagram for one component systems (H_2O and S) with applications. Phase diagrams for two component systems of solid-liquid equilibria involving eutectic, congruent and incongruent melting points

Photochemistry 5 hours

Absorbance, transmittance, Beer-Lambert's law and its limitations, Calculation of molar extinction coefficient. Laws of photochemistry - Grothus-Draper law, Stark – Einstein' s law of photochemical equivalence, Quantum yield - definition, reasons for high and low quantum yields with examples. Photosensitization with examples. Photophysical process - definition, fluorescence, phosphorescence, Chemiluminescence and bioluminescence with examples,

Solutions 5 hours

Introduction - liquid-liquid mixtures (miscible, immiscible and partially miscible), Raoult's law-definition, equation. Duhem – Margules equation (no derivation) and its applications, Azeotropes - definition, minimum and maximum boiling point azeotropes. Immiscible liquids - definition, Partially miscible liquids-definition, conjugate solutions, CST, types I (phenol-water system), II (triethylamine-water system) and III (nicotine-water system).

Unit – IV **15 hours**

^{1}H NMR Spectroscopy 7 hours

Basic principles of NMR. Instrumentation and working of a NMR spectrometer, nuclear shielding and deshielding, chemical shift and molecular structure, spin-spin splitting and coupling constant, areas of signals. Interpretation of PMR structure of simple organic molecules such as ethanol, ethyl bromide, 2-chloroethanol, acetaldehyde, ethyl acetate, propanamide, acetophenone and acetanilide

Acids and Bases 4 hours

Arrhenius, Bronsted-Lowry, Lux-Flood, solvent system and Lewis concepts of acids and bases. Hard and soft acids and bases (HSAB) - classification of acids and bases as hard and soft, Pearson's HSAB concept

Soaps and Detergents 4 hours

Soaps: Introduction, manufacture by modern process, cleaning action of soap. Detergents: anionic, cationic, nonionic, with suitable examples, distinction between soaps and detergents, emulsifiers, stabilisers and builders

BSc Chemistry-Semester VI

Title of the Course: DSC8 Chemistry-8: Subject code: 21BSC6C6 CHE8L **Paper:2**

Course title	**DSC8 Chemistry -8**		
Course Code	21BSC6C6 CHE8L	No. of Credits	**04**
Contact hours	**60 Hours (4 Hours/ week)**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Objectives:

Students learn about

1. Nuclear particles, nuclear instability, nuclear fission and fusion, nuclear reactors
2. Essential and trace elements in biological process
3. Solvent properties and typical reactions in liquid ammonia and liquid sulphur dioxide
4. Retrosynthetic analysis, synthons, synthetic equivalents, functional group interconversions
5. Various named rearrangements
6. Sources, classification and general characteristics of terpenes
7. Principles of quantum chemistry
8. Comparison of transition state theory and collision theory
9. Classification, synthesis and requirement of an ideal synthetic drug,
10. Classification of organotransition metal complexes and 18 electron rule

Course outcomes:

After the completion of this course, the student would be able to

1. Explain different types of nuclear reactors, nuclear reactions
2. Explain the biological role of Na, K, Fe and Zn.
3. Write the retrosynthesis of benzocaine and 4-methoxy acetophenone
4. Write the constitution of citral, synthesis of α and β ionones, α-terpeniol
5. Explain Schrödinger' s wave equation, wave function and its significance
6. Explain the chemical kinetics of complex reactions
7. Write the synthesis and uses of antipyrine, novacaine ,chlorpheniramine maleate (CPM) paludrine, tetracyclin. Benedict's reagent and Barfoed reagent.

VI semester
Paper – II

Unit – I **15 hours**

Nuclear Chemistry 8 hours

Nuclear particles (positron, neutrino, mesons, pions, and quarks), nuclear instability, nuclear fission and fusion, nuclear reactors, Different types of nuclear reactors, nuclear reactions (α, n), (n, α), (α, p), (p, α), (p, n) and (n, p). Applications of radioisotopes in tracer technique, neutron activation analysis and carbon dating

Bioinorganic Chemistry 4 hours

Essential and trace elements in biological process, metalloporphyrins with respect to haemoglobin and chlorophyll (structure and function), biological role of Na, K, Fe and Zn.

Non-aqueous solvents 3 hours

Solvent properties and typical reactions studied in liquid ammonia and liquid sulphur dioxide

Unit – II **15 hours**

Retrosynthesis 5 hours

Introduction to retrosynthetic analysis, synthons, synthetic equivalents, functional group interconversions, one and two group C-X disconnection (definitions and examples only). Retrosynthesis of benzocaine and 4-methoxy acetophenone

Rearrangements 6 hours

Wagner-Meerwein, Fries, Wolff, Beckmann, Arndt-Eistert reaction, Wittig and Favorskii rearrangements, Baker-Venkatraman rearrangement. Baeyer-Villiger oxidation. Benzidine rearrangement.

Terpenoids 4 hours

Introduction, classification of terpenes, Ingold's isoprene rule, constitution of citral with synthesis, synthesis of α and β ionones, synthesis of α-terpeniol

Unit – III **15 hours**

Quantum Chemistry 6 hours

Black body radiation, Plank's theory, photoelectric effect, Einstein's photoelectric equation, Compton effect, wave nature of electron, Schrödinger' s wave equation, wave function and its significance, wave particle duality, Eigen function and Eigen values, Equation of motion for a particle, elementary wave motion, particle in one dimension box

Kinetics 6 hours

Derivation of rate constants of unimolecular (Lindemann hypothesis) and bimolecular reaction rates, limitations of collision theory. Transition state theory, Comparison of transition state theory and collision theory, steric factor.

Chemical kinetics of complex reactions-first order reaction, opposing, consecutive and parallel reactions

Micelles (Colloids) 3 hours

Emulsions, micro emulsions or micellar emulsions, and its stability, properties of micro emulsions: electro kinetic effects. Colloidal electrolytes or association colloids, types of colloidal electrolytes. Micelles: surface-active agents or surfactants

Unit – IV **15 hours**

Chemotherapy and Drugs 7 hours

Introduction, requirement of an ideal synthetic drug, classification, synthesis

and uses of the following- Antipyretics–antipyrine, Anaesthetics-novacaine (local) and pentothal sodium(general) Antihistamines–chlorpheniramine maleate (CPM) Antimalarials–paludrine, Antibiotics- tetracyclin. Para pharmaceutical reagents–Benedict's reagent, Barfoed reagent.

Organic reagents in inorganic analysis 3 hours

Sensitivity, selectivity and specificity, advantages of organic reagents over inorganic reagents - Dimethyl glyoxime, 8-hydroxyquinoline(oxime)

Organometallic compounds 5 hours

Introduction, classification of organotransition metal complexes, 18 electron rule with respect to $[Fe(CO)_5]$, $[Ni(CO)_4]$, $[Mn(CO)_5]+$, ferrocene, structure and

bonding in metal olefins (Zeise's Salt)

BSc Chemistry-Semester VI

Title of the Course: DSC7 Chemistry Lab-7: Subject code: 21BSC6C6 CHE7P **Paper:1**

Course title	**DSC7:** Chemistry Lab-7		
Course Code	21BSC6C6 CHE7P	No. of Credits	**04**
Contact hours	**60 Hours (4 Hours/ week)**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**25**	Summative Assessment Marks	**25**

VI Semester Paper I **INORGANIC AND PHYSICAL CHEMISTRY PRACTICAL**

INORGANIC CHEMISTRY PRACTICAL

Part A1: Gravimetric analysis

1. Gravimetric determination of Fe in Fe and Cr solution.
2. Gravimetric estimation of Cu in Cu and Fe solution.

Part A2: Volumetric analysis

3. Volumetric estimation of Ca and Mg in Dolomite solution.
4. Volumetric estimation of Cu in Cu and Ni (German Silver).
5. Volumetric estimation of Fe in Cu and Fe solution.
6. Volumetric estimation of Zn in Cu and Zn solution.

Part B:PHYSICAL CHEMISTRY PRACTICAL

1. Study of variation of viscosity of a liquid with temperature, determine the constant A and B.
2. Determination of pH of acetic acid with sodium acetate buffer by pH metry method.
3. Determination of pKa value of phosphoric acid by pH meter.
4. Evaluation of Arrehenius parameter for the reaction between $K_2S_2O_8$ versus KI (first order)

Conductometry

5. Acid mixture versus NaOH
6. Weak acid with salt versus NaOH
7. Strong acid with salt versus NaOH

Potentiometry

8. Acid mixture versus NaOH
9. $KMnO_4$ versus FAS

Examination

In the practical examination, a batch of maximum 15 (Fifteen) students may be made. Anyone experiment from Part-A or B can be given by selection done by the students based on lots. Viva questions must be asked on any of the experiments prescribed in the practical syllabus only

Part A1: Distribution of marks

1. Accuracy: 12 (6+6) Marks
2. Technique and presentation: 03Marks
3. Reactions and Calculations: 05 Marks
4. Viva: 05 Marks

Total 25 marks

Deduction of marks for accuracy: ±0.4 CC – 6 marks, ± 0.6 CC- 04 marks,
±0.8 CC- 02 marks, ±1.0 CC - 01 marks. Above ±1.0 CC - 00 marks

Part A2: Distribution of marks
1. Accuracy: 12 Marks
2. Technique and presentation: 03Marks
3. Reactions and Calculations: 05 Marks
4. Viva: 05 Marks
Total 25 marks
Deduction of marks for accuracy: ±6mg – 12 marks, ± 7 mg- 10 marks, ±8mg - 08 marks, ±10 mg - 06 marks. Above 10mg - 00 marks

Part B: Distribution of marks
1. Accuracy: 12 Marks
2. Technique and presentation: 03marks
3. Graphs and Calculations: 05 Marks
4. Viva: 05 Marks
Total 25 marks

Deduction of marks for accuracy: Error up to 5% - 12 marks, 6 - 10% 09 marks, 11-15% 6 marks, 16 % or above 3 marks.

BSc Chemistry-Semester VI

Title of the Course: DSC8 Chemistry Lab-8: Subject code: 21BSC6C6 CHE8P **Paper:2**

Course title	**DSC8:** Chemistry Lab-8		
Course Code	21BSC6C6 CHE8P	No. of Credits	**04**
Contact hours	**60 Hours (4 Hours/ week)**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**25**	Summative Assessment Marks	**25**

VI Semester Paper II

ORGANIC CHEMISTRY AND SPECTROSCOPY PRACTICAL

Part A: Preparation (Two and three stages)

1. 2,4-Dinitrophenylhydrazine from chloronitrobenzene.
2. Anthranilic acid from phthalic acid.
3. Benzanilide from benzophenone.
4. Benzilic acid from benzoin.
5. Synthesis of Acridone.
6. Synthesis of Hydantoin.
7. Recording/predicting/downloading from websites the UV, IR,NMR spectra of the compounds prepared in organic chemistry practical

Part B: Quantitative analysis

8. Titrimetric estimation of amino acids.
9. Estimation of phenols.
10. Iodine value of oil (chloramine-T method).

Examination

In the practical examination, a batch of maximum 15 (Fifteen) students may be made. Anyone experiment from Part-A or B can be given by selection done by the students based on lots. Viva questions must be asked on any of the experiments prescribed in the practical syllabus only

Part A: Distribution of Marks:

1. Reaction & Mechanism-04 marks,
2. Calculation of theoretical yield – 02 mark,
3. Observed yield -10 marks,
4. M.P- 04 marks,
5. Viva-Voce-5 marks,

Total=25 marks.

Deduction of marks for observed yield: Less than 10% - 10 marks, 11-15% - 8 marks, 16-20% - 6 marks, 21-25 % - 4 marks & above 25% - zero mark.

1. Accuracy: 12 (6+6) Marks
2. Technique and presentation: 03Marks
3. Reactions and Calculations: 05 Marks
4. Viva: 05 Marks

Total 25 marks
Deduction of marks for accuracy: ±0.4 CC – 6 marks, ± 0.6 CC- 04 marks,
±0.8 CC- 02 marks, ±1.0 CC - 01 marks. Above ±1.0 CC - 00 marks

BSc Chemistry-Semester VI
Title of the Course: INT1 (Project work/Industrial visit and report)
Subject code: 21BSC6 INT1L

Course title	**INT1(Project work/Industrial visit and report)**		
Course Code	21BSC6 INT1L	No. of Credits	**02**
Contact hours	**32 Hours or 2 Hours/ week**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**25**	Summative Assessment Marks	**25**

Project work on various topics pertaining the entire B.Sc Chemistry syllabus can be given. A batch of maximum 5 students can be given a single topic for project.

Alternatively the students can be taken to visit different industries/ research institutes and detailed report incorporating the salient features of the visit to be submitted by students. Ideally the visit can be undertaken in between 6^{th} to 8^{th} week of the semester to enable the students to prepare the report before the semester end exam.

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS as per the Choice Based Credit System (CBCS) designed in accordance with Learning Outcomes-Based Curriculum Framework (LOCF) of National Education Policy (NEP) 2020

for

Bachelor of Science (Hons) Biotechnology

w.e.f.

Academic Year 2021-22 and onwards

RANI CHANNAMMA UNIVERSITY, BELAGAVI
BSc (Hons) Biotechnology -program-2021-22

BoS Committee-NEP-BSc (Hons) Biotechnology

S.No.	Name & Address	Designation
1	Prof. K. Kantharaju Chairman & Professor, Dept. of Chemistry RCUB	**Chairman**
2	Dr. Jayashree Uppin	**Member**
3	Dr. Anandi B Sagar	**Member**
4	Dr. Sharath. R, Dept. of food technology, Davangere.	**Co-opted Members**
5	Dr. Joy Hoskeri, Dept. of Biotechnology, KSA womens University, Vijaypura.	**Co-opted Members**

PREAMBLE

Biotechnology has grown, extensively in last couple of decades. This advanced 'interdisciplinary' life science branch has a tremendous networking potential with modern cutting edge technology. This has given it a separate status in fundamental research as well as in modern industrial enterprise. Global and local focus has slowly shifted to not only current "Century of Knowledge" but also on to technology development and application in life sciences. In the milieu of research and industrialization for economic development and social change, biotechnology is an ideal platform to work. The interdisciplinary nature of biotechnology flags involves many fundamental research fields from cell biology to molecular biology, from biochemistry to biophysics, from genetic engineering to stem cell research, from bioinformatics to genomics-proteomics, from environmental biology and to biodiversity, from microbiology to bioprocess engineering, from bioremediation to In silco drug discovery and so on. The proposed credit-based curriculum and grading system will even add much more to the existing interdisciplinary nature of biotechnology and will also offer many courses to the other branches of life science. The generative power of biological data is effectively harnessed by biotechnology like no other field. The relevance and application of these studies on living organisms and their bioprocesses is extensively covered in this field with the help of technology. Economic and social renaissance is staged on biotechnology especially, since it's biomedical and cutting edge technological applications are tremendously powerful in shaping this century and exciting bio-future. Life science, IT industries and research institutes are always on a lookout for trained Biotechnologists as an efficient work force in fundamental research and industries. Education and research sectors require such interdisciplinary trained workforce to develop future generations of science leaders.

Program Outcomes

B.Sc. Biotechnology is an interdisciplinary science program aimed at providing excellent carrier opportunity for the students. It covers all major areas of modern life sciences including Cell &Molecular Biology, Genetics, Biochemistry, Microbiology, Virology, Plant & Animal tissue culture, DNA Technology and Fermentation Technology. Students get an overall exposure to various aspects of biotechnology and its applications in different industries. The course empowers the students with conceptual and practical skills of biotechnology and introduces the students with latest developments in biotechnology. It is fast emerging as a top course providing distinctive advantages to students as it finds applications in various aspects of life sciences.

- Gaining basic knowledge and skills of various aspects of biotechnology
- Inculcating the spirit of entrepreneurship among the students
- Making the students aware of technological solutions with biotechnological applications

RANI CHANNAMMA UNIVERSITY

VIdyaSangam, NH-4, Belagavi. -591156

Proposed Curricular and Credits Structure under Choice Based Credit System [CBCS] of Biotechnology Major& One Minor Discipline Scheme for the Four Years Chemistry B.Sc. Undergraduate Honors Programme with effect from 2021-22

SEMESTER-I										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L1	21BSC1L1LK1	Kannada	40	60	100	4	-	-	3	2
	21BSC1L1LFK1	Functional Kannada								
L2	21BSC1L2LEN2	English	40	60	100	4	-	-	3	2
	21BSC1L2LHI2	Hindi								
	21BSC1L2LSN2	Sanskrit								
	21BSC1L2LTE2	Telugu								
	21BSC1L2LUR2	Urdu								
DSC1	21BSC1C1BT1L	Cell Biology and Genetics	40	60	100	4	-	-	4	2
	21BSC1C1BT1P	Cell Biology and Genetics lab	25	25	50	-	-	4	2	4
DSC1	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
SEC1	21BSC1S1CS	Digital Fluency	25	25	50	1	-	2	2	2
VBC1	21BSC1V1PE1	Physical Education-Yoga	25	-	25	-	-	2	1	-
VBC2	21BSC1V2HW1	Health & Wellness	25	-	25	-	-	2	1	-
OEC1	21BSC1O1BT1	Biotechnology for Human welfare	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	

Note: *All skill enhancement course (SEC) syllabus and title should be selected time to time notice from the university and/ or NEP committee accordingly.*

SEMESTER-II										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L3	21BSC2L3LK2	Kannada	40	60	100	4	-	-	3	2
	21BSC2L3FKL2	Functional Kannada								
L4	21BSC2L4EN2	English	40	60	100	4	-	-	3	2
	21BSC2L4HI2	Hindi								
	21BSC2L4SN2	Sanskrit								
	21BSC2L4TE2	Telugu								
	21BSC2L4UR2	Urdu								
DSC2	21BSC2C2BT2L	Microbiological methods & Techniques	40	60	100	4	-	-	4	2
	21BSC2C2BT2P	Microbiological methods & Techniques lab	25	25	50	-	-	4	2	4
DSC2	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
AECC 1	21BSC2AE1ES2	Environmental Studies	20	30	50	-	-	4	2	2
VBC3	21BSC2V3PE2	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC4	21BSC2V4NC1	NCC/NSS/R&R(S &G) / Cultural	25	-	25	-	-	2	1	-
OEC2	21BSC2O2BT2	Applications of Biotechnology in Agriculture	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	

******Exit option with certificate (50 credits)**

SECOND YEAR; SEMESTER-III										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L5	21BSC3L5LK3	Kannada	40	60	100	4	-	-	3	4
	21BSC3L5LFK3	Functional Kannada								
L6	21BSC3L6EN3	English	40	60	100	4	-	-	3	4
	21BSC3L6HI3	Hindi								
	21BSC3L6SN3	Sanskrit								
	21BSC3L6TE3	Telugu								
	21BSC3L6UR3	Urdu								
DSC3	21BSC3BT3L	Biomolecules	40	60	100	4	-	-	4	2
	21BSC3BT3P	Biomolecules lab	25	25	50	-	-	4	2	4
DSC3	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	4
			25	25	50	-	-	4	2	4
SEC2	21BSC3S2AI	Artificial Intelligence	25	25	50	1	-	2	2	2
VBC5	21BSC3V5PE3	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC6	21BSC3V6NC2	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC3	21BSC3O3BT	Nutrition and Health	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	

SEMESTER-IV										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L7	21BSC4L7LK4	Kannada	40	60	100	4	-	-	3	2
	21BSC4L7LFK4	Functional Kannada								
L8	21BSC4L8EN4	English	40	60	100	4	-	-	3	2
	21BSC4L8HI4	Hindi								
	21BSC4L8SN4	Sanskrit								
	21BSC4L8TE4	Telugu								
	21BSC4L8UR4	Urdu								
DSC4	21BSC4C4BT4L	Molecular biology	40	60	100	4	-	-	4	2
	21BSC4C4BT4P	Molecular biology lab	25	25	50	-	-	4	2	4
DSC4	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
AECC2	21BSC4AE1ES2	Constitution of India	20	30	50	1	-	2	2	2
VBC7	21BSC4V5PE4	Physical Education-Sports	25	-	50	-	-	2	1	-
VBC8	21BSC4V6NC3	NCC/NSS/R&R(S&G) / Cultural	25	-	50	-	-	2	1	-
OEC4	21BSC4O4BT	Intellectual Property Rights	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	

******Exit option with certificate (100 credits)**

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Biotechnology as Major Discipline										
DSC5	21BSC5C5BT5L	Genetic engineering	40	60	100	3	-	-	3	2
	21BSC5C5BT5P	Genetic engineering lab	25	25	50	-	-	4	2	4
DSC6	21BSC5C5BT6L	Plant Biotechnology	40	60	100	3	-	-	3	2
	21BSC5C5BT6P	Plant Biotechnology Lab	25	25	50	-	-	4	2	4
DSC5	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	4
VC1	21BSC5VC1US		40	60	100	3	-	-	3	2
	21BSC5VC1FD									
VBC9	21BSC5V5PE5	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC10	21BSC5V6NC4	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
SEC3	21BSC5S3BT3		25	25	50	1	-	2	2	2
Total Marks					**650**	**Semester Credits**			**22**	

*Internship between 5th and 6th semester with 3-4 weeks

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Biotechnology as Major Discipline										
DSC7	21BSC6C6BT7L	Immunology and Medical Biotechnology	40	60	100	3	-	-	3	2
	21BSC6C6BT7P	Immunology and Medical Biotechnology Lab	25	25	50	-	-	4	2	4
DSC8	21BSC6C6BT8L	Bioprocess technology	40	60	100	3	-	-	3	2
	21BSC6C6BT8P	Bioprocess technology Lab	25	25	50	-	-	4	2	4
DSC6	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	4
VC2	21BSC6VC2HT		40	60	100	3	-	-	3	2
	21BSC6VC2DM									
INT1	21BSC6 INT1L	Internship	25	50	75	-	-	2	2	2
VBC1	21BSC6V5PE5	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC2	21BSC6V6NC4	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
SEC4	21BSC6S4BT		25	25	50	1	-	2	2	2
Total Marks					**700**	**Semester Credits**			**24**	
Total Marks for BSC Program					**4450**	**Total Credits for BSC Program**			**146**	

Biotechnology Subject as a Minor Discipline

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC5 As a Minor Subject	21BSC5C5BT5L	Genetic engineering	40	60	100	3	-	-	3	2
	21BSC5C5BT5P	Genetic engineering lab	25	25	50	-	-	4	2	4

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC6 As a Minor Subject	21BSC6C6BT6T	Immunology and Medical Biotechnology	40	60	100	3	-	-	3	2
	21BSC6C6BT6P	Immunology and Medical Biotechnology Lab	25	25	50	-	-	4	2	4

Concept Note, Abbreviation Explanation and Coding:

Concept Note:

1. CBCS is a mode of learning in higher education which facilitates a student to have some freedom in selecting his/her own choices, across various disciplines for completing a UG/PG program.
2. A credit is a unit of study of a fixed duration. For the purpose of computation of workload as per UGC norms the following is mechanism be adopted in the University:
   One credit (01) = One Theory Lecture (L) period of one (1) hour.
   One credit (01) = One Tutorial (T) period of one (1) hour.
   One credit (01) = One practical (P) period of two (2) hours.
3. Course: paper/subject associated with AECC, DSC, DSEC, SEC, VBC, OEC, VC, IC and MIL
4. In case of B.Sc. Once a candidate chose two courses/subjects of a particular two department in the beginning, he/she shall continue the same till the end of the degree, then there is no provision to change the course(s) and Department(s).
5. A candidate shall choose one of the Department's courses as major and other Department course as minor in fifth and sixth semester and major course will get continued in higher semester.
6. Wherever there is a practical there will be no tutorial and vice-versa
7. A major subject is the subject that's the main focus of Core degree/concerned.
8. A minor is a secondary choice of subject that complements core major/ concerned.
9. Vocational course is a course that enables individual to acquire skills set that are required for a particular job.
10. Internship is a designated activity that carries some credits involving more than **25 days** of working in an organization (either in same organization or outside) under the guidance of an identified mentor. Internship shall be an integral part of the curriculum.
11. **OEC: For non- computer science students. Computer Science students have to opt for OEC from departments other than major and minor disciplines.**

Abbreviation Explanations:

1. AECC: Ability Enhancement Compulsory Course.
2. DSC: Discipline Specific Core Course.
3. DSEC: Discipline Specific Elective Course.
4. SEC: Skill Enhancement Course.
5. VBC: Value Based Course.
6. OEC: Open/Generic Elective Course
7. VC: Vocational Course.
8. IC: Internship Course
9. L1: Language One

10. L2: MIL
11. L= Lecture; T= Tutorial; P=Practical.
12. MIL= Modern Indian Language; English or Hindi or Telugu or Sanskrit or Urdu

Program Coding:

1. Code 21: Year of Implementation
2. Code BSC: BSC Program under the faculty of Applied Science of the University
3. Code 1: First Semester of the Program, (2 to 6 represent higher semesters)
4. Code AE: AECC, (C for DSC, S for SEC, V for VBC and O for OEC)
5. Code 1: First "AECC" Course in semester, similarly in remaining semester for such other courses
6. Code LK: Language Kannada, similarly Language English, Language Hindi, Language Telugu, Language Sanskrit, &Language Urdu
7. Code 1: Course in that semester.
8. BT: Biotechnology

Note: *All skill enhancement course (SEC) syllabus and title should be selected time to time notice from the university and/ or NEP committee accordingly.*

ASSESSMENT METHODS

Evaluation Scheme for Internal Assessment:

Theory:

Assessment Criteria	**40 marks**
1st Internal Assessment Test for 30 marks 1 hr after 8 weeks and 2nd Internal Assessment Test for 30 marks 1 hr after 15 weeks . Average of two tests should be considered.	30
Assignment/viva	10
Total	**40**

Assessment Criteria	**25 marks**
1st Internal Assessment Test for20 marks 1 hr after 8 weeks and 2nd Internal Assessment Test for 20 marks 1 hr after 15 weeks . Average of two tests should be considered.	20
Assignment	05
Total	**25**

Practical:

Assessment Criteria	**25 marks**
Semester End Internal Assessment Test for 7 marks 2 hrs	20
Journal (Practical Record)	05
Total	**25**

Question Paper Pattern:

RANI CHANNAMMA UNIVERSITY

Department of Biotechnology

Duration: 2 hr ***I Semester B.Sc*** **(**Biotechnology**)**

Sub: **Code:** **Maximum Marks: 60**

a. **Answer any SIX Questions from Question 1**

b. **b. Answer any Three each Questions from Question 2,3,4 and 5**

Q.No.1.	**Answer any SIX Questions (Two question from Each Unit)** **a.** **b.** **c.** **d,** **e.** **f.** **g.** **h.**	**2X6=12**
Q.No.2.	**(Should cover Entire Unit-I)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.3.	**(Should cover Entire Unit-II)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.4.	**(Should cover Entire Unit-III)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.5.	**(Should cover Entire Unit-IV)** **a.** **b.** **c.** **d.**	**4X3=12**

SYLLABUS

BSc (Hons) Biotechnology-Semester 1
Title of the Course: DSC-1: Subject code: 21BSC1C1BT1L
Paper: Cell Biology and Genetics

Number of Theory Credits	Number of lecture hours/ semester	Number of practical credits	Number of practical hours / semesters	
4	56	2	56	

Unit No.	Course Content	Hours
Unit I	**Cell as a Basic unit of Living Systems and Cellular Organelles** Concept, Development and Scope of Biotechnology. Historical perspectives. Discovery of cell, the cell Theory, Ultra structure of a eukaryotic cell- (Both plant and animal cells), **Surface Architecture:** Structural organization and functions of plasma membrane and cell wall of eukaryotes. **Cellular Organelles:** Structure and functions of cell organelles – Endoplasmic reticulum, Golgi complex, Mitochondria, Chloroplast, Ribosomes, Lysosomes, Peroxisomes, Nucleus (Nuclearenvelope with nuclear pore complex, Nucleolus, Nucleoplasm and Chromatin). Vacuole, Cytosol and Cytoskeleton structures (Microtubules, Microfilaments and Intermediate filaments).	14
Unit II	**Chromosomes and Cell Division** General Introduction, Discovery, Morphology and structural organization – Centromere, Secondary constriction, Telomere, Chromonema, Euchromatin and Heterochromatin, Chemical composition and Karyotype. Single-stranded and multi-stranded hypothesis, folded- fibre and nucleosome models. Special type of chromosomes: Salivary gland and Lampbrushchromosmes. **Cell Division**: Cell cycle, phases cell division. Mitosis and meiosis, regulation of cell cycles cell cycle checkpoints, and enzymes involved in regulation, Significance of cell cycle, mitosis and meiosis interphase nucleus, achromatic apparatus, synaptonemal complex Cell Cycle and regulation, mitosis and meiosis.Cell	14

	Senescence and programmed cell death.	
Unit III	**Genetics**: History of genetics: Introduction and brief history of genetics. Mendelian theory: Laws of inheritance- dominance, segregation, incomplete dominance, codominance with an example. Law of independent assortment, test cross, back cross. Deviations to Mendelian inheritance, complementary, supplementary and interaction of genes (13:3 ratio), epistasis. **Maternal Inheritance:** Plastid inheritance in Mirabilis, Petite characters in yeast and Kappa particles in paramecium, Sex-linked inheritance, Chromosome theory of inheritance. **Gene interaction:** Supplementary factors: comb pattern in fowls, Complementary genes- Flower colour in sweet peas, Multiple factors–Skin colour in human beings, Epistasis– Plumage colour in poultry, Multiple allelism: Blood groups in Human beings.	14
Unit IV	**Unit-4.Linkage and Crossing Over** Introduction,Coupling and repulsion hypothesis, Linkage in maize and Drosophila, Mechanism of crossing over and its importance, chromosome mapping-linkage map in maize. **Mutations:** Types of mutations, Spontaneous and induced, Mutagens: Physical and chemical, Mutation at the molecular level, Mutations in plants, animals and microbes for economic benefit of man. **Chromosomal variations:** A general account of structural and numerical aberrations,chromosomal evolution of wheat and cotton. **Sex Determination in Plants and animals:** Concept of allosomes and autosomes, XX- XY, XX-XO, ZW-ZZ, ZO-ZZ types. **Human Genetics:** Karyotype in man, inherited disorders – Allosomal (Klinefelter syndrome and Turner'ssyndrome), Autosomal (Down syndrome and Cri-Du-Chat Syndrome).	14

Semester-I; Course : Practical
Paper : Cell Biology and Genetics; Paper Code: 21BSC2C2BT1P

1) Study and maintenance of simple and compound microscope
2) Use of Micrometer and calibration, measurement of onion epidermal cells and yeast
3) Study of divisional stages in mitosis from onion root tips
4) Study of divisional stages in meiosis in grasshopper testes/onion orRhoeo flower buds.
5) Mounting of polytene chromosomes
6) Buccal smear - Barr bodies
7) Karyotype analysis - Human and Onion
   Human – Normal and Abnormal – Down and Turner's syndromes
8) Isolation and staining of Mitochondria
9) Isolation and staining of Chloroplast
10) RBC cell count by Haemocytometer
11) Simple genetic problems based on theory

- Each student is required to submit 5 permanent slides of mitosis & meiosis

Text Books / References

Reference:

1. Molecular Biology of Cell - Bruce Alberts et al, Garland publications.
2. Animal Cytology and Evolution- MJD, White Cambridge University Publications
3. Molecular Cell Biology-Daniel, Scientific American Books
4. Cell Biology - Jack d Bruke, The William Twilkins Company
5. Principles of Gene Manipulations- Old & Primrose, Black Well Scientific Publications
6. Cell Biology-Ambrose &Dorothy M Easty, ELBS Publications
7. Fundamentals of Cytology- L. W. Sharp, McGraw Hill Company
8. Cytology-Willson&Marrison, Reinform Publications
9. Molecular Biology- Christopher Smith, Faber & Faber Publications
10. Cell Biology & Molecular Biology – EDP De Robertis& EMF Robertis, Saunder College.
11. Cell Biology- C.B Powar, Himalaya Publications
12. Basic Genetics- Daniel L. Hartl, Jones &Barlett Publishers USA
13. Human Genetics and Medicine lark Edward Arnold P London
14. Genetics – Monroe W Strickberger, Macmillain Publishers, New York
15. Genes V - Benjamin Lewin, Oxford University Press.
16. Genes I - Benjamin Lewin, Wiley Eastern Ltd., Delhi
17. Genes II - Benjamin Lewin, Wiley & Sons Publications
18. Genes III- Benjamin Lewin, Wiley & Sons Publications

OPEN-ELECTIVE SYLLABUS:

BSc Semester 1 – B.Sc (Hons) Biotechnology
Title of the Course: Open Elective (OE-1): Biotechnology for Human Welfare
Course code: 21BSC1O1BT1

Courses	Credits	No. of Classes/Week	Total No. of Lectures/ Hours	Duration of Exam in hrs	Internal Assessment Marks	Semester End Exam Marks	Total Marks
Theory	03	03	42	2	40	60	100

Unit No.	Course Content	Hours
Unit I	**Industry** Application of biotechnology in industry: Industrial production of alcoholic beverage (wine), antibiotic (Penicillin), enzyme (lipase) Protein engineering applications in food , detergent and pharmaceutical industry	14
Unit II	**Environment** Application of biotechnology in environmental aspects : Degradation organic pollutants - chlorinated and non-chlorinated compounds; degradation of hydrocarbons and agricultural wastes, PHB –production and its futuristic applications	14
Unit III	**Forensic science** Application of biotechnology in forensic science: Solving crimes of murder and rape; solving claims of paternity and theft by using DNA finger printing techniques **Health** Application of biotechnology in health: Genetically engineered insulin, recombinant vaccines, gene therapy, molecular diagnostics using ELISA, PCR; monoclonal antibodies and their use in cancer; human genome project	14

Reference:

1. Crueger W and Crueger A. (2000). Biotechnology: A textbook of Industrial Microbiology.2nd edition. Panima Publishing Co. New Delhi.
2. Patel AH. (1996). Industrial Microbiology. 1st edition, Macmillan India Limited.
3. Stanbury PF, Whitaker A and Hall SJ. (2006). Principles of Fermentation Technology. 2nd edition, Elsevier Science Ltd.
4. Environmental Biotechnology, Pradipta Kumar Mohapatra

5. Environmental Biotechnology – Concepts and Applications, Hans-Joachim Jordening and Jesef Winter
6. B.B. Nanda and R.K. Tiwari, Forensic Science in India: A Vision for the Twenty First Century, Select Publishers, New Delhi (2001).
7. M.K. Bhasin and S. Nath, Role of Forensic Science in the New Millennium, University of Delhi, Delhi (2002).
8. S.H. James and J.J. Nordby, Forensic Science: An Introduction to Scientific and Investigative Techniques, 2nd Edition, CRC Press, Boca Raton (2005).
9. W.G. Eckert and R.K. Wright in Introduction to Forensic Sciences, 2nd Edition, W.G.Eckert (ED.), CRC Press, Boca Raton (1997).

BSc (Hons) Biotechnology- Semester 2

Title of the Course: DSC-2: Subject code: 21BSC2C2BT2L

Paper: Microbiological Methods

Number of Theory Credits	Number of lecture hrs./semester	Number of practical Credits	Number of practical hrs./ Sem
4	56	**2**	**56**

Unit No.	Course Content	Hours
Unit I	**Instruments used in Biotechnology** Microscopy: Principles of Microscopy- resolving power, numerical aperture, working principle and applications of Compound microscope, Dark field microscope, Phase contrast microscope, Fluorescence Microscope, confocal microscope, Electron Microscopes- TEM and SEM. **Analytical techniques:** Working principles and applications: Centrifuge, Ultracentrifuge, Spectrophotometer, Chromatography: Paper and TLC	14
Unit II	**Sterilization techniques** Definition of terms-sterilization, disinfectant, antiseptic, sanitizer, germicide, microbicidal agents, microbiostatic agent and antimicrobial agent. **Physical methods of control:** Principle, construction and applications of moist heat sterilization Boiling, Pasteurization, Fractional sterilization-Tyndallization and autoclave. Dry heat sterilization-Incineration and hot air oven. Filtration –Diatomaceous earth filter, seitz filter, membrane filter and HEPA ; Radiation : Ionizing radiation-γ rays and non-ionizing radiation- UVrays **Chemical methods:** Alcohol, aldehydes, phenols, halogen, metallic salts, Quaternary ammoniumcompounds and sterilizing gases as antimicrobial agents;	14
Unit III	**Microbiological techniques** **Culture Media:** Components of media, natural and synthetic media, chemically defined media, complex media, selective, differential, indicator, enriched and enrichment media **Pure culture methods**: Serial dilution and plating methods (pour, spread, streak); cultivation, maintenance and preservation/stocking of pure cultures; cultivation of anaerobic bacteria **Stains and staining techniques:** Principles of staining, Types of stains-simple stains, structural stains and differential stains.	14
Unit IV	**Antimicrobial agents** Five modes of action with one example each: Inhibitor of nucleic acid synthesis; Inhibitor of cell wall synthesis; Inhibitor of cell membrane function; Inhibitor of protein synthesis; Inhibitor of metabolism Antifungal agents: Mechanism of action of Amphotericin B,	14

	Griseofulvin Antiviral agents: Mechanism of action of Amantadine, Acyclovir, Azidothymidine Antibiotic resistance, MDR, XDR, MRSA, NDM-1 Antibiotic sensitivity testing methods: Disc and Agar well diffusion techniques	

Course : Practicals

Paper : Microbiological Methods; Paper Code: 21BSC2C2BT2P

1. To study the principle and applications of important instruments (biological safety cabinets, autoclave, incubator, BOD incubator, hot air oven, light microscope, pH meter) used in the microbiology and Biotechnology laboratory.
2. Sterilization of medium using Autoclave and assessment for sterility
3. Sterilization of glassware using Hot Air Oven and assessment for sterility
4. Sterilization of heat sensitive material by membrane filtration and assessment for sterility
5. Preparation of culture media for bacteria, fungi and their cultivation.
6. Plating techniques: Spread plate, pour plate andstreak plate.
7. Isolation of bacteria and fungi from soil, water and air
8. Study of Rhizopus, Penicillium, Aspergillus using temporary mounts
9. Colony characteristics study of bacteria from air exposure plate
10. Staining techniques: Bacteria– Gram, Negative, Capsule, Endospore staining
    Fungi – Lactophenol cotton blue staining
11. Water analysis - MPN test
12. Biochemical Tests – IMViC, Starch hydrolysis, Catalase test, Gelatin hydrolysis
13. Bacterial cell motility - hanging drop technique

****** Any two experiments given carrying 20 and 15 mark each experiment.

Text Books / References

1. Atlas RM. (1997). Principles of Microbiology. 2nd edition. WM.T. Brown Publishers.
2. Black JG. (2008). Microbiology: Principles and Explorations. 7th edition. Prentice Hall
3. Madigan MT, and Martinko JM. (2014). Brock Biology of Micro-organisms. 14th edition. Parker J. Prentice Hall International, Inc.
4. Pelczar Jr MJ, Chan ECS, and Krieg NR. (2004). Microbiology.
5. 5th edition Tata McGraw Hill.
6. Srivastava S and Srivastava PS. (2003). Understanding Bacteria. Kluwer Academic Publishers, Dordrecht
7. Stanier RY, Ingraham JL, Wheelis ML and Painter PR. (2005). General Microbiology. 5th edition McMillan.
8. Tortora GJ, Funke BR, and Case CL. (2008). Microbiology: An Introduction. 9th edition Pearson Education.
9. Willey JM, Sherwood LM, and Woolverton CJ. (2013). Prescott's Microbiology. 9th edition. McGraw Hill Higher Education.

10. Cappucino J and Sherman N. (2010). Microbiology: A Laboratory Manual. 9th edition. Pearson Education Limited
11. Microbiology- Concepts and applications by Paul A. Ketchum, Wiley Publications
12. Fundamentals of Microbiology –Frobisher, Saunders & Toppan Publications
13. Introductory Biotechnology-R.B Singh C.B.D. India (1990)
14. Fundamentals of Bacteriology - Salley
15. Frontiers in Microbial technology-P.S. Bison, CBS Publishers.
16. Biotechnology, International Trends of perspectives A. T. Bull, G.
17. General Microbiology –C.B. Powar

OPEN-ELECTIVE SYLLABUS

Title of the Course: OEC-2: Subject code: 21BSC2O2BT2

Paper: Applications of Biotechnology in Agriculture

B.Sc. Semester – II

Courses	Credits	No. of Classes/Week	Total No. of Lectures/Hours	Duration of Exam in hrs	Internal Assessment Marks	Semester End Exam Marks	Total Marks
Theory	03	03	42	2	40	60	100

Unit No.	Course Content	Hours
Unit I	**Agricultural Biotechnology** Concepts and scope of biotechnology in Agriculture. Plant tissue culture, micro propagation, entrepreneurship in commercial plant tissue culture. Banana tissue culture - primary and secondary commercial setups ,Small scale bioenterprises: Mushroom cultivation	14
Unit II	**Transgenic plants** The GM crop debate – safety, ethics, perception and acceptance of GM crops GM crops case study :Bt cotton, Bt brinjal Plants as biofactories for molecular pharming : edible vaccines, plantibodies, nutraceuticals.	14
Unit III	**Bt based pesticides** Baculovirus pesticides, Mycopesticides, Post-harvest Protection : Antisense RNA technology for extending shelf life of fruits and shelf life of flowers. Genetic Engineering for quality improvement: Seed storage proteins, Flavours–capsaicin, vanillin	14

Text Books / References

1. Prescott, Harley, Klein's Microbiology, J.M. Willey, L.M. Sherwood, C.J. Woolverton, 7th International, edition 2008, McGraw Hill.
2. Foundations in Microbiology, K. P. Talaro, 7th International edition 2009, McGraw Hill.
3. A Textbook of Microbiology, R. C. Dubey and D. K. Maheshwari, 1st edition, 1999, S. Chand & Company Ltd.
4. Brock Biology of Microorganisms, M.T.Madigan, J.M.Martinko, P. V. Dunlap, D. P. Clark- 12th edition, Pearson International edition 2009, Pearson Benjamin Cummings.
5. Microbiology – An Introduction, G. J.Tortora, B. R.Funke, C. L. Case, 10th ed. 2008,Pearson Education.
6. General Microbiology, Stanier, Ingraham et al, 4th and 5th edition 1987, Macmillan education limited.
7. Microbiology- Concepts and Applications, PelczarJr,Chan, Krieg, International ed, McGraw Hill.

8. Alexopoulos, C.J., Mims, C.W., and Blackwell, M. 2002. Introductory Mycology. John Wiley and Sons (Asia) Pvt. Ltd. Singapore. 869 pp.
9. Atlas, R.M. 1984. Basic and practical microbiology. Mac Millan Publishers, USA. 987pp.
10. Black, J.G. 2008. Microbiology principles and explorations. 7edn. John Wiley and Sons Inc., New Jersey 846 pp.
11. Pommerville, J.C. Alcamo's Fundamentals of Microbiology. Jones and Bartlett Pub..Sudburry, 835 pp.
12. Schlegel, H.G. 1995.General Microbiology. Cambridge University Press, Cambridge, 655 pp.
13. Toratora, G.J., Funke, B.R. and Case, C.L. 2007. Microbiology 9th ed. Pearson Education Pte. Ltd., San Francisco. 958pp.

BSc (Hons) Biotechnology-Semester 3
Title of the Course: DSC-3: Subject code: 21BSC3C3BT3L
Paper: Biomolecules

Number of Theory Credits	Number of lecture hrs./semester	Number of practical Credits	Number of practical hrs./ Sem
4	56	**2**	**56**

Unit No.	Course Content	Hours
Unit I	**Carbohydrates** Introduction, sources, classification of carbohydrates. Structure,function and properties of carbohydrates. Monosaccharides – Isomerism and ring structure, Sugar derivatives – amino sugars and ascorbic acid Oligosaccharides – Sucrose and Fructose Polysaccharides – Classification as homo and heteropolysaccharides, Homopolysaccharides - storage polysaccharides (starch and glycogen- structure, reaction, properties), structural polysaccharides (cellulose and chitin-structure,properties),Heteropolysaccharides - glycoproteins and proteoglycans (Brief study). Metabolism:Glycolysis and gluconeogenesis, Kreb's cycle, oxidative phosphorylation. **Amino Acids, Peptides and Proteins** Introduction, classification, and structure of amino acids. Concept of – Zwitterion, isoelectric point, pK values. Essential and nonessential amino acids. Peptide bond and peptide, classification of proteins based on structure and function, Structural organization of proteins [primary, secondary (α,), tertiary and quaternary]. Fibrous and globular proteins, Denaturation, and renaturation of proteins General aspects of amino acid metabolism: Transamination, deamination, decarboxylation, and urea cycle.	14
Unit III	**Vitamins** Water- and fat-soluble vitamins, dietary source and biological role of vitamins Deficiency manifestation of vitamin A, B, C, D, E and K **Nucleic acids** Structures of purines and pyrimidines, nucleosides, nucleotides in DNA Denovo and salvage pathway of purine and pyrimidine synthesis.	14

	Hormones Classification of hormones based on chemical nature and mechanism of action. Chemical structureand functions of the following hormones: Glucagon, Cortisone, Epinephrine, Testosterone and Estradiol.	
Unit IV	**Bioanalytical tools** **Chromatography** Principle, procedure, and applications of - paper chromatography, thin layer chromatography, adsorption chromatography, ion exchange chromatography, gel filtration chromatography, affinity chromatography, gas liquid chromatography and high performanceliquid chromatography. **Electrophoresis:** Principle, procedure, and applications of electrophoresis (paper electrophoresis, gel electrophoresis -PAGE, SDS- PAGE &agarose electrophoresis) and isoelectric focusing. **Spectroscopy** UV-V is spectrophotometry, mass spectroscopy, atomic absorption spectroscopy.	14

Course: Practical-Semester-3
Paper: Biomolecules; Paper Code: 21BSC3C3BT3P

1. Introduction to basic instruments (Principle, standard operating procedure) with demonstration.
2. Definitions and calculations:Molarity, Molality, Normality, Mass percent % (w/w), Percent byvolume (% v/v), parts per million (ppm), parts per billion (ppb), Dilution of concentrated solutions. Standard solutions, stock solution, solution of acids. Reagent bottlelabel reading and precautions.
3. Preparation of standard buffers by Hendersen-Hasselbach equation – Acetate, phosphate,Tris and determination of pH of solution using pH meter.
4. Estimation of maltose by DNS method
5. Determination of α-amylase activity by DNS method
6. Estimation of proteins by Biuret method
7. Estimation of amino acid by Ninhydrin method
8. Extraction of protein from soaked/sprouted green gram by salting out method
9. Separation of plant pigments by circular paper chromatography
10. Separation of amino acids by thin layer chromatography
11. Native PAGE
12. Determination of iodine number of lipids

** Any two experiments given carrying 20 and 15 marks each experiment.

Text Books / References

1. An Introduction to Practical Biochemistry, 3rd Edition, (2001), David Plummer; Tata McGraw Hill Edu.Pvt.Ltd. New Delhi, India
2. Biochemical Methods,1st Edition, (1995), S.Sadashivam, A.Manickam; New Age International Publishers, India
3. Introductory Practical biochemistry, S. K. Sawhney&Randhir Singh (eds) Narosa Publishing. House, New Delhi, ISBN 81-7319-302-9
4. Experimental Biochemistry: A Student Companion, BeeduSasidharRao& Vijay Despande(ed).I.K International Pvt. LTD, NewDelhi. ISBN 81-88237-41-8
5. Standard Methods of Biochemical Analysis, S. K. Thimmaiah (ed), Kalyani Publishers, Ludhiana ISBN 81-7663-067

OPEN-ELECTIVE SYLLABUS
Title of the Course: OEC-3: Subject code: 21BSC3O3BT3
Paper: Nutrition and Health
B.Sc. Semester – III

Courses	Credits	No. of Classes/Week	Total No. of Lectures/Hours	Duration of Exam in hrs	Internal Assessment Marks	Semester End Exam Marks	Total Marks
Theory	03	03	42	2	40	60	100

Unit No.	Course Content	Hours
Unit I	**Introduction** Concepts of nutrition and health. Definition of Food, Diet and nutrition, Food groups. Food pyramids. Functions of food. Balanced diet. Meal planning. Eat right concept. Functional foods, Prebiotics, Probiotics, and antioxidants	14
Unit II	**Nutrients** Macro and Micronutrients - Sources, functions and deficiency.Carbohydrates, Proteins, Fats – Sources and calories. Minerals –Calcium, Iron, Iodine. Vitamins – Fat soluble vitamins –A, D, E & K. Water soluble vitamins – vitamin C Thiamine, Riboflavin, Niacin. Water–Functions and water balance. Fibre –Functions and sources. Recommended Dietary Allowance, Body Mass Index and Basal Metabolic Rate.	14
Unit III	**Bt based pesticides** Methods of cooking affecting nutritional value. Advantages and disadvantages. Boiling, steaming, pressure cooking. Oil/Fat – Shallow frying, deep frying. Baking. Nutrition through lifecycle. Nutritional requirement, dietaryguidelines:Adulthood, Pregnancy, Lactation, Infancy- Complementary feeding, Pre-school, Adolescence, geriatric. Nutrition related metabolic disorders-diabetes and cardiovascular disease.	14

Text Books / References

1. Sri Lakshmi B, (2007), Dietetics. New Age International publishers. New Delhi
2. Sri Lakshmi B, (2002), Nutrition Science. New Age International publishers. New Delhi
3. Swaminathan M. (2002), Advanced text book on food and Nutrition. Volume I. Bappco
4. Gopalan.C., Rama Sastry B.V., and S.C.Balasubramanian (2009), Nutritive value of Indian Foods.NIN.ICMR.Hyderabad.
5. Mudambi S R and Rajagopal M V, (2008), Fundamentals of Foods, Nutrition & diet therapy by New Age International Publishers, New Delhi

BSc (Hons) Biotechnology-Semester-IV
Title of the Course: DSC-4: Subject code: 21BSC4C4BT4L
Paper: Molecular Biology

Number of Theory Credits	Number of lecture hrs./semester	Number of practical Credits	Number of practical hrs./ Sem
4	56	**2**	**56**

Unit No.	Course Content	Hours
Unit I	**Molecular basis of life and Nucleic Acids** An introduction RNA and experimental proof of DNA as genetic material and types of DNA.Structure and functions of DNA and RNA, Watson and Crick model of DNA and other forms of DNA (A and Z) functions of DNA and RNA including ribozymes.	14
Unit II	**DNA Replication and Repair** Replication of DNA in prokaryotes and eukaryote– Enzymes and proteins involved in replication, Theta model, linear and rolling circle model. Polymerases and all enzyme components. The replication complex: Pre-primming proteins, primosome, replisome, unique aspects of eukaryotic chromosome replication, Fidelity of replication DNA damage and Repair mechanism: photo reactivation, excision repair, mismatch repair and SOS repair.	14
Unit III	**Transcription and RNA processing** Central dogma, RNA structure and types of RNA, Transcription in prokaryotes RNA polymerase, role of sigma factor, promoter, Initiation, elongation and termination of RNA chains. Transcription in eukaryotes: Eukaryotic RNA polymerases, transcription factors, promoters, enhancers, mechanism of transcription initiation, promoter clearance and elongation RNA splicing and processing: processing of pre-mRNA: 5' cap formation, polyadenylation, splicing, rRNA and tRNA splicing.	14

Unit IV	**Regulation of gene expression and translation** Genetic code and its characteristics, Wobble hypothesisTranslation- in prokaryotes and eukaryotes- ribosome, enzymes and factors involved in translation. Mechanism of translation- activation of amino acid, aminoacyl tRNA synthesis, Mechanism- initiation, elongation and termination of polypeptide chain. Fidelity of translation, Inhibitors of translation. Protein folding and modifications, Post translational modifications of proteins.	14

Course: Practical-Semester-4
Paper: Molecular Biology; Paper Code: 21BSC4C4BT4P

1. Preparation of DNA model
2. Estimation of DNA by DPA method
3. Estimation of RNA by Orcinol method
4. Column chromatography – gel filtration (Demo)
5. Extraction and partial purification of protein from plant source by Ammoniumsulphate precipitation.
6. Extraction and partial purification of protein from animal source by organic solvents.
7. Protein separation by SDS-Polyacrylamide Gel Electrophoresis (PAGE)
8. Charts on- Conjugation, Transformation and Transduction, DNA replication, Types of RNA

OPEN-ELECTIVE SYLLABUS

Title of the Course: OEC-4: Subject code: 21BSC4O4BT4

Paper: Intellectual Property Rights

B.Sc. Semester – IV

Courses	Credits	No. of Classes/ Week	Total No. of Lectures/Hours	Duration of Exam in hrs	Internal Assessment Marks	Semester End Exam Marks	Total Marks
Theory	03	03	42	2	40	60	100

Unit No.	Course Content	Hours
Unit I	**Introduction to Intellectual property rights (IPR):** Genesis and scope. Types of Intellectual property rights - Patent, Trademarks, Copyright, Design, Trade secret, Geographical indicators, Plant variety protection. National and International agencies – WIPO, World Trade Organization (WTO), Trade-Related Aspects of Intellectual Property Rights (TRIPS), General Agreement on Tariffs and Trade (GATT).	14
Unit II	**Patenting, process, and infringement** Basics of patents - Types of patents; Patentable and Non-Patentable inventions, Process and Product patent. Indian Patent Act 1970; Recent amendments; Patent Cooperation Treaty (PCT) and implications. Process of patenting. Types of patent applications: Provisional and complete specifications; Concept of "prior art", patent databases (USPTO, EPO, India). Financial assistance, schemes, and grants for patenting. Patent infringement-Case studies on patents (Basmati rice, Turmeric, Neem)	14
Unit III	**Trademarks, Copy right, industrial Designs** Trademarks- types, Purpose and function of trademarks, trademark registration, Protection of trademark. Copy right-Fundamentals of copyright law, Originality of material, rights of reproduction, industrial Designs: Protection, Kind of protection provided by industrial design.	14

Text Books / References

1. Manish Arora. 2007. Universal's Guide to Patents Law (English) 4th Edition) -Publisher: Universal Law Publishing House
2. Kalyan C. Kankanala. 2012. Fundamentals of Intellectual Property. Asia Law House
3. Ganguli, P. 2001. Intellectual Property Rights: Unleashing the knowledge economy. New Delhi: Tata McGraw-Hill Pub
4. World trade organization - http://www.wto.org
   World Intellectual Property organization – www.wipo.intOffice of the controller general of Patents, Design & Trademarks - www.ipindia.nic.in

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS
as per the National Education Policy (NEP) 2023

for

Bachelor of Science in Biotechnology

w.e.f.
Academic Year 2023-24 and onwards

RANI CHANNAMMA UNIVERSITY, BELAGAVI
B.Sc (Biotechnology -program-2023-24

BoS Committee-NEP-B.Sc Biotechnology

S.No.	Name & Address	Designation
1	Prof. Basavaraj Padmasali Chairman & Professor, Dept. of Chemistry RCUB	**Chairman**
2	Dr. Jayashree Uppin Assistant Professor Dept of Biotechnology Basaveshwar Science College, Bagalkot	**Member**
3	Smt.D.S.Shettar Dept of Biotechnology R.L.S College,Belagavi	**Member**
4	Dr. Sharath. R, Dept. of food technology, Davangere.	**Co-opted Members**
5	Dr. Joy Hoskeri, Dept. of Biotechnology, KSA womens University, Vijaypura.	**Co-opted Members**

B.Sc.Biotechnology5th Semester

Program Name	**B.Sc.Biotechnology**		Semester	**5thSemester**
CourseTitle	**Plant and Animal Biotechnology(Theory+Practical)**			
CourseCode:	**BTC5**		No.ofTheoryCredits	**04**
Contacthours	**56hrs**		DurationofESA/Exam	**3Hours**
FormativeAssessmentMarks		**40**	SummativeAssessmentMarks	**60**

Course Objectives

1. Tounderstand thefundamentalaspectsofplanttissueculture.
2. Learnabout biotechnologicaltoolsandtechniquesusedin plantresearchandagriculture.
3. Exploremethodsofintroducingforeigngenesintoplantsthroughtransformationtechniques.
4. Gainpractical skillsinplanttissuecultureforplantimprovementandpropagation.
5. To understand the concepts of modern technology pertaining to large-scale production ofagriculturalproductsandevaluateseveralmethodsforstableandtransientplanttransformation.
6. Designstrategiesforplantgeneticmanipulationagainstbioticandabioticstressors.
7. Hypothesizestrategiestoincrease plantyieldandfruit/seedquality.

CourseOutcomes:

Aftercompletingthiscourse,thestudentisexpectedtolearnthefollowing:

1. Demonstrateacomprehensiveunderstandingofplantbiology,physiology,genetics,andmolecularb iology.
2. Applybiotechnologicaltoolsandtechniquesusedinplantresearchandagriculture,suchasplanttissu eculture,geneticengineeringandtransgenics.
3. Executeplanttissueculturetechniquesforcallusinduction,somaticembryogenesis,andmicropropa gation,andapplytheminplantbreedingandpropagation.
4. Performplanttransformationmethodsanddemonstratetheabilitytointroduceforeigngenesintopla nts usingdifferenttechniques.
5. Utilizemolecularmarkersandgenomicapproachesforgeneticmapping,marker-assistedselection,andplantbreedingprograms.
6. Applymolecularbiologytechniques,includingPCR,DNAsequencing,andgeneexpressionanalysi s,toinvestigateandanalyzeplantgenetic information.
7. Utilizebioinformaticstoolsanddatabasestoanalyzeandinterpretplantgenomicandtranscriptomic data.
8. Apply knowledge about ethical considerations and regulatory frameworks associated withplantbiotechnologyandgeneticallymodifiedcrops.
9. Apply acquired knowledge and problem-solving skills to address real-world challenges inagriculture,foodsecurity,andenvironmentalsustainabilityusingplantbiotechnologyapproaches .

ContentofTheory	56hrs
Unit–I–PlantTissueculture	**14 hrs.**
Introduction, history, definition, and concept of totipotency. Principles of plant tissue culture-cytodifferentiationand morphogenesis, Media and laboratory organization. Techniques – Organ culture (meristem and embryo), callus culture, Somatic embryogenesis and synthetic seeds. **Haploid culture** – Anther, Pollen and Ovule culture, A brief account on protoplast culture and somatic hybridization. Somaclonal variation. **Secondary metabolites-***In vitro* secondary metabolite production, Suspension cultures, cell cultures, growth vs secondary metabolite production, bioreactors and scaling up of secondary metabolite production, limitations, and applications.Production of (Shikonin and Ginseng).	
Unit-IIUnit -II Transgenic Plants and Biofertilizers.	**14 hrs.**
Overview of transgenic plants and their significance in agriculture. - Techniques for introducing foreign genes into plants: Agrobacterium-mediated transformation, biolistic, microinjection, electroporation and chemical mediated transformation. Role of reporter genes in screening and selection. Plant Molecular markers. **Applications of Transgenic Plants** - Improved crop traits through genetic engineering: pest resistance, herbicide tolerance, disease resistance, and abiotic stress tolerance. **Biofertilizers-** Rhizobium, Micorrhiza, Azolla	
Unit–III Animal Cell culture methods	**14 Hrs.**
History and laboratory organization, Media. Cell types and culture characterstics. Pluripotency, Multipotency, Differentiation, Trans differentiation and Reprogramming. **Biology and characterization of cultured cells**- cell adhesion, proliferation, differentiation, morphology of cells, and identification. The basic technique of mammalian cell culture in vitro, Measuring parameters of growth in cultured cells, cell viability, and cytotoxicity. Large-scale culture of cell lines- monolayer, suspension, and immobilized cultures. **Organ and histotypic culture-** Technique, advantages, limitations, applications. Stem cells: types (embryonic, adult, induced pluripotent), isolation, identification, expansion, differentiation and uses, stem cell engineering, ethical issues.	
Unit IV –Transgenic animals and cloning.	**14 hrs.**
Gene constructs, promoter/ enhancer sequences for transgene expression in animals. Selectable markers for animal cells- thymidine kinase and CAT. **Transfection of animal cells**- calcium phosphate coprecipitation, electroporation, lipofection, peptides, direct DNA transfer, viral vectors, Retrovirus, microinjection. Transgene identification methods. **Transgenic and genome-edited animals-** Ethical issues in transgenesis. Manipulation of animal reproduction and characterization of animal genes, Embryo transfer in cattle and applications. Somatic cell cloning - cloning of Dolly. Ethical issues.	

Pedagogy: Lectures,Seminars,IndustryVisits,Debates,Quiz,andAssignments.Casestudies highlight successful applications and challenges in transgenic crop development.Groupdiscussionand criticalanalysisofscientificpapersrelatedtotransgenic plants.

SummativeAssessment=60Marks	
FormativeAssessmentOccasion/type	**WeightageinMarks**
Attendance	10
Seminar	10
DebatesandQuiz	10
Test	10
Total	**60marks+40marks=100marks**

Course Title	**Plant and Animal Biotechnology**	PracticalCredits	**2**
Course No./ **CourseCode:**	BTC5–P	Contact hours	**56hrs**

Content of Practical

1. Laboratory organization of basic and commercial plant tissue culture
2. Media preparation (MS, B5), solid media preparation, and Liquid media preparation
3. Explant preparation – Leaf, bud, rhizome, and meristem
4. Synthetic seed production
5. Callus culture- Initiation and establishment of different types of callus cultures
6. Micropropagation with a suitable example – Stage 0. 1, 2, 3, and 4
7. Staining, cell viability, and cell count of cell cultures
8. Preparation of cell culture media: Preparation of basic cell culture media, such as Dulbecco's Modified Eagle Medium (DMEM),antibiotics, and other required additives.
9. Extraction of serum.
10. Aseptic techniques and sterile handling: Practicing aseptic techniques, including properly handling tools and equipment, working in a laminar flow hood, and maintaining sterility throughout the cell culture process.
11. Filter sterilization: Practice filter sterilization for sensitive media ingredients.
12. Cell counting and viability assessment: Count cells using a hemocytometer or automated cell counter, and perform viability assays (e.g., trypan blue exclusion) to determine the percentage of viable cells.
13. Cell staining and microscopy: Staining the cultured cells using dyes such as hematoxylin and eosin (H&E), and observe them under a light microscope to study cell morphology and structure.
14. Contamination identification and troubleshooting: Learn to identify and troubleshoot common issues in cell culture, such as contamination by bacteria, fungi, or mycoplasma, and implement appropriate corrective measures.
15. Experimental design and data analysis: Students can design and execute simple experiments, record and analyze data, and interpret the results based on their observations and measurements.

PracticalAssessment			
Assessment			
FormativeAssessment		**SummativeAssessment**	**TotalMarks**
AssessmentOccasion/ type	**WeightageinMarks**	**PracticalExams**	
Record	05	25	50
Test	10		
Attendance	05		
Performance	05		
Total	**25**	**25**	

References

6. Bhojwani,S.S.,andRazdan,M.K.(2004).PlantTissueCulture:TheoryandPractice.Amsterdam:ElsevierScience.
7. Brown,T.A.(2010).GeneCloningandDNAAnalysis:AnIntroduction.7thedition.Oxford:Wiley-Blackwell.
8. Gardner,E.J.,Simmons,M.J., andSnustad, D.P.(2008).PrinciplesofGenetics. 10thedition.Hoboken,NJ:JohnWiley&Sons.
9. Glick,B.R.,andPasternak,J.J.(2018).MolecularBiotechnology:PrinciplesandApplicationsofRecombinantDNA.5thedition.Washington,DC:ASM Press.
10. Raven,P.H.,Johnson,G.B.,Losos, J.B.,andSinger,S.R.(2013).Biology.10thedition.New York,NY:McGraw-Hill Education.
11. Reinert,J.,andBajaj,Y.P.S.(1997).AppliedandFundamentalAspectsofPlantCell,TissueandOrganCulture.Berlin:Springer.
12. Russell,P.J. (2013).iGenetics:AMolecularApproach. 3rdedition.Boston,MA:BenjaminCummings.
13. Sambrook,J.,Fritsch,E.F.,andManiatis,T.(1989).MolecularCloning:ALaboratoryManual.2ndedition.ColdSpringHarbor,NY:ColdSpringHarborLaboratoryPress.
14. Slater,A.,Scott,N.W.,andFowler,M.R.(2008).Plant Biotechnology:TheGeneticManipulationofPlants.Oxford:OxfordUniversityPress.
15. Smith,R.(2012).PlantTissue Culture:TechniquesandExperiments.3rdedition.SanDiego,CA:AcademicPress.
16. Taiz,L.,andZeiger,E.(2014).PlantPhysiology.5thedition.Sunderland,MA:SinauerAssociates.
17. Vasil, I.K.,andVasil,V.(2007).Molecular ImprovementofCerealCrops. Dordrecht:Springer
18. Wilson,K.,&Walker,J.(2018).PrinciplesandTechniquesof BiochemistryandMolecularBiology(8thed.).CambridgeUniversity Press.ISBN:978-1316614761.
19. Gahlawat, S.K.,Duhan,J.S.,Salar, R.K.,Siwach,P.,Kumar,S.,&Kaur,P.(2018). Advancesin AnimalBiotechnologyanditsApplications.Springer.ISBN:978-981-10-4701-5.
20. Primrose,S.B.,&Twyman,R.M.(2016).PrinciplesofGeneManipulation(8thed.).BlackwellScience.ISBN:978-1405135442.
21. Verma,A.,&Singh,A.(2013).AnimalBiotechnology.Elsevier.ISBN:978-0124160026.Glick,B.R.,&Pasternak,J.J.(2009).MolecularBiotechnology(4thed.).ASMPress.ISBN:978-1555814984.
22. RangaM.M.AnimalBiotechnology.AgrobiosIndia Limited,2002
23. Watson,J.D.,Meyers,R.M.,AC,A.,&AW,J.(2006).RecombinantDNA(3rded.).ColdSpringHarborL

aboratoryPress.ISBN:978-0716728665.
24. Clynes,M.(Ed.).(1998).AnimalCellCultureTechniques.Springer.
25. Masters, J.R.W. (Ed.). (2000). Animal Cell Culture - Practical Approach. Oxford UniversityPress.
26. Freshney,I.(2016).CultureofAnimalCells:AManual ofBasicTechniqueandSpecializedApplications(8thed.).Wiley-Blackwell.
27. Pörtner,R.(Ed.).(2007).AnimalCellBiotechnology:MethodsandProtocols.HumanaPress.
28. Singh,B.,&Gautam,S.K.(2013).TextbookofAnimalBiotechnology. TheEnergyandResourcesInstitute(TERI).
29. Gupta,P.K.(2018).AnimalBiotechnology.Rastogi Publications.
30. Mather,J.P.,&Barnes,D.(Eds.).(YearN/A).Animal CellCultureMethods.InMethodsinCellBiology,Vol.57.AcademicPress.
31. Singh,B.D.(2006).Biotechnology:ExpandingHorizons(3rded.).KalyaniPublishers.
32. SrivastavaA.K.AnimalBiotechnology.(2018).Oxford&IBHPublishingCoPvt.Ltd,458pp.

B.Sc.Biotechnology5thSemester

ProgramName	**B.Sc.Biotechnology**		Semester	**5thSemester**
Course Title	**GeneticEngineering(Theory+Practical)**			
CourseCode:	BTC5–T	No.ofTheoryCredits		**04**
Contacthours	**56hrs**	DurationofESA/Exam		**03Hours**
FormativeAssessment Marks	**40**	SummativeAssessmentMarks		**60**

CourseObjectives

1. Understandthe fundamentalprinciplesandtechniquesofgeneticengineering.
2. Exploretheapplicationsofgeneticengineeringinagriculture,medicine,biotechnology,andenvironmentalscience.
3. Developpracticalskillsingeneticengineeringtechniquesand laboratoryprocedures.
4. Gainknowledgeofgeneexpressionregulationandgeneticmodificationmethods.
5. Analyzeandinterpretgeneticdatausingbioinformaticstools.
6. Enhancecriticalthinkingandproblem-solvingskillsthroughdiscussionsandcasestudies.
7. Stay updated onemergingtrendsandadvancementsingenetic engineering.

CourseOutcomes:

1. Demonstrate a thorough understanding of the fundamental principles and techniques ofgenetic engineering.
2. Applytheknowledgeofgeneticengineeringtodiverseapplicationsinagriculture,medicine,biotechnology, andenvironmentalscience.
3. Performlaboratoryproceduresanddeveloppracticalskillsingeneticengineeringtechniques.CO 4:Explaingeneexpressionregulationmechanismsandapplygeneticmodificationmethodseffectively.
4. Analyseandinterpretgeneticdatausingbioinformaticstoolsforacomprehensiveunderstandingofgenefunctionandevolutionaryrelationships.
5. Evaluategeneticengineering'sethical,social,andlegalimplicationsandproposeresponsible solutions.
6. Stayupdatedwithrecentadvancementsingeneticengineering,criticallyevaluateemergingtrends,andassess theirpotentialimpactonvariousfields.

ContentofTheory	56hrs
UnitI-Tools of GeneticEngineering	**14 hrs.**
Definition, scope, and historical overview of genetic engineering. Importance and applications in various fields. **Isolation techniques of DNA and RNA**- Techniques for DNA isolation and purification methods (Plants, animals, microorganisms and plasmids) and RNA. Methods for quantification and characterization. **Recombinant DNA technology** – Introduction to molecular cloning. Prokaryotic and eukaryotic host cell. Overview of cloning vectors. Plasmids, phage, cosmid, BAC, and YAC. Features and applications of cloning vectors in genetic engineering. Enzymes used in recombinant DNA technology: Restriction endonucleases, Polymerases, Ligase, kinases, and phosphatases. Expression vectors.	
UnitII-Techniques inGeneticEngineering	**14 Hrs.**
Gene introduction Techniques - Methods of gene delivery. Physical, chemical, and biological methods. Transformation, transfection, electroporation and micro-injection. **Gene Manipulation Techniques**-Gene knockout techniques in bacterial and eukaryotic organisms. **Screenings of recombinants**: Replica plating, Blue-White selection, colony hybridization, FISH. Protein Expression and Purification. Techniques for expressing recombinantproteins using bacterial, animal, and plant expression systems.	
UnitIII-Genome Editing and Applications of Genetic Engineering	**14 Hrs.**
Gene library: Types and applications. **Genome Editing**-Introductiontogenomeeditingtechniques-Principlesandapplicationsofgenomeeditingtechniques-CRISPR-Cas9 and Site-directedmutagenesis. Overview of the diverse applications of genetic engineering. DNAfingerprintinganditsapplicationsinforensics. ProductionofbiopharmaceuticalsusingrecombinantDNAtechnology. Theroleofbiotechnologyinsustainablecrops and livestock improvement. Industrial applications of genetic engineering, such as enzyme production,biofuel production, and bioremediation.	
UnitIV-Bioinformatics, BiosafetyandBioethics	**14 Hrs.**
Bioinformatics and Computational Tools: Introductiontobioinformatics. Genome sequencing techniques, Genome projects: A brief account on Human Genome Project, biological databases. Tools for biological sequence analysis – Sequence comparison and phylogenetic analysis.Role of Bioinformatics in genetic engineering. **Biosafety assessment of transgenic plants**: Biosafety guidelines, Potential risks and benefits of transgenic plants, International regulatoryframeworks for releasing and commercializing genetically modified organisms (GMOs). **Bioethics**: Publicperception and consumer acceptance of transgenic plants. Ethical considerations of GMOs. Socio-economic impacts of GMO **IPR and Patents:** A brief account.	

Pedagogy:Lectures,Seminars,IndustryVisits,Debates,QuizandAssignments

SummativeAssessment=60Marks	
FormativeAssessmentOccasion/ type	**WeightageinMarks**
Attendance	10
Seminar	10
DebatesandQuiz	10
Test	10
Total	**60marks+40marks=100marks**

Course Title	**GeneticEngineering**	PracticalCredits	**02**
Course No./**CourseCode:**	BTC5–P	Contact hours	**56hrs**

Practical

1. **IntroductiontoLaboratoryTechniques** -Safetyguidelinesandlaboratoryprotocols
   Aseptic techniques and proper handling of materials. Basic equipment and instrument operationPreparationofreagentsandmedia
2. **NucleicAcidExtractionandQuantification-** DNA extraction fromdifferent sources (e.g.,bacteria,plant,animal).RNAextractionandpurificationmethods.Qualityassessmentandquantification ofnucleic acids(spectrophotometry, gelelectrophoresis).
3. **Polymerase ChainReaction(PCR)**
   Primer design and optimizationPCRsetupandcycling conditions
   Agarosegel electrophoresisforPCRproductanalysis
4. **GelElectrophoresisandDNAAnalysis**
   AgarosegelelectrophoresisforDNAfragmentseparation andanalysisDNAsizedeterminationusingmolecularweightmarkers
   DNAbandvisualizationtechniques(e.g.,ethidiumbromidestaining,DNAintercalatingdyes)
5. **BioinformaticsforGeneticEngineering**
   Introductiontobioinformaticsdatabasesandtools,
   Sequenceanalysis(e.g.,BLAST,multiplesequencealignment). Predictionofproteinsecondary structureandfunction

PracticalAssessment

Assessment

FormativeAssessment		**SummativeAssessment**	**TotalMarks**
AssessmentOccasion/type	**Weightage inMarks**	**PracticalExams**	
Record	05	25	50
Test	10		
Attendance	05		
Performance	05		

Total	**25**	**25**	

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B.Sc.Biotechnology6th Semester

Program Name	**B.Sc.Biotechnology**		Semester	**6thSemester**
CourseTitle	**Immunology andMedicalBiotechnology(Theory+Practical)**			
CourseCode:	**BTC6**		No.ofTheoryCredits	**04**
Contacthours	**56hrs**		DurationofESA/Exam	**03Hours**
FormativeAssessment Marks	**40**		SummativeAssessmentMarks	**60**

CourseObjectives

1. Tounderstandthebasicaspectsofmedicalbiotechnology,pathogenesisofhumandiseases,diseasediagnosis,management,drugdiscovery,developmentandClinicalresearch.
2. To provide an overview of genetic diseases and the diagnostic techniques used in themedicalfield.
3. This course focuses on the relationship between microbes and human health. Students willstudy important diseases emphasizing on etiology, pathogenesis, diagnosis, treatment, andprevention.

CourseOutcomes:

Aftercompletingthiscourse,thestudentisexpectedtolearnthefollowing:

1. Understandingthebasicsofgeneticinformationresponsiblefordiseasedevelopment
2. Understanding theclassicaland advancedmethodsused forthediagnosisofvariousdiseases
3. Studentswill haveaclearunderstandingofmicrobialdiseases,hostpathogeninteractions,andthe issues associatedwithdrug-resistantmicroorganisms.
4. Studentsalso comprehendthesignificanceofnormalfloraassociatedwithhumanhealth.
5. Theywillalsolearnaboutdrug-Receptorinteractions,drugtoxicologyanditspharmacological significance, conducting clinical trials, ethical issues in clinical researchand a preliminary idea about artificial intelligence and personalized medicine as highlyemergingareas inmedicalscience.

ContentofTheory	56 hrs.
Unit I: Cells andOrgansofthe ImmuneSystem	**14hrs**
Introduction to the Immune System: History of Immunology, Types of Immunity: first and second line of defense, innate and acquired/adaptive immunity, specificity, diversity. Cells of the immune system: Antigen-presenting cells (APCs), Role of B and T-lymphocytes in Humoral immunity and cell-mediated immunity, primary and secondary immune response, Immunization,memory. Organs of the Immune system: Thymus, bone marrow, spleen, Lymph Node, peripheral lymphoid organs	
Unit -II Molecules of the Immune System	**14hrs.**
Antigens and haptens: Properties (foreignness, molecular size, heterogeneity). Adjuvants.Antigenicity and Immunogenicity. Affinity and Avidity. B and T cell epitopes, superantigens Immunoglobulins: Classification, structure, and function. Antibody diversity, Monoclonal and polyclonal antibodies. Major histocompatibility complexes: Classification, structure, and function. Cytokines: Classification andfunction, Hypersensitivity: Reactions – Types I, II, and III. Delayed Type Hypersensitive Response.	
Unit -III Immunotechniques and vaccines	**14 hrs.**
Structure and properties of antigens- iso- and allo-antigens, antigen specificity, Cross-reactivity, Precipitation, Immunodiffusion reactions: Radial immunodiffusion, Ouchterlony double diffusion, Immunoelectrophoresis. Agglutination: Agglutination reactions. ELISA, RIA. Immunocytochemistry, Fluorescent Techniques. Vaccines: Conventional vaccines (Live attenuated, heat killed and toxoid), Recombinant vaccines-subunit (Peptide, Protein and DNA) Attenuated recombinant vaccine, vector recombinant vaccine. CoVID19 vaccines. edible vaccines, plantibodies, and Cancer vaccines.	
Unit IV: Microbial disease of human and therapy	**14hrs.**
Microbial diseases in humans**:** Mode of infection, symptoms, epidemiology and control measures of diseases caused by Viruses (Hepatitis-B), Bacteria (Typhoid), Fungi (Aspergillosis), Protozoa (Malaria) Autoimmune disorders with examples. Immunodeficiencies: Primary and secondary, immunodeficiencies; acquired immunodeficiency syndrome. cancer immunotherapy. Role of biotechnology in diagnosis and therapy. Gene therapy.	

Pedagogy:Lectures,Seminars,IndustryVisits,Debates,QuizandAssignments

SummativeAssessment=60Marks	
FormativeAssessmentOccasion/type	**WeightageinMarks**
Attendance	10
Seminar	10
DebatesandQuiz	10
Test	10
Total	**60marks+40marks=100marks**

Course Title	**Immunology**	PracticalCredits	**02**

Course No.	**BTC6**	Contact hours	**60hrs**

ContentofPractical

1. Hemagglutination ofABOBloodgroups
2. DeterminationofRhfactor
3. Whole CountofWBCusingHemocytometer
4. CellsoftheImmuneSystem (differential
5. Radialimmunodiffusion
6. Ouchterlony doublediffusion
7. ELISA–Demonstrate
8. SerumImmunoelectrophoresis
9. WesternBlotting
10. Haemoglobinestimation using a haemometer
11. Commercialkits-based diagnosis-Widaltest,VDRLtest

PracticalAssessment			
Assessment			
FormativeAssessment		**SummativeAssessment**	**Total Marks**
AssessmentOccasion/type	**WeightageinMarks**	**PracticalExams**	
Record	05	25	50
Test	10		
Attendance	05		
Performance	05		
Total	**25**	**25**	

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B.Sc.BiotechnologySixthSemester

Program Name	**B.Sc.Biotechnology**		Semester	**6thSemester**
CourseTitle	**Bioprocess and Environmental Biotechnology (Theory)**			
CourseCode:	**BTC6**		No.ofTheoryCredits	**04**
Contacthours	**56hrs**		DurationofESA/Exam	**3Hours**
Formative AssessmentMarks		**40**	SummativeAssessmentMarks	**60**

CourseObjectives:

1. The objective of this paper is to introduce students to the fundamentals of bioprocessengineering and technology, and its industrial applications, thus enabling the students tounderstand the requirements of bioprocess technology in advanced and emerging areas ofbiologicalscience.
2. The field of biotechnology is developing very rapidly and needs skilled engineers with abioprocess engineering background to design, build, control, and operate bioreactors andfermenters.
3. Designbioreactorsfortheproductionofvariousproducts.
4. Analyzeandformulatemechanismsforenzymaticreactions.
5. Understandsolubleandimmobilizedenzymetechnologiesfortheproductionofindustrial andmedicalproducts.
6. Predictimportantyield coefficients using the principles ofstoichiometry and energeticsofmicrobialgrowth.
7. Performsimulationsofmicrobialgrowthandmetabolism.
8. Presentknowledgeaboutmajormetabolicpathwaysandthoserelatedtobiofuelproductio nfrommicrobes.
9. Analyzemetabolicnetworkandmetabolicflux.
10. Estimate kineticparametersfromrawfermentationdata.
11. Specify required technologies to effectively utilize genetically engineeredmicroorganismsforbioprocessing.

Courseoutcome:

At the endofthecourse,the studentshouldbeableto:

1. Students can understand the exploitation of microorganisms for industrial use and theirimprovement, stoichiometric analysis, and formulation of media for efficient growth andproductionofmicrobialorcell-basedproducts.
2. Students will also have an idea about the design, operation, and specific applications ofvarious bioreactors.
3. Graduates acquire professional leadership roles in bioprocess engineering and relatedfieldsleadingtosuccessfulcareer.
4. Graduatesestablishcommitmentandcontributetowardsustainableandbio-basedeconomic developmentforabettersociety.
5. Graduatesengageinlifelonglearning byconductingpracticalengineeringtasks.
6. Abletoacquireasoundknowledgeinmathematicsandnaturalscienceandapplyengineering principles in determining and solving contemporary and complex problemsrelatedtobioprocessing.Abletoformulateandoperateconversionprocessesofbiologi calresourcesintobio-basedvalue-addedmaterialsrelatedtofood,feed,fuels,

pharmaceutical,nutraceutical,biomaterials,orbiochemicals.

7. Able to design biological reactions and reactors including their materials,instrumentation, control,andmodeling.
8. Able tocommunicate a creativeidea and workseffectivelywithin theprofessionalcommunityandlargersociety.
9. Abletodemonstrateanabilitytoworkinmultidisciplinaryandmulticulturalteamsindevelopin ginnovative engineeringsolutionsusingcomplexproblem-solvingskills.
10. Abletoconductpractice-basedtasksrelatedtobioprocessinginaresponsible,safe,voluntary,self-motivated, andethicalmanner.
11. Abletoappraisebioprocessingandbioproductsmanufacturingandvalorizationusingentrepre neurshipprinciples

ContentofTheory	**56 hrs.**
UNIT- I – Introduction to bioprocess technology	**10hrs**
Basic components of fermentation technology. Strain improvement of industrially important microorganisms. Types of microbial culture and its growth kinetics– Batch, Fed-batch, and Continuous culture. Principles of upstream processing – Media preparation, Inocula development, and sterilization	
UNIT- II-Bioreactors and downstream processing	
Bioreactors- Design and components - Impeller, Baffles, Sparger; **Specialized bioreactors**- design and their functions: airlift bioreactor, tubular bioreactors, membrane bioreactors, tower bioreactors, fluidized bed reactor, packed bed reactors **Downstream processing**- cell disruption, precipitation methods, solid-liquid separation, liquid-liquid extraction, filtration, centrifugation, chromatography, drying devices (Lyophilization and spray dry technology), crystallization, biosensors-construction and applications, Microbial production of ethanol, amylase, Penicillin, Vinegar and Single Cell Proteins.	**18hrs**
Unit III- Fundamentals of Environmental Biotechnology	**14hrs**
Introduction to Environmental Biotechnology- Principles of Environmental Science. Role of Biotechnology in Environmental Conservation. Microbial Processes in Environmental Biotechnology. Pollution and Biotechnology – Major issues in environmental pollution and the role of biotechnology in addressing them. Use of biosensors in pollution monitoring. Biotechnological Methods in Pollution Abatement-Reduction of CO2 emission. Addressing eutrophication through biotechnological interventions. Application of cell immobilization techniques in pollution abatement.	
Unit IV- Bioremediation and Waste Management	**14hrs**
Importance of bioremediation in environmental cleanup. Types of contaminantssuitable for bioremediation. Microorganisms used in bioremediation. *In-situ* Bioremediation Methods. – Bioaugmentation. Biostimulation. Bioventing. Phytoremediation. *Ex-situ* Bioremediation Methods – Composting, Land farming, Biopile and bioslurry systems. Bio metallurgy and bio-mining.Waste water Management. Waste water Characterization and Composition. Biological Processes in Waste water Treatment. Activated Sludge Process and Biological Nutrient Removal, Anaerobic Digestion and Biogas Production. Solid Waste Management.Xenobiotics – Characterstics, types and their bidegradation.	

Pedagogy:Lectures,Seminars,IndustryVisits,Debates,QuizandAssignments

SummativeAssessment=60Marks	
FormativeAssessmentOccasion/type	**WeightageinMarks**
Attendance	10
Seminar	10
DebatesandQuiz	10
Test	10
Total	**60marks+40marks=100marks**

ourseTitle	**BioprocessTechnology**	PracticalCredits	**02**
CourseNo.	**BTC6**	Contact hours	**56hrs**

ContentofPractical

1. Bacterial growthcurve.
2. Calculationofthethermaldeathpoint(TDP)ofamicrobialsample.
3. Studyoffermentor-Demonstration.
4. Productionofwine–estimationofthepercentageofalcohol,totalacidity&volatileacidityinwine.
5. Productionandanalysisofethanol.
6. Productionand analysisofamylase.
7. Productionandanalysisoflactic acid.
8. Isolationofindustriallyimportantmicroorganismsfromnaturalresources.

PracticalAssessment			
Assessment			
FormativeAssessment		**SummativeAssessment**	**TotalMarks**
Assessment Occasion/ type	**WeightageinMarks**	**PracticalExams**	
Record	05	25	50
Test	10		
Attendance	05		
Performance	05		
Total	**25**	**25**	

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Pedagogy:Lectures,Seminars,IndustryVisits,Debates,QuizandAssignments

SummativeAssessment=60Marks	
FormativeAssessmentOccasion/type	**WeightageinMarks**
Attendance	10
Seminar	10
DebatesandQuiz	10
Test	10
Total	**60marks+40marks=100marks**

CourseTitle	**MedicalBiotechnology**	PracticalCredits	**2**
Course No./ **Course Code:**	**BTC6**	Contact hours	**56hrs**

ContentofPractical

1. Bacteriologicalexamination ofbloodandpusfromclinical samples
2. Separation ofmononuclearcells by Ficollhypaquemethod
3. Haemoglobinestimation using a haemometer
4. Haemagglutination test-BloodTyping
5. Commercialkits-based diagnosis-Widaltest,VDRLtest
6. KirbyBauer'sAntibioticSensitivitytest(bacterial)
7. Moleculargenotyping ofHumanPapillomaVirususingPCRtechnique
8. Liver Functioningtests–Serum albuminandSerum bilirubintests
9. Cytological examination ofnormalandtumorouscells
10. Estimationofserumcholesterol
11. Blood glucose estimationbyfolinwumethod

PracticalAssessment			
Assessment			
FormativeAssessment		**SummativeAssessment**	**TotalMarks**
AssessmentOccasion/type	**WeightageinMarks**	**PracticalExams**	
Record	05	25	50
Test	10		
Attendance	05		
Performance	05		
Total	**25**	**25**	

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RANI CHANNAMMA UNIVERSITY, BELAGAVI

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PROGRAM /COURSE STRUCTURE AND SYLLABUS
as per the Choice Based Credit System (CBCS) designed in accordance with
Learning Outcomes-Based Curriculum Framework (LOCF)
of National Education Policy (NEP) 2020
for

Bachelor of Science (Botany)

w.e.f.

Academic Year 2021-22 and onward

Board of Studies (UG) Committee

(NEP-Bachelor of Science)

Bachelor of science (Botany) Programme 2021-22

1	Prof. Shantayya. V.Gurumath, M.G.V.C Arts, Commerce and Science College, muddebihal, Dist Vijayapur	Chairman	
2	Prof. Khalid ahmed Nishani, Anjuman College, Vijayapur.	Member	
3	Dr. N.A Jadhav,B.K.College, Belagavi.	Co-Opt Member	
4	Shri. Y.B.dalvi, GSS College, Belagavi	Co-Opt Member	

Dr. Vijayalaxmi S Shigehalli
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Rani Channamma University, Belagavi

Prof. Shantayya. V.Gurumath
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Department of Botany
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PREAMBLE

The objective of a B.Sc. (Honors) programme in Higher Education system is to prepare its students for the society. The current pattern is designed to provide a focused learning outcome-based syllabus at the Honors level providing structured teaching-learning experiences catering to the needs of the students. The honors courses will prepare the students both academically and in terms of employability. The programme also inculcates various attributes at the Honors level. These attributes encompass values related to emotional stability, social justice, creative and critical thinking, well-being and various skills required for employability, thus preparing students for

continuous learning and sustainability. The new curriculum based on learning outcomes of BSc (Honours) Botany offers knowledge of areas including Plant Systematics, Plant Biotechnology, Resource Botany, Genetics, Ecology, Conservation biology, Physiology and Bioinformatics, Medicinal plants, Plant diseases management etc. The courses define clearly the objectives and the learning outcomes, enabling students to choose the elective subjects broadening their skills in the field of Botany. The course also offers skills to pursue research and teaching in the field of Botany and thus would produce best minds to meet the demands of society This curriculum framework for the bachelor-level program in Botany is developed keeping in view of the student-centric learning pedagogy, which is entirely outcome-oriented and curiosity-driven. To avoid a rote-learning approach and foster imagination, the curriculum is more leaned towards self-discovery of concepts. The curriculum framework focuses on the pragmatist approach whereby practical application of theoretical concepts is taught with substantial coverage of practical and field works.

Aims of Bachelor's degree programme in Botany

The broad aims of the bachelor's degree programme in Botany are:

1. To provide an environment that ensures the cognitive development of students in a holistic manner. A dialogue about plants and their significance is fostered in this framework, rather than didactic monologues on mere theoreticalaspects
2. To provide the latest subject matter, both theoretical as well as practical, such a way to foster their core competency and discovery learning. A botany graduate as envisioned in this framework would be sufficiently competent in the field to undertake further discipline-specific studies, as well as to begin domain-relatedemployment.
3. To mould a responsible citizen who is aware of the most basic domain-independent knowledge, including critical thinking andcommunication.
4. To enable the graduate to prepare for national as well as international competitive examinations, especially UGC-CSIR NET, and UPSC Civil ServicesExamination.

Program Learning Outcomes

The students graduating with the Degree B.Sc. Three years and B. Sc. (Honors) Botany should be able toacquire.

Core competency: Students will acquire core competency in the subject Botany, and allied subject areas.

1. The student will be able to identify major groups of plants and compare the characteristics of lower (e.g. algae and fungi) and higher (angiosperms and gymnosperms)plants.
2. Students will be able to use the evidence-based comparative botany approach to explain the evolution of organisms and understand the genetic diversity on the earth. The students will be able to explain various plant processes and functions, metabolism, concepts of gene, genome, and how organism's function is influenced at the cell, tissue, and organ level.

3. Students will be able to understand the adaptation, development, and behavior of different forms oflife.
4. The understanding of networked life on earth and tracing the energy pyramids through nutrient flow is expected from thestudents.
5. Students will be able to demonstrate the experimental techniques and methods of their area of specialization inBotany.

Analytical ability:

The students will be able to demonstrate the knowledge in understanding research and addressing practicalproblems.

1. Application of various scientific methods to address different questions by formulating the hypothesis, data collection, and critically analyze the data to decipher the degree to which their scientific work supports theirhypothesis.

Critical Thinking and problem-solving ability:

An increased understanding of fundamental concepts and their applications of scientific principles is expected at the end of this course. Students will become critical thinkers and acquire problem-solving capabilities.

Digitally equipped:

Students will acquire digital skills and integrate the fundamental concepts with modern tools.

Ethical and Psychological strengthing: Students will also strengthen their ethical and moral values and shall be able to deal with psychological weaknesses.

Team Player: Students will learn team workmanship in order to serve efficiently institutions, industry, and society.

Independent Learner: Apart from the subject-specific skills, generic skills, especially in botany, the program outcome would lead to gain knowledge and skills for further higher studies, competitiveexaminations,andemployment.Learningoutcomes-basedcurriculumwouldensure

equal academic standards across the country and a broader picture of their competencies. The Bachelor's program in Botany and Botany honors may be mono-disciplinary or multidisciplinary with following broad objectives.

1. Critically evaluation of ideas and arguments by collecting relevant information about the plants, to recognize the position of the plant in the broad classification and phylogenetic level.
2. Identify problems and independently propose solutions using creative approaches, acquired through interdisciplinary experiences, and a depth and breadth of knowledge/expertise in the field of Plant Identification.
3. Accurately interpretation of collected information and use taxonomical information to evaluate and formulate a position of the plant in taxonomy.
4. Students will be able to apply the scientific method to questions in botany by formulating testable hypotheses, collecting data that address these hypotheses, and analyzing those data to assess the degree to which their scientific work supports theirhypotheses.
5. Students will be able to present scientific hypotheses and data both orally and in writing in the formats that are used by practicingscientists.
6. Students will be able to access the primary literature, identify relevant works for a particular topic, and evaluate the scientific content of theseworks.
7. Students will be able to apply fundamental mathematical tools (statistics, calculus) and physical principles (physics, chemistry) to the analysis of relevant biologicalsituations.
8. Students will be able to identify the major groups of organisms with an emphasis on plants and be able to classify them within a phylogenetic framework. Students will be able to compare and contrast the characteristics of plants, algae, and fungi that differentiate them from each other and other forms oflife.

9. Students will be able to use the evidence of comparative biology to explain how the theory of evolution offers the only scientific explanation for the unity and diversity of life on earth. They will be able to use specific examples to explicate how descent with modification has shaped plant morphology, physiology, and lifehistory.
10. Students will be able to explain the ecological interconnectedness of life on earth by tracing energy and nutrient flow through the environment. They will be able to relate the physical features of the environment to the structure of populations, communities, andecosystems
11. Students will be able to demonstrate proficiency in the experimental techniques and methods of analysis appropriate for their area of specialization withinbiology.

B. Sc. Botany Course outcomes under NEP program

The framework of curriculum for the Bachelor's program in Botany aims to transform the course content and pedagogy to provide a multidisciplinary, student-centric, and outcome-based, holistic education to the next generation ofstudents.

Aside from structuring the curriculum to be more in-depth, focused, and comprehensive with significant skill-set for all exit levels; keeping in mind the job prospects; the emphasis has been to maintain academic coherence and continuum throughout the program of study and help build a strong footing in the subject, thereby ensuring a seamless transition into theircareers.

Special attention is given to eliminate redundancy, discourage rote learning, and espouse a problem-solving, critical thinking, and inquisitive mindset among learners.

The curriculum embraces the philosophy that science is best learned through experiential learning, not limited to the confines of a classroom but rather through hands-on training, projects, field studies, industrial visits, andinternships.

This updated syllabus, with modern technology, helps students stay informed on the leading- edge developments in plant sciences and promotes curiosity, innovation, and a passion for research, that will serve them well in their journey into scientific adventure and discovery beyondgraduation.

The goal is to equip students with holistic knowledge, competencies, professional skills, and a strong positive mindset that they can leverage while navigating the current stiff challenges of the job market.

Program Outcomes:

By the end of the program the students will be able to:

(Refer to literature on outcome based education (OBE) for details on Program Outcomes)

PO1: Skill development for the proper description using botanical terms, identification, naming and classification of life forms especially plants and microbes.

PO2: Acquisition of knowledge on structure, life cycle and life processes that exist among plant and microbial diversity through certain model organism studies.

PO3: Understanding of various interactions that exist among plants and microbes; to develop the curiosity on the dynamicity of nature.

PO4: Understanding of the major elements of variation that exist in the living world through comparative morphological and anatomical study.

PO5: Ability to explain the diversity and evolution based on the empirical evidences in morphology, anatomy, embryology, physiology, biochemistry, molecular biology and life history.

PO6: Skill development for the collection, preservation and recording of information after observation and analysis- from simple illustration to molecular database development.

PO7: Making aware of the scientific and technological advancements- Information and Communication, Biotechnology and Molecular Biology for further learning and research in all branches of Botany..

PO8: Internalization of the concept of conservation and evolution through the channel of spirit of inquiry.

PO 9: To enable the graduates to prepare for national as well as international level competitive examinations like UGC-CSIR, UPSC, KPSC etc.

PO10: To enable the students for practicing the best teaching pedagogy as a biology teacher including the latest digital modules.

PO 11: The graduates should be knowledgeable and competent enough to appropriately deliver on aspects of global importance like climate change, SDGs, green technologies etc at the right opportunity.

PO 12: The graduate should be able to demonstrate sufficient proficiency in the hands-on experimental techniques for their area of specialization within biology during research and in the professional career.

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Curricular and Credits Structure under Choice Based Credit System [CBCS] of Botany Major& One Minor Discipline Scheme for the Four Years Computer Science B.Sc. Undergraduate Honors Programmewith effect from 2021-22

SEMESTER-I										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L1	21BSC1L1LK1	Kannada	40	60	100	4	-	-	3	2
	21BSC1L1LFK1	Functional Kannada								
L2	21BSC1L2LEN2	English	40	60	100	4	-	-	3	2
	21BSC1L2LHI2	Hindi								
	21BSC1L2LSN2	Sanskrit								
	21BSC1L2LTE2	Telugu								
	21BSC1L2LUR2	Urdu								
DSC1	21BSC1BOT1L	Microbial Diversity and technology	40	60	100	4	-	-	4	2
	21BSC1BOT1P	Microbial Diversity and technology	25	25	50	-	-	4	2	3
DSC1	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
SEC1	21BSC1SE1CS1	Digital Fluency	25	25	50	1	-	2	2	2
VBC1	21BSC1V1PE1	Physical Education- Yoga	25	-	25	-	-	2	1	-
VBC2	21BSC1V2HW1	Health & Wellness	25	-	25	-	-	2	1	-
OEC1	21BSC1BOT1	Plants and Humanwelfare	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	
SEMESTER-II										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	

			IA	SEE	Total	L	T	P		Duration of exams (Hrs)
L3	21BSC2L3LK2	Kannada	40	60	100	4	-	-	3	2
	21BSC2L3FKL2	Functional Kannada								
L4	21BSC2L4EN2	English	40	60	100	4	-	-	3	2
	21BSC2L4HI2	Hindi								
	21BSC2L4SN2	Sanskrit								
	21BSC2L4TE2	Telugu								
	21BSC2L4UR2	Urdu								
DSC2	21BSC2BOT2L	Diversity of Non flowering plants	40	60	100	4	-	-	4	2
	21BSC2BOT2P	Diversity of Non flowering plants	25	25	50	-	-	4	2	3
DSC2	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
AECC1	21BSC2AE1ES2	Environmental Studies	20	30	50	3	-	-	2	2
VBC3	21BSC2V3PE2	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC4	21BSC2V4NC1	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC2	21BSC2BOT2	Bio-fuels	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	
Exit option with Certificate (with the completion of courses equal to a minimum of 48 credits)					**1400**				**50**	

SEMESTER-III

Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			IA	SEE	Total	L	T	P		
L5	21BSC3L5LK3	Kannada	40	60	100	4	-	-	3	2
	21BSC3L5LFK3	Functional Kannada								
L6	21BSC3L6EN3	English	40	60	100	4	-	-	3	2
	21BSC3L6HI3	Hindi								
	21BSC3L6SN3	Sanskrit								
	21BSC3L6TE3	Telugu								
	21BSC3L6UR3	Urdu								
DSC3	21BSC2BOT3L	Plant Anatomy and Developmental Biology	40	60	100	4	-	-	4	2
	21BSC2BOT3P	Plant Anatomy and Developmental Biology	25	25	50	-	-	4	2	3
DSC3	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
SEC2	21BSC3SE2ES2	Artificial Intelligence	25	25	50	1	-	2	2	2
VBC5	21BSC3V5PE3	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC6	21BSC3V6NC2	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC3			40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	

SEMESTER-IV

Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			IA	SEE	Total	L	T	P		
L7	21BSC4L7LK4	Kannada	40	60	100	4	-	-	3	2

	21BSC4L7LFK4	Functional Kannada								
L8	21BSC4L8EN4	English	40	60	100	4	-	-	3	2
	21BSC4L8HI4	Hindi								
	21BSC4L8SN4	Sanskrit								
	21BSC4L8TE4	Telugu								
	21BSC4L8UR4	Urdu								
DSC4	21BSC2BOT4L	Ecology and Conservation Biology	40	60	100	4	-	-	4	2
	21BSC2BOT4P	Ecology and Conservation Biology	25	25	50	-	-	4	2	3
DSC4	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
AECC2	21BSC4AE1CI2	Constitution of India	20	30	50	3	-	-	2	2
VBC7	21BSC4V5PE4	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC8	21BSC4V6NC3	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC4			40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	
Exit option with Diploma in Science (with the completion of courses equal to a minimum of 96 credits)OR continue studies with Major and Minor					**2800**				**100**	

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Botany as Major Discipline										

DSC5	21BSC2BOT5L	Plant Taxonomy & Resource Botany	40	60	100	3	-	-	3	2
	21BSC2BOT5P	Plant Taxonomy & Resource Botany	25	25	50	-	-	4	2	3
DSC6	21BSC2BOT6L	Cell Biology and Genetics	40	60	100	3	-	-	3	2
	21BSC2BOT6P	Cell Biology and Genetics	25	25	50	-	-	4	2	3
DSC5	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	3
VC1	21BSC5VC1US	Unix & Shell Programming	40	60	100	3	-	-	3	2
	21BSC5VC1FD	Fundamentals of Data Science								
VBC9	21BSC5V5PE5	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC10	21BSC5V6NC4	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
SEC3	21BSC5SE3CS3	Cyber Security	25	25	50	1	-	2	2	2
Total Marks					**650**	**Semester Credits**			**22**	

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Botany as Major Discipline										
DSC7	21BSC2BOT7L	Plant Physiology and Biochemistry	40	60	100	3	-	-	3	2

	21BSC2BOT7P	Plant Physiology and Biochemistry	25	25	50	-	-	3	2	3
DSC8	21BSC2BOT8L	Plant Biotechnology	40	60	100	3	-	-	3	2
	21BSC2BOT8P	Plant Biotechnology	25	25	50	-	-	3	2	3
DSC6	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	3	2	3
VC2	21BSC6VC2HT	Health Care Technologies	40	60	100	3	-	-	3	2
	21BSC6VC2DM	Digital Marketing								
INT1	21BSC6 INT1L	Internship*	25	50	75	-	-	-	2	2
VBC1	21BSC6V5PE5	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC2	21BSC6V6NC4	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
SEC4	21BSC6SE4CS4	Professional Communication	25	25	50	1	-	2	2	2
Total Marks					**700**	**Semester Credits**			**24**	
Exit with Bachelor of Science Degree, B. Sc. (with the completion of courses equal to a minimum of 140 credits)or continue studies with the Major					**4175**	**Total Credits for BSC Program**			**146**	

*Internship between 5 th& 6th Semester with 3 to 4 weeks

Botany Subject as a Minor Discipline

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC5 As a Minor Subject	21BSC2BOT5L	Plant Taxonomy & Resource Botany	40	60	100	3	-	-	3	2

	21BSC2BOT5P	Plant Taxonomy & Resource Botany	25	25	50	-	-	3	2	3

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC6 As a Minor Subject	21BSC2BOT7L	Plant Physiology and Biochemistry	40	60	100	3	-	-	3	2
	21BSC2BOT7P	Plant Physiology and Biochemistry	25	25	50	-	-	3	2	3

Concept Note, Abbreviation Explanation and Coding:

Concept Note:

1. **CBCS** is a mode of learning in higher education which facilitates a student to have some freedom in selecting his/her own choices, across various disciplines for completing a UG/PG program.
2. A credit is a unit of study of a fixed duration. For the purpose of computation of workload as per UGC norms the following is mechanism be adopted in the University:
   One credit (01) = One Theory Lecture (L) period of one (1) hour.
   One credit (01) = One Tutorial (T) period of one (1) hour.
   One credit (01) = One practical (P) period of two (2) hours.
3. Course: paper/subject associated with AECC, DSC, DSEC, SEC, VBC, OEC, VC, IC and MIL
4. In case of **B.Sc**. **Once a candidate chose two courses/subjects of a particular two department in the beginning, he/she shall continue the same till the end of the degree, then there is no provision to change the course(s) and Department(s).**
5. A candidate shall choose **one of the Department's courses as major and other Department course as minor in fifth and sixth semester and major course will get continued in higher semester.**
6. Wherever there is a practical there will be no tutorial and vice-versa
7. A major subject is the subject that's the main focus of Core degree/concerned.
8. A minor is a secondary choice of subject that complements core major/ concerned.
9. Vocational course is a course that enables individual to acquire skills set that are required for a particular job.
10. Internship is a designated activity that carries some credits involving more than **25 days** of working in an organization (either in same organization or outside) under the guidance of an identified mentor. Internship shall be an integral part of the curriculum.
11. **OEC: For non- Botany science students. Botany Science students have to opt for OEC from departments other than major and minor disciplines.**

Abbreviation Explanations:

1. AECC: Ability Enhancement Compulsory Course.
2. DSC: Discipline Specific Core Course.
3. DSEC: Discipline Specific Elective Course.
4. SEC: Skill Enhancement Course.
5. VBC: Value Based Course.
6. OEC: Open/Generic Elective Course
7. VC: Vocational Course.
8. IC: Internship Course
9. L1: Language One
10. L2: MIL
11. L= Lecture; T= Tutorial; P=Practical.
12. MIL= Modern Indian Language; English or Hindi or Telugu or Sanskrit or Urdu

Program Coding:

1. Code 21: Year of Implementation
2. Code BSC: BSC Program under the faculty of Applied Science of the University
3. Code 1: First Semester of the Program, (2 to 6 represent higher semesters)
4. Code AE: AECC, (C for DSC, S for SEC, V for VBC and O for OEC)
5. Code 1: First "AECC" Course in semester, similarly in remaining semester for such other courses
6. Code LK: Language Kannada, similarly Language English, Language Hindi, Language Telugu, Language Sanskrit, &Language Urdu
7. Code 1: Course in that semester.
8. Bot: Botany

ASSESSMENT METHODS

Evaluation Scheme for Internal Assessment:

Theory:

Assessment Criteria	40 marks
1st Internal Assessment Test for30 marks 1 hr after 8 weeks and 2nd Internal Assessment Test for 30 marks 1 hr after 15 weeks . Average of two tests should be considered.	30
Assignment	10
Total	**40**

Assessment Criteria	25 marks
1st Internal Assessment Test for20 marks 1 hr after 8 weeks and 2nd Internal Assessment Test for 20 marks 1 hr after 15 weeks. Average of two tests should be considered.	20
Assignment	05
Total	**25**

Practical:

Assessment Criteria	25 marks
Semester End Internal Assessment Test for 20 marks 2 hrs	20
Journal (Practical Record)	05
Total	**25**

Question Paper Pattern:

RANI CHANNAMMA UNIVERSITY

Department of Botany

BSc(botany)

Sub: Code: Maximum Marks: 60

a. Answer any Six Questions from Question 1 b. Answer any Three each Questions from Question 2,3,4 and 5

Q.No.1.	Answer any Six Questions (Atlest Two question from Each Unit) a. b. c. d, e. f. g. h.	2X6=12
Q.No.2.	(Should cover Entire Unit-I) a. b. c. d.	4X3=12
Q.No.3.	(Should cover Entire Unit-II) a. b. c. d.	4X3=12
Q.No.4.	(Should cover Entire Unit-III) a. b. c. d.	4X3=12
Q.No.5.	(Should cover Entire Unit-IV) a. b. c. d.	4X3=12

COURSE-WISE SYLLABUS

Semester I

Year	I	**Course Code:** 21BSC1BOT1L **Course Title:** Microbial diversity and Technology	**Credits**	04
Sem.	1		**Hours**	52
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	
Course Outcomes		1. Understand the fascinating diversity, evolution, and significance ofmicroorganisms. 2. Comprehend the systematic position, structure, physiology and life cycles of		

	microbes and their impact on humans andenvironment. 3. Gain laboratory skills such as microscopy, microbial cultures, staining, identification, preservation of microbes for their applications in research andindustry.	
Unit No.	**Course Content**	**Hours**
Unit I	**Chapter No. 1:** Microbial diversity-Introduction to microbial diversity; Hierarchical organization and positions of microbes in the living world. Whittaker's five-kingdom system . Distribution of microbes in soil, air, food and water. Significance of microbial diversity in nature. **5 Hours** **Chapter No. 2** History and developments of microbiology-Microbiologists and their contributions (Leeuwenhoek, Louis Pasteur, Robert Koch, Joseph Lister, Dmitri Iwanowski, SergiusWinogradsky and M W Beijerinck and Paul Ehrlich).**3 Hours** **Chapter No. 3** Microscopy-Working principle and applications of light, dark field, phase contrast and electron microscopes (SEM and TEM). Microbiological stains (acidic, basic and special) and Principles of staining. Simple, Gram's and differential staining. **5 Hours**	13
Unit II	**Chapter No. 4.** Culture media for Microbes-Natural and synthetic media, Routine media -basal media, enriched media, selective media, indicator media, transport media, and storage media. **3 Hours** **Chapter No. 5**. Sterilization methods -Principle of disinfection, antiseptic, tyndallisation and Pasteurization, Sterilization-Sterilization by dry heat, moist heat, UV light, ionization radiation, filtration. Chemical methods of sterilization-phenolic compounds, anionic and cationic detergents. **5 Hours** **Chapter No. 6**. Microbial Growth-Microbial growth and measurement. Nutritional types of Microbes- autotrophs and heterotrophs, phototrophs and chemotrophs; lithotrophs and organotrophs. **5 Hours**	13
Unit III	**Chapter No. 7** Microbial cultures and preservation-Microbial cultures. Pure culture and axenic cultures, subculturing, Preservation methods-overlaying cultures with mineral oils, lyophilisation. Microbial culture	13

	collections and their importance. A brief account on ITCC, MTCC and ATCC. **5 Hours** **Chapter No. 8. Viruses-** General structure and classification of Viruses; ICTV system of classification. Structure and multiplication of TMV, SARS-COV-2, and Bacteriophage (T2). Cultivation of viruses. Vaccines and types. **5 Hours** **Chapter No. 9. Viroids**- general characteristics and structure of Potato Spindle Tuber Viroid (PSTVd); Prions - general characters and Prion diseases**.** Economic importance of viruses. **3 Hours**	
Unit IV	**Chapter No. 10. Bacteria-** General characteristics and classification. Archaebacteria and Eubacteria. Ultrastructure of Bacteria; Bacterial growth and nutrition. Reproduction in bacteria- asexual and sexual methods. Study of *Rhizobium* and its applications. A brief account of Actinomycetes and Cyanobacteria. Mycoplasmas and Phytoplasmas- Generalcharacteristics and diseases. Economic importance of Bacteria. **5 Hours** **Chapter No. 11. Fungi-**General characteristics and classification. Thallus organization and nutrition in fungi. Reproduction in fungi (asexual and sexual). Heterothallism and parasexuality. Type study of *Phytophthora, Rhizopus,,Puccinia, Penicillium***.** **5 Hours** **Chapter No. 12. Lichens –** Structure and reproduction. **VAM Fungi** and their significance. **Fungal diseases**-. Black stem rust of wheat; Downy Mildew of Bajra, Grain smut of Sorghum, Citrus Canker, Economic importance of Fungi. **3 Hours**	13
Recommended Leaning Resources		

Print Resources	**Text Books** 1. Ananthnarayan R and Panikar JCK. 1986. Text book of Microbiology. Orient Longman ltd. New Delhi. 2. Arora DR. 2004. Textbook of Microbiology, CBS, NewDelhi. 3. William CG. 1989. Understanding microbes. A laboratory text book for Microbiology. W.H. Freeman and Company. New York. 4. Dubey RC and Maheshwari DK. 2007. A textbook of Microbiology, S. Chand and Company, NewDelhi. 5. Dubey RC and Maheshwari DK. 2002. A Text book of Microbiology, S.C.Chand and Company, Ltd. Ramnagar, New Delhi. 6. Sharma R. 2006. Text book of Microbiology. Mittal Publications. New Delhi. 305pp. 7. Sharma PD. 1999. Microbiology and Plant Pathology. Rastogi publications. Meerut, India. 8. Vasanthkumari R. 2007. A textbook of Microbiology, BI Publications Pvt. Ltd., New Delhi. **References** 1. Alexepoulos CJ and Mims CW. 1989. Introductory Mycology, Wiley Eastern Ltd., NewDelhi. 2. Allas RM. 1988. Microbiology: Fundamentals and Applications, Macmillan publishing co. NewYork. 3. Brook TD, Smith DW and Madigan MT. 1984. Biology of Microorganisms, 4th ed. Eaglewood Cliffts. N.J.Prentice- Hall. NewDelhi. 4. Burnell JH and Trinci APJ. 1979. Fungal walls and hyphal growth, Cambridge UniversityPress.Cambridge. 5. Michel J, Pelczar Jr.EC and Krieg CR. 2005. Microbiology, Mc.Graw-Hill, New Delhi. 6. Powar CB and Daginawala. 1991. General Microbiology, Vol – I and Vol – II Himalaya publishinghouse,Bombay. 7. Reddy S and Ram. 2007. Microbial Physiology. Scientific Publishers, Jodhpur, 385pp. 8. Sullia SB and Shantharam S. 1998. General Microbiology. Oxford and IBH publishing Co.Pvt.Ltd. NewDelhi

Year	I	**Course Code:** 21BSC1BOT1P **Course Title:**Microbial diversity and Technology	**Credits**	02
Sem.	I		**Hours**	45

Course Pre-requisites, if any:	NA	
Formative Assessment Marks: 25	Summative Assessment Marks: 25	Duration of ESA: 03 hrs.

Practical 1: Safety measures in microbiology laboratory and study of equipment/appliances used for microbiological studies (Microscopes, Hot air oven, Autoclave/Pressure Cooker, Inoculation needles/loop, Petri plates, Incubator, Laminar flow hood, Colony counter, Haemocytomer, Micrometer etc.).

Practical 2: Enumeration of soil/food /seed microorganisms by serial dilution technique.

Practical 3: Preparation of culture media (NA/PDA) sterilization, inoculation, incubation of E coli / B. subtilis/ Fungi and study of cultural characteristics.

Practical 4: Determination of cell count by using Hemocytometer and determination of microbial cell dimension by using Micrometer.

Practical 6: Simple staining of bacteria (Crystal violet /Nigrosine blue) / Gram's staining of bacteria.

Practical 7: Isolation and study of morphology of Rhizobium from root nodules of legumes

Practical 8: Preparation of spawn and cultivation of paddy straw (Oyster) mushroom.

Practical 9: Study of vegetative structures and reproductive structures - Albugo,Phytophthora/Pythium, Rhizopus/Mucor, Saccharomyces, , Puccinia, Agaricus, Lycoperdon, Aspergillus/Penicillium.

Practical 10: Preparation of agar slants, inoculation, incubation, pure culturing and preservation of microbes by oil overlaying.

Practical 11: Downy mildew of Bajra/Maize/Sorghum, Citrus canker, Tobacco mosaic disease.

Practical 12: Study of well-known microbiologists and their contributions through charts and photographs.

Practical-13: Visit to water purification units/Composting/ microbiology labs/dairy and farms to understand role of microbes in day today life.

	(Note: Visit to Composting/ microbiology labs/dairy and farms to understand role of microbes in day today life and submission of study report is compulsory)

Note: Student has to execute a minimum of 10 programs in each part to complete the Lab course

Evaluation Scheme for Lab Examination

Assessment Criteria		Marks
Preparation	Gram staining	05
Enumeration		05
Identification		05
Comment		05
Viva Voice /Tour report		05
Total		**25**

OPEN-ELECTIVE SYLLABUS :

Year	I	**Course Code:** 21BSC1BOT1 **Course Title: PLANTS AND HUMANWELFARE**	**Credits**	03
Sem.	II		**Hours**	40

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	At the end of the course the student should be able to: 1. To make the students familiar with economic importance of diverse plants that offer resourcesto human life. 2. To make the students known about the plants used as-food, medicinal value and also plantsource of different economic value. 3. To generate interest amongst the students on plants importance in day today life, conservation,ecosystem and sustainability.

Unit No.	**Course Content**	**Hours**
Unit I	Origin of Cultivated Plants. Concept of Centres of Origin, their importance with reference to Vavilov's work. Examples of major plant introductions. Crop domestication and loss of genetic diversity (Only conventional plant breeding methods). Importance of plant bio- diversity and conservation. **Cereals**: Wheat and Rice (origin, evolution, morphology, post-harvest	10

	processing & uses).Green revolution. Brief account of millets and their nutritional importance.	
Unit II	**Legumes:** General account (including chief pulses grown in Karnataka- red gram, green gram, chick pea, soybean). Importance to man and ecosystem. **Cash crops:** Morphology, new varieties and processing of sugarcane, products and by- products of sugarcane industry. Natural Rubber – cultivation, tapping and processing.	10
Unit III	**Spices:** Listing of important spices, their family and parts used, economic importance with special reference to Karnataka. Study of fennel, clove, black pepper and cardamom. **Fruits:** Mango, grapes and Citrus (Origin, morphology, cultivation ,processing and uses)	10
Unit IV	**Oils and fats:** General description, classification, extraction, their uses and health implications; groundnut, coconut, sunflower and mustered (Botanical name, family & uses). Non edible oil yielding trees and importance as biofuel. Neem oil and applications. **Beverages:** Tea, Coffee (morphology, processing&uses)	10
Recommended Leaning Resources		
Print Resources	**Text Books:** 1. Kochhar, S.L. (2012). Economic Botany in Tropics. MacMillan & Co. New Delhi. 2. Wickens, G.E. (2001). Economic Botany: Principles & Practices. The Netherlands:Kluwer Academic Publishers. Netherland. 3. Chrispeels, M.J. and Sadava, D.E. (1994) Plants, Genes and Agriculture. Jones & Bartlett- Publishers. Lincoln, United Kingdom	

Semester: II

	I	**Course Code: 21BSC2BOT2L**	**Credits**
	2	**Course Title:Diversity of non flowering plants**	**Hours**

rse Pre-requisites, if any	**NA**	
native Assessment Marks: 40	**Summative Assessment Marks: 60**	**Duration of ESA: 03**

rse omes

After completing this course satisfactorily, a student will be able to:

1. Understand the diversity and affinities among Algae, Bryophytes, Pteridophytes and Gymnosperms.
2. Understand the morphology, anatomy, reproduction and life cycle across Algae, Bryophytes, Pteridophytes and Gymnosperms, and their ecological and evolutionary significance.
3. Obtain laboratory skills/explore non-flowering plants for their commercial applications.

No.	**Course Content**	**Hou**
I	**Chapter No. 1** Algae –Introduction and historical development in algology. General characteristics and classification of algae, Diversity- habitat, thallus organization, pigments, reserve food, flagella types, life-cycle and alternation of generation in Algae. Distribution of Algae. **5Hours** **Chapter No. 2** Morphology and reproduction and life-cycles of Nostoc, *Oedogonium*, *Spirogyra*, *Ectocarpus and Batrachospermum*. Diatoms and their importance. Blue-green algae-A general account. Algal blooms and toxins. **5Hours** **Chapter No. 3** Algal cultivation- Cultivation of microalgae-*Spirulina*;Algal cultivation methods in India. Algal products- Food and Nutraceuticals, Feed stocks, food colorants; fertilizers, aquaculture feed; therapeutics and cosmetics; medicines; dietary fibres from algae and uses. **3 Hours**	1
II	**Chapter No. 4.** Bryophytes – General characteristics and classification of Bryophytes, Diversity-habitat, thallus structure, Gametophytes and sporophytes. **5 Hours** **Chapter No. 5** Distribution, morphology, anatomy, reproduction and life-cycles of *Riccia*, *Anthoceros*, and *Funaria.* Ecological and economic importance of Bryophytes. Fossil Bryophytes. **3 Hours** **Chapter No. 6. . Pteridophytes**- General characteristics and classification; Structure of sporophytes and life-cycles. Distribution, morphology, anatomy, reproduction and life-cycles in Psilotum, *Selaginella*, *Equisetum*, *Pteris*. **5Hours**	1
III	**Chapter No. 7** A brief account of heterospory and seed habit. Stelar evolution in Pteridophytes. Affinities and evolutionary significance of Pteridophytes. Ecological and economic importance. **5Hours** **Chapter No. 8. Gymnosperms-** General characteristics. Distribution and classification of	1

	Gymnosperms. Study of the habitat, distribution, habit, anatomy, reproduction and life-cycles in Cycas, Pinus andGnetum. **5 Hours** **Chapter No. 9.** Affinities and evolutionary significance of Gymnosperms. Economic importance of Gymnosperms - food, timber, industrial uses and medicines. **3 Hours**	
it IV	**Chapter No. 10. Origin and evolution of Plants:** Origin and evolution of plants through Geological Time scale. **2 Hours** **Chapter No. 11. Paleobotany-** Paleobotanical records, plant fossils, Preservation of plant fossils - impressions, compressions, petrification's, moulds and casts, pith casts. Radiocarbon dating. **6 Hours** **Chapter No. 12.** Fossil taxa- *Rhynia, Lepidodendron,Lyginopteri* Exploration of fossil fuels. BirbalSahni Institute of Paleosciences. 5 Hours	1

Recommended Leaning Resources

urces	**Text Books:** **Text Books** 1) Chopra,G.L.AtextbookofAlgae.Rastogi&Co.,Meerut,Co.,NewDelhi,Depot. Allahabad. 2) Johri, LataanfTyagi, 2012, A Text Book of, Vedam e Books, NewDelhi. 3) Sharma, O.P. 1990. Text Book of Pteridophyta. McMillan India Ltd. NewDelhi. 4) Sharma, O.P. 1992. Text Book of Thallophytes. McGraw Hill Publishing Co. New Delhi. 5) Sharma, O.P., 2017, AlgaeSingh-Pande-Jain2004-05. A Text Book ofBotany. Rastogi Publication, Meerut. **References** 1. Sambamurty, A.V.S.S.. A Text Book of Algae. I.K. International Private Ltd., New Delhi. 2. Agashe, S.N. 1995. Paleobotany. Plants of the past, their evolution, paleoenvironment and Allie plants. Hutchinson & Co., Ltd., London. 3. Anderson R.A. 2005, Algal cultural Techniques, Elsievier, London. 4. Publication, Application in exploration of fossil fuels. Oxford & IBH., New Delhi. 5. Eams, A.J., (1974) Morphology of vascular plants - Lower groups. Tata Mc Grew- Hill Publishing Co Delhi, Freeman & Co., New York. 6. Fritze, R.E. 1977. Structure and reproduction of Algae. Cambridge University Press. 7. Goffinet B and Shaw A.J. 2009, Bryophyte Biology, 2nd ed. Cambridge Unversity Press,

Cambridge.Gymnosperms.
8. Srivastava, H N, 2003. Algae Pradeep Publication, Jalandhar, India.
9. Kakkar, R.K. and B.R.Kakkar(1995) The Gymnosperms (Fossils and Living) Central Publishing Hou Allahabad.
10. Kumar H. D., 1999, Introductory Phycology, Affiliated East-West Press, Delhi.
11. Lee, R.E., 2008, Phycology, Cambridge Unversity Press, Cambridge. 4th edition.McGraw Hill Publish Co., New Delhi.
12. Parihar, N.S. 1970. An Introduction to Embryophyta. Vol. I. Bryophyta. Central Book, Allhabad.
13. Parihar, N.S. (1976) An Introduction to Pteridophytes, Central Book Depot, Allhabad.
14. Parihar, N.S. 1977. The Morphology of Pteridophytes. Central Book Depot.,Allahabad.Press, Cambridge.
15. Rashid, A. 1998. An Introduction to Pteridophyta. II ed., Vikas Publishing House, New D
16. Smith, G.M. 1971. Cryptogamic Botany. Vol. II. Bryophytes &Pteridophytes. Tata Tata McGraw Hill Publishing, New Delhi.
17. Smith, G.M. 1971. CryptogamicBotny. Vol.I Algae & Fungi. Tata McGraw Hill Publishing. New Dell
18. Sporne, K.R. 1965. The Morphology of Gymnosperms. Hutchinson & Co., Ltd., London.
19. Stewart, W.M. 1983. Paleobotany and the Evolution of Plants, Cambridge UniversityCambridge.

	I	**Course Code: 21BSC2BOT2P** **Course Title:Diversity of Non flowering plants**	**Credits**	**02**
	2		**Hours**	**45**

rse Pre-requisites, if any:	**NA**	
native Assessment Marks: 25	**Summative Assessment Marks: 25**	**Duration of ESA: 03 hrs.**

Practical-1: Study of morphology, classification, reproduction and lifecycle of Nostoc, Oscillatoria.

Practical-2: Study of morphology, classification, reproduction and life-cycle of Oedogonium& Spirogyra, Ectocarpus and Batrachospermum.

Practical-3: Study of morphology, classification, reproduction and life-cycle of Riccia&Anthoceros/ Funaria.

Practical-4: Study of morphology, classification, anatomy, reproduction and life-cycle of Selaginella and Equisetum.

Practical -5: Study of morphology, classification, anatomy, reproduction and life-cycle of Pteris, Azolla/.Psilotum

	Practical -6: Study of morphology, classification, anatomy and reproduction in Cycas. Practical -7: Study of morphology, classification & anatomy, reproduction in Pinus. Practical -8: Study of morphology, classification & anatomy, reproduction in Gnetum. **Practical -9**: Study of important blue green algae causing water blooms in the lakes. **Practical -10**: Preparation of natural media and cultivation of Azolla in artificial ponds. **Practical -11:** Study different algal products and fossils impressions and slides. **Practical-12:** Visit to algal cultivation units/lakes with algal blooms/Fern house/ Nurseries/Geology museum/lab to study plant fossils. (Note: Botanical study tour to a floristic rich area for 1-2 days and submission of study report is compulsory)

Evaluation Scheme for Lab Examination

Assessment Criteria		Marks
Classification and description		10
T.S. of given material		05
Identification		05
Viva Voice /Tour report		05
Total		**25**

OPEN-ELECTIVE SYLLABUS:

Year	I	**Course Code:** 21BSC1BOT2	**Credits**	03
Sem.	II	**Course Title:** Bio-fuels	**Hours**	40
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	
Course Outcomes		At the end of the course the student should be able to: 1. To make the students familiar with Bio-fuel plant species cultivation for commercialexploitation. 2. To make the students known about the Bio-fuel used in automobile industries and solvingfuel problems in feature. 3. To generate interest amongst the students to know the importance of Bio-fuel in day todaylife and economic wellbeing. 1.		

Unit No.	Course Content	Hours
Unit I	Introduction, definition, scope and Importance of Bio-fuel with respect to climate change and environmental issues. Public awareness. Biofuels scenario in India and world. History of Biofuels. Advantages and disadvantages of biofuels. Developmental generation of biofuels: first, second, third and fourth generation of biofuels andpresent status.	10
Unit II	Biofuel feed stocks: Agricultural waste, farm waste, forestry waste, organic wastes from the residential, institutional and industrial waste and its importance.(Biomass- plant, animal and microbial based waste). Algal biofuel.	10
Unit III	Biodiesel species: *Pongamia pinnata, Simarouba gluca, Jatropha curcas, Azardirachta india, Madhuca indica* and *Callophyllum innophyllum* . Seed harvesting, processing, oil extraction, and characterization.	10
Unit IV	Introduction to biodiesel, bioethanol, biogas and bio hydrogen. Production technology of biofuels (Biodiesel, ehanol and biogas). Quality analysis of biodiesel, bioethanol and biogas and its comparison with national and international standards. Biofuel sustainability; Biofuel Policy in Karnataka and India. Biofuel production statistics. Fuel against food security concepts.	10
Recommended Leaning Resources		
Print Resources	**Text Books and References** 1) The Biodiesel Handbook (2005). Jurgen Krahl, Jon Harlan Van Gerpen.AOCS Press. 2) Bioenergy and Biofuels (2017).Ozcan Konur. CRC Press, Taylor & Franci's group. 3) https://mnre.gov.in/biofuels 1.	

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS
as per the Choice Based Credit System (CBCS) designed in accordance with
Learning Outcomes-Based Curriculum Framework (LOCF)
of National Education Policy (NEP) 2020
for

Bachelor of Science (Botany)

B.Sc III and IV sem

w.e.f.

Academic Year 2022-23 and onwards

PREAMBLE

The objective of a B.Sc. (Honors) programme in Higher Education system is to prepare its students for the society. The current pattern is designed to provide a focused learning outcome-based syllabus at the Honors level providing structured teaching-learning experiences catering to the needs of the students. The honors courses will prepare the students both academically and in terms of employability. The programme also inculcates various attributes at the Honors level. These attributes encompass values related to emotional stability, social justice, creative and critical thinking, well-being and various skills required for employability, thus preparing students for continuous learning and sustainability. The new curriculum based on learning outcomes of BSc (Honours) Botany offers knowledge of areas including Plant Systematics, Plant Biotechnology, Resource Botany, Genetics, Ecology, Conservation biology, Physiology and Bioinformatics, Medicinal plants, Plant diseases management etc. The courses define clearly the objectives and the learning outcomes, enabling students to choose the elective subjects broadening their skills in the field of Botany. The course also offers skills to pursue research and teaching in the field of Botany and thus would produce best minds to meet the demands of society This curriculum framework for the bachelor-level program in Botany is developed keeping in view of the student-centric learning pedagogy, which is entirely outcome-oriented and curiosity-driven. To avoid a rote-learning approach and foster imagination, the curriculum is more leaned towards self-discovery of concepts. The curriculum framework focuses on the pragmatist approach whereby practical application of theoretical concepts is taught with substantial coverage of practical and field works.

Aims of Bachelor's degree programme in Botany

The broad aims of the bachelor's degree programme in Botany are:

1. To provide an environment that ensures the cognitive development of students in a holistic manner. A dialogue about plants and their significance is fostered in this framework, rather than didactic monologues on mere theoreticalaspects
2. To provide the latest subject matter, both theoretical as well as practical, such a way to foster their core competency and discovery learning. A botany graduate as envisioned in this framework would be sufficiently competent in the field to undertake further discipline-specific studies, as well as to begin domain-relatedemployment.
3. To mould a responsible citizen who is aware of the most basic domain-independent knowledge, including critical thinking andcommunication.
4. To enable the graduate to prepare for national as well as international competitive examinations, especially UGC-CSIR NET, and UPSC Civil ServicesExamination.

Program Learning Outcomes

The students graduating with the Degree B.Sc. Three years and B. Sc. (Honors) Botany should be able toacquire.

Core competency: Students will acquire core competency in the subject Botany, and allied subject areas.

1. The student will be able to identify major groups of plants and compare the characteristics of lower (e.g. algae and fungi) and higher (angiosperms and gymnosperms)plants.
2. Students will be able to use the evidence-based comparative botany approach to explain the evolution of organisms and understand the genetic diversity on the earth. The students will be able to explain various plant processes and functions, metabolism, concepts of gene, genome, and how organism's function is influenced at the cell, tissue, and organ level.
3. Students will be able to understand the adaptation, development, and behavior of different forms oflife.
4. The understanding of networked life on earth and tracing the energy pyramids through nutrient flow is expected from thestudents.
5. Students will be able to demonstrate the experimental techniques and methods of their area of specialization inBotany.

Analytical ability:

The students will be able to demonstrate the knowledge in understanding research and addressing practicalproblems.

1. Application of various scientific methods to address different questions by formulating the hypothesis, data collection, and critically analyze the data to decipher the degree to which their scientific work supports theirhypothesis.

Critical Thinking and problem-solving ability:

An increased understanding of fundamental concepts and their applications of scientific principles is expected at the end of this course. Students will become critical thinkers and acquire problem-solving capabilities.

Digitally equipped:

Students will acquire digital skills and integrate the fundamental concepts with modern tools.

Ethical and Psychological strengthing: Students will also strengthen their ethical and moral values and shall be able to deal with psychological weaknesses.

Team Player: Students will learn team workmanship in order to serve efficiently institutions, industry, and society.

Independent Learner: Apart from the subject-specific skills, generic skills, especially in botany, the program outcome would lead to gain knowledge and skills for further higher studies, competitiveexaminations,andemployment.Learningoutcomes-basedcurriculumwouldensure equal academic standards across the country and a broader picture of their competencies. The Bachelor's program in Botany and Botany honors may be mono-disciplinary or multidisciplinary with following broad objectives.

1. Critically evaluation of ideas and arguments by collecting relevant information about the plants, to recognize the position of the plant in the broad classification and phylogenetic level.
2. Identify problems and independently propose solutions using creative approaches,

acquired through interdisciplinary experiences, and a depth and breadth of knowledge/expertise in the field of Plant Identification.

3. Accurately interpretation of collected information and use taxonomical information to evaluate and formulate a position of the plant in taxonomy.
4. Students will be able to apply the scientific method to questions in botany by formulating testable hypotheses, collecting data that address these hypotheses, and analyzing those data to assess the degree to which their scientific work supports theirhypotheses.
5. Students will be able to present scientific hypotheses and data both orally and in writing in the formats that are used by practicingscientists.
6. Students will be able to access the primary literature, identify relevant works for a particular topic, and evaluate the scientific content of theseworks.
7. Students will be able to apply fundamental mathematical tools (statistics, calculus) and physical principles (physics, chemistry) to the analysis of relevant biologicalsituations.
8. Students will be able to identify the major groups of organisms with an emphasis on plants and be able to classify them within a phylogenetic framework. Students will be able to compare and contrast the characteristics of plants, algae, and fungi that differentiate them from each other and other forms oflife.
9. Students will be able to use the evidence of comparative biology to explain how the theory of evolution offers the only scientific explanation for the unity and diversity of life on earth. They will be able to use specific examples to explicate how descent with modification has shaped plant morphology, physiology, and lifehistory.
10. Students will be able to explain the ecological interconnectedness of life on earth by tracing energy and nutrient flow through the environment. They will be able to relate the physical features of the environment to the structure of populations, communities, andecosystems
11. Students will be able to demonstrate proficiency in the experimental techniques and methods of analysis appropriate for their area of specialization withinbiology.

B. Sc. Botany Course outcomes under NEP program

The framework of curriculum for the Bachelor's program in Botany aims to transform the course content and pedagogy to provide a multidisciplinary, student-centric, and outcome-based, holistic education to the next generation ofstudents.

Aside from structuring the curriculum to be more in-depth, focused, and comprehensive with significant skill-set for all exit levels; keeping in mind the job prospects; the emphasis has been to maintain academic coherence and continuum throughout the program of study and help build a strong footing in the subject, thereby ensuring a seamless transition into theircareers.

Special attention is given to eliminate redundancy, discourage rote learning, and espouse a problem-solving, critical thinking, and inquisitive mindset among learners.

The curriculum embraces the philosophy that science is best learned through experiential learning, not limited to the confines of a classroom but rather through hands-on training, projects, field studies, industrial visits, andinternships.

This updated syllabus, with modern technology, helps students stay informed on the leading-edge developments in plant sciences and promotes curiosity, innovation, and a passion for research, that will serve them well in their journey into scientific adventure and discovery beyondgraduation.

The goal is to equip students with holistic knowledge, competencies, professional skills, and a strong positive mindset that they can leverage while navigating the current stiff challenges of the job market.

Program Outcomes:

By the end of the program the students will be able to:

(Refer to literature on outcome based education (OBE) for details on Program Outcomes)

PO1: Skill development for the proper description using botanical terms, identification, naming and classification of life forms especially plants and microbes.
PO2: Acquisition of knowledge on structure, life cycle and life processes that exist among plant and microbial diversity through certain model organism studies.
PO3: Understanding of various interactions that exist among plants and microbes; to develop the curiosity on the dynamicity of nature.
PO4: Understanding of the major elements of variation that exist in the living world through comparative morphological and anatomical study.
PO5: Ability to explain the diversity and evolution based on the empirical evidences in morphology, anatomy, embryology, physiology, biochemistry, molecular biology and life history.

PO6: Skill development for the collection, preservation and recording of information after observation and analysis- from simple illustration to molecular database development.

PO7: Making aware of the scientific and technological advancements- Information and Communication, Biotechnology and Molecular Biology for further learning and research in all branches of Botany..

PO8: Internalization of the concept of conservation and evolution through the channel of spirit of inquiry.

PO 9: To enable the graduates to prepare for national as well as international level competitive examinations like UGC-CSIR, UPSC, KPSC etc.

PO10: To enable the students for practicing the best teaching pedagogy as a biology teacher including the latest digital modules.

PO 11: The graduates should be knowledgeable and competent enough to appropriately deliver on aspects of global importance like climate change, SDGs, green technologies etc at the right opportunity.

PO 12: The graduate should be able to demonstrate sufficient proficiency in the hands-on experimental techniques for their area of specialization within biology during research and in the professional career.

RANI CHANNAMMA UNIVERSITY

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Proposed Curricular and Credits Structure under Choice Based Credit System [CBCS] of Botany Major& One Minor Discipline Scheme for the Four Years B.Sc. Undergraduate Honors Programme with effect from 2021-22

SEMESTER-I											
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L1	21BSC1L1LK1	Kannada	40	60	100	4	-	-	3	3
	21BSC1L1LFK1	Functional Kannada								
L2	21BSC1L2LEN2	English	40	60	100	4	-	-	3	3
	21BSC1L2LHI2	Hindi								
	21BSC1L2LSN2	Sanskrit								
	21BSC1L2LTE2	Telugu								
	21BSC1L2LUR2	Urdu								
DSC1	21BSC1BOT1L	Microbial Diversity and technology	40	60	100	4	-	-	4	3
	21BSC1BOT1P	Microbial Diversity and technology	15	35	50	-	-	4	2	3
DSC1	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	3
			15	35	50	-	-	4	2	3
SEC1	21BSC1SE1CS1	Digital Fluency	15	35	50	1	-	2	2	2
VBC1	21BSC1V1PE1	Physical Education - Yoga	15	35	50	-	-	2	1	2
VBC2	21BSC1V2HW1	Health & Wellness	15	35	50	-	-	2	1	2
OEC1	21BSC1BOT1		40	60	100	3	-	-	3	3
			Total Marks		**750**	**Semester Credits**			**25**	

SEMESTER-II

Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			IA	SEE	Total	L	T	P		
L3	21BSC2L3LK2	Kannada	40	60	100	4	-	-	3	3
	21BSC2L3FKL2	Functional Kannada								
L4	21BSC2L4EN2	English	40	60	100	4	-	-	3	3
	21BSC2L4HI2	Hindi								
	21BSC2L4SN2	Sanskrit								
	21BSC2L4TE2	Telugu								
	21BSC2L4UR2	Urdu								
DSC2	21BSC2BOT2L	Diversity of Non flowering plants	40	60	100	4	-	-	4	3
	21BSC2BOT2P	Diversity of Non flowering plants	15	35	50	-	-	4	2	3
DSC2	Another Department Code	Another Department Course Title	30	70	100	4	-	-	4	3
			15	35	50	-	-	4	2	3
AECC1	21BSC2AE1ES2	Environmental Studies	15	35	50	1	-	2	2	2
VBC3	21BSC2V3PE2	Physical Education-Sports	15	35	50	-	-	2	1	2
VBC4	21BSC2V4NC1	NCC/NSS/R&R(S&G) / Cultural	15	35	50	-	-	2	1	2
OEC2	21BSC2BOT2		40	60	100	3	-	-	3	3
			Total Marks		**750**	**Semester Credits**			**25**	

SECOND YEAR; SEMESTER-III										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L5	21BSC3L5LK3	Kannada	40	60	100	4	-	-	3	3
	21BSC3L5LFK3	Functional Kannada								
L6	21BSC3L6EN3	English	40	60	100	4	-	-	3	3
	21BSC3L6HI3	Hindi								
	21BSC3L6SN3	Sanskrit								
	21BSC3L6TE3	Telugu								
	21BSC3L6UR3	Urdu								
DSC3	21BSC2BOT3L	Plant Anatomy and Developmental Biology	40	60	100	4	-	-	4	3
	21BSC2BOT3P	Plant Anatomy and Developmental Biology	15	35	50	-	-	4	2	3
DSC3	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	3
			15	35	50	-	-	4	2	3
SEC2	21BSC3SE2ES2	Artificial Intelligence	15	35	50	1	-	2	2	2
VBC5	21BSC3V5PE3	Physical Education- Sports	15	35	50	-	-	2	1	2
VBC6	21BSC3V6NC2	NCC/NSS/R&R(S &G) / Cultural	15	35	50	-	-	2	1	2
OEC3	21BSC2BOT3		40	60	100	3	-	-	3	3
			Total Marks		**750**	**Semester Credits**			**25**	

SEMESTER-IV										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L7	21BSC4L7LK4	Kannada	40	60	100	4	-	-	3	3
	21BSC4L7LFK4	Functional Kannada								
L8	21BSC4L8EN4	English	40	60	100	4	-	-	3	3
	21BSC4L8HI4	Hindi								
	21BSC4L8SN4	Sanskrit								
	21BSC4L8TE4	Telugu								
	21BSC4L8UR4	Urdu								
DSC4	21BSC2BOT4L	Ecology and Conservation Biology	40	60	100	4	-	-	4	3
	21BSC2BOT4P	Ecology and Conservation Biology	15	35	50	-	-	4	2	3
DSC4	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	3
			15	35	50	-	-	4	2	3
AECC2	21BSC4AE1ES2	Constitution of India	15	35	50	1	-	2	2	2
VBC7	21BSC4V5PE4	Physical Education-Sports	15	35	50	-	-	2	1	2
VBC8	21BSC4V6NC3	NCC/NSS/R&R(S&G) / Cultural	15	35	50	-	-	2	1	2
OEC4	21BSC2BOT4		40	60	100	3	-	-	3	3
			Total Marks		**750**	**Semester Credits**			**25**	

B.Sc. BOTANY: Semester - 3

Theory: Discipline Specific Core Course (DSCC)

Title of the Course and Code:

BOT-A-3.1:PLANT ANATOMY AND DEVELOPMENT BIOLOGY

Course No.	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/ Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
BOT A-3.1	DSCC	Theory	04	04	52 hrs	4hrs	40	60	100

Course Outcomes:

On completion of this course, the students will be able to:

1.Observation of variations that exist in internal structure of various parts of a plant and as well as among different plant groups in support for the evolutionary concept.

2. Skill development for the proper description of internal structure using botanical terms, their identification and further classification.

3. Induction of the enthusiasm on internal structure of locally available plants.

4. Understanding various levels of organization in a plant body with an outlook in the relationship between the structure and function through comparative studies.

5. Observation and classification of the floral variations from the premises of college and house.

6. Understanding the various reproductive methods sub-stages in the life cycle of plants

7. Observation and classification of the embryological variations in angiosperms.

8. Enthusiasm to understand evolution based on the variations in reproduction among plants.

PLANT ANATOMY

Unit 1: ANGIOSPERM ANATOMY, PLANT CELL STRUCTURE AND TISSUES 14 Hrs

Introduction,objectiveand scope of Plant Anatomy, Plant cell structure – nature of plant cell wall. Tissue and tissue systems - meristematic tissue, permanent tissue and secretary cells. Classification of meristem: (apical, intercalary and lateral), primary and secondary meristem. Apical meristem: Theories, **concept and Evolution** on organization of meristem (apical cell theory, Tunica-Corpus theory, histogen theory and Korper-Kappe theory), quiescent centre, Root cap.

Unit II: MORPHOGENESIS AND DIFFERENTIATION 14 Hrs.

Morphogenesis in plants - Differentiation of root, stems and leaf. Types of vascular bundles and Vascular cambium, Origin, development, arrangement and diversity in size and shape of leaves. Structure of Dicot root: primary and secondary structures (Tridax/Sunflower), Structure of monocot root (Maize). Structure of Dicot stem: Primary and secondary structures (Tridax/Sunflower), Structure of Monocot stem (Maize), Nodal anatomy. Structure of Dicot leaf: primary structure (Tridax/Sunflower), primary structure of Monocot leaf (Maize),, Stomatal types. Anomalous secondary growth: Bignonia, Boerhaavia (dicot stem) Dracaena (monocot stem)

DEVELOPMENT BIOLOGY

Unit III: Morphogenesis and Differentiation 14 Hrs.

Differentiation and cell polarity in acellular (Dictyostelium), Unicellular (Acetabularia) and multicellular system (root hair and stomata formation) Shoot Apical meristem (SAM): Origin, structure and function,: Differentiation of root, stem, leaf Transition from vegetative apex into reproductive apex

Developmental patterns at flowering apex: ABC model specification of floral organs. Modification of gene action by growth hormones and cellular differences between floral organs. Senescence – a general account.

Unit IV: Reproductive Biology 14 Hrs.

Introduction, Scope and contributions of Indian embryologists:

P. Maheswari, B G L Swamy, M.S. Swaminathan and K.C. Mehta.

Microsporangium: Development and structure of mature anther, Anther wall layers, Tapetum - types, structure and functions and sprogenous tissue.

Microsporogenesis - Microspore mother cells, microspore tetrads, Pollinia.

Microgametogenesis – Formation of vegetative and generative cells, structure of male gametophyte. Pollen embryosac (Nemec phenomenon). **Megasporangium –** Structure of typical Angiosperm ovule.Types of ovule- Anatropous, Orthotropous, Amphitropous, Circinotropous.

Megagametogenesis – Types of development of Female gametophyte/embryosac-monosporic- Polygonum type, bisporic – Allium type, tetrasporic - Fritillaria type. Structure of mature embryosac.

Pollination and fertilization: Structural and functional aspects of pollen, stigma and style. Post pollination events; Current aspects of fertilization and Significance of double fertilization, Post fertilization changes.

Endosperm – Types and its biological importance. Free nuclear (Cocos nucifera) cellular (Cucumis), helobial types. Ruminate endosperm.

Embryogenesis – Structure and composition of zygote ,Dicot (Capsella bursa-pastoris)and Monocot (Najas) embryo development. A general account of seed development.

B.Sc. BOTANY: Semester - 3

Theory: Discipline Specific Core Course (DSCC)

Title of the Course and Code:

BOT-A-3.2: PLANT ANATOMY AND DEVELOPMENT BIOLOGY

Course No.	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/ Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
BOT A-3.2	DSCC	Practical	02	04	52 hrs	4hrs	25	25	50

Practical No.1

i) Study of meristem (Permanent slides/ Photographs).

ii) Study of Simple Tissues (Parenchyma, Collenchyma and Sclerenchyma)and Complex Tissues (xylem and phloem).

Practical No.2

Maceration technique to study elements of xylem and phloem, Study of primary structure of dicot root, stem and leaf (Sunflower) and monocot root, stem and leaf (Maize)

Practical No.3

Study of Normal secondary growth structure in dicot stem and root (Sunflower) and Anomalous secondary growth: Bignonia, Boerhaavia (dicot stem) Dracaena (monocot stem)

Practical No. 4

Study of trichomes (any three types) and stomata (any three types) with the help of locally available plant materials

Practical No. 5

Permanent slides of Microsporogenesis and male gametophyte Mounting of Pollen grains of Grass and Hibiscus and Pollinia of Calotropis

Practical No. 6

Pollen germination (hanging drop method) and Effect of Boron and Calcium on pollen germination

Practical No. 7

Permanent slides of types of ovules, Megasporogenesis &embryosac development and types of placentation: Axile, Marginal and Parietal types. Sectioning of ovary, for the studied types of placentation

Practical No. 8

Mounting of embryo: Tridax and Cyamopsis, Mounting of endosperm: Cucumis

Practical No. 9 and 10

Mini project work in groups of 3-5 students, from the following list

a) Study of pollen morphology of different flowers with respect to shape, colour, aperture etc.

b) Pollen germination of different pollen grains and calculates percentage of germination.

c) Calculating percentage of germination of one particular type of pollen grain collected from different localities/ under different conditions.

d) Study of placentation of different flowers.

e) Any other relevant study related to Anatomy / Embryology.

Text Books for Reference:

1. Bhojwani and Bhatnagar, Introduction to Embryology of Angiosperms –Oxford & IBH, Delhi
2. Bhojwani Sant Saran, 2014.Current Trends in the Embryology of Angiosperms, Woong-Young Soh, Springer Netherlands,
3. Coutler E. G. , 1969. Plant Anatomy – Part I Cells and Tissues – Edward Arnold, London.
4. Dickison, W.C. (2000). Integrative Plant Anatomy, Harcourt Academic Press, USA
5. Eames A. J. - Morphology of Angiosperms - Mc Graw Hill, New York.
6. Esau, K. 1990. Plant Anatomy, Wiley Eastern Pvt Ltd New Delhi
7. Evert, R.F. (2006) Esau's Plant Anatomy: Meristem, Cells, and Tissues of the Plant Body: Their Structure, Function and Development. John Wiley and Sons, Inc
8. Fahn, A.1992. Plant Anatomy, Pergamon Press, USA
9. Johri, B.M. l., 1984.Embryology of Angiosperms, Springer-Verlag, Netherlands.
10. Karp G., 1985. Cell Biology; Mc.Graw Hill Company
11. Maheshwari,P 1950. An introduction to the embryology of angiosperms. New York: McGraw-Hill
12. Mauseth, J.D. (1988). Plant Anatomy, the Benjammin/Cummings Publisher, USA.
13. Nair P .K .K - Pollen Morphology of Angiosperms - Scholar Publishing House, Lucknow
14. Pandey S.N. 1997, Plant Anatomy and Embryology .A. Chadha, Vikas Publication House Pvt Ltd;
15. Pandey, B. P., 1997. Plant Anatomy, S.Chand and Co. New Delhi 16. Raghavan, V., 2000. Developmental Biology of Flowering plants, Springer, Netherlands.
17. Saxena M. R. – Palynology – A treatise - Oxford & I. B .H., New Delhi.
18. Shivanna, K.R., 2003. Pollen Biology and Biotechnology. Oxford and IBH Publishing Co. Pvt.Ltd. Delhi.
19. Vashishta .P.C .,1984. Plant Anatomy – Pradeep Publications – Jalandhar
20. Vashishta, P.C. 1997. Plant Anatomy, Pradeep Publication

RANI CHANNAMMA UNIVERSITY BELGAVI

B.Sc III SEMESTER

SUBJECT: BOTANY (OPEN ELECTIVE COURSE) OEC CODE:-003 BOT 051

Cou rse No.	Typ e of Cou r se	Theory / Practica l	Credit s	Instructi o n hour per week	Total No. of Lectures / Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
003 BOT 051	OE C	Theory	03	03	42 Hrs	2 Hrs	40	60	100

OEC-3 (OEC for other students): 003 BOT 051

Title of the Paper: BOTANICAL GARDEN AND LANDSCAPING

Learning outcomes:

After the completion of this course the learner will be able to: Apply the basic principles and components of gardening

- **Conceptualize flower arrangement and bio-aesthetic planning**
- **Design various types of gardens according to the culture and art of bonsai**
- **Distinguish between formal, informal and free style gardens**
- **Establish and maintain special types of gardens for outdoor and indoor landscaping**

Keywords:

Gardening, Landscaping, Flower arrangement, Vertical gardens, Roof gardens,Computer aided designing

Unit-I	**Principles of gardening, garden components, adornments, lawn making, methods of designing rockery, water garden, etc. Special types of gardens, their walk-paths, bridges, constructed features. Green house, Special types of gardens, trees, their design, values in land scaping, propagation, planting shrubs and herbaceous perennials. Importance, design values, propagation, planting, climbers and creepers, palms, ferns, grasses and cacti succulents.**	**14 Hrs**

Unit II	**Flower arrangement: importance, production details and cultural operations, constraints, post-harvest practices. Bio-aesthetic planning, definition, need, round country planning, urban planning and planting avenues, schools, villages, beautifying railway stations, dam sites, hydroelectric stations, colonies, river banks, planting material for play grounds.**	**14 Hrs**
Unit III	**Vertical gardens, roof gardens. Culture of bonsai, art of making bonsai. Parks and public gardens. Land scape designs, Styles of garden, formal, informal and freestyle gardens, types of gardens, Urban land scaping, Land scaping for specific situations, institutions, industries, residents, hospitals, road sides, traffic islands, dam sites, IT parks, corporate. Establishment and maintenance, special types of gardens, Bioaesthetic planning, eco- tourism, indoor gardening, therapeutic gardening, non-plant components, water-scaping, xeri-scaping, hardscaping; Computer Aided Designing (CAD) for outdoor and indoor scaping Exposure to CAD (Computer Aided Designing) components of a nursery, sowing, pricking, use of greenhouse for nursery production, propagation through cuttings, layering, grafting and budding. Ethnobotany and Folk medicines. Definition; Ethnobotany in India: Methods to study ethnobotany; Applications of Ethnobotany: National interacts, Palaeo-ethno-botany. Folk medicines of ethnobotany, ethnomedicine, ethnoecology, ethnic communities of India.**	**14 Hrs**
	Suggested Readings: **1. Berry, F. and Kress, J. (1991). Heliconia: An Identification Guide. SmithsonianBooks** **2. Butts, E. and Stensson, K. (2012). Sheridan Nurseries: One hundred years ofPeople, Plans, and Plants. Dundurn Group Ltd.** **3. Russell, T.(2012). Nature Guide: Trees: The world in your hands (Nature Guides).**	

Details of Formative Assessment (IA) For DSCC theory/OEC: 40% weightage for Total Marks

Type of Asesment	Weightage	Duration	Comment
Written Test -1	**10%**	**1 Hrs**	**8th Week**
Written Test-2	**10%**	**1 Hrs**	**12th Week**
Seminar	**10%**	**10 minutes**	**--------**
Case Study/Assignment/Field Work/Project Work/Activity	**10%**	**--------**	**--------**
Total	**40% of the Maximum Marks allotted for the paper.**		

Faculty of Science

04- Year UG Honors Programme: 2022-23

General Pattern of Theory Question paper for OEC

(60 Marks for semester end Examination with 2 hrs duration)

1	Part-A	Question number 1-6 carries 2 marks each. Answer any 5 questions.	10 Marks
2	Part-B	Question number 7-11 carries 5 marks each. Answer any 4 questions.	20 Marks
3	Part-C	Question number 12- 15 carries 10 marks each. Answer any 3 question.	30 Marks
(Minimum 1 question from each unit and 10 marks question may have sub questions for 7+3 or 6+4 or 5+5 if necessary)			
Total -60 Marks			

Practical Question Paper Pattern

RANI CHANNAMMA UNIVERSITY ELGAVI

B.Sc Botany III Semester (NEP) Plant

Anatomy and Development Biology

Time: 04 Hrs Max Marks: 25

Q No I	**Make a double stained micro preparation of T.S of material 'A' Draw a labeled diagram (Show the preparation to the Examiners)**	**05 Marks**
Q No II	**Mount Endosperm/Embryo in specimen 'B' and draw the diagram (Show the preparation to the Examiners)**	**05 Marks**
Q No III	**Identify and mention the important features observed in the slides C,D,E,F and G.**	**10 Marks**
Q No IV	**Mini Project Submission**	**05 Marks**
	Total	**25**

Instruction to Examiners

Q No I- For double staining preparation give the stem of Bignonia,Boerhaavia &

Dracena stem any one.

Preparation -03 Diagram -02 (05)

Q No II-Mount Endosperm/ Embryo

Preparation -03 Diagram -02- (05)

Q No III- Two slides from Anatomy(C-Simple tissue & D-Complex tissue),

Two slides from Embryology (E & F) and 'G'- Trichome/ Stomata.

(10)

Submission (05)

Question Paper Pattern

RANI CHANNAMMA UNIVERSITY BELGAVI

B.Sc Botany III Semester (NEP)

Subject: Code: Maximum Marks: 60

Answer any Six Questions from Question no I
Answer any Three each Questions from Question no II, III, IV and V

QNO I	Answer any Six Questions (At least Two questions from each unit) 1 2 3 4 5 6 7 8	2X6=12
QNO II	Should cover Entire unit I 1 2 3 4	4X3=12
QNO III	Should cover Entire unit II 1 2 3 4	4X3=12
QNO IV	Should cover Entire unit IIII 1 2 3 4	4X3=12
QNO V	Should cover Entire unit IV 1 2 3 4	4X3=12

B.Sc. B0TANY SEMESTER IV

Title of the Course: Ecology and Conservation Biology

Number of Theory Credits	Total Lecture Hours/Semester	Number of Practical Credits	Total Practical hours/Semester
04	**56**	**02**	**56**
	Contents of Theory Course		
Unit 1	**Topics**		**Teaching Hours**
Unit I	Introduction to Ecology and Conservation Biology: Definitions, Principles of Ecology, Brief History, Major Indian Contributions, Scope and importance. Ecological levels of organisation. Ecological factors:Climatic factors:light, temperature, precipitation and humidity. Edaphic factors:Soil and its types, soil texture, soil profile, soil formation; physicochemical properties of soil - mineral particle, soil pH, soil aeration, organic matter, soil humus and soil microorganisms. Topographic Factors: Altitude Ecological groups of plants and their adaptations:Morphological and anatomical adaptations of hydrophytes, xerophytes, epiphytes and halophytes.		**15 Hrs**
Unit II	Ecosystem Ecology:Introduction,types of ecosystems with examples -terrestrial and aquatic, natural and artificial. Structure of ecosystem: Biotic and Abiotic components, detailed structure of a pond ecosystem. Ecosystem functions and processes: Food chain-grazing and detritus; Food web. Ecological pyramids -Pyramids of energy, biomass and number. Principles of Energy flow in ecosystem. Bio-geo chemical cycles: Gaseous cycles -carbon and nitrogen, Sedimentary cyclePhosphorus. Ecological succession: Definition, types- primary and secondary. General stages of succession. Hydrosere and xerosere. Community Ecology: Community and its characteristics – frequency, density, Abundance, cover and basal area, phenology, stratifications, life-forms. Concept of Ecotone and Ecotypes. Intra-specific and Inter-specific interactions with examples. Ecological methods and techniques: Methods of sampling plant communities – transects and quadrates. Remote sensing as a tool for vegetation analysis, land use – land cover mapping. Population Ecology: Population and its characteristics – Population density, natality, mortality, age distribution,		**15 Hrs**

	population growth curves and dispersal.	
Unit III	Phytogeography and Environmental issues: Theory of land bridge, theory of continental drift, polar oscillations and glaciations. Centre of origin of plant – Vavilov's concept, types. Phytogeographical regions – concept, phytogeographical regions of India. Vegetation types of Karnataka – Composition and distribution of evergreen, semievergreen, deciduous, scrub, mangroves, shoal forests and grasslands. An account of the vegetation of the Western Ghats. Pollution: Water pollution: Causes, effect, types; water quality indicators, water quality standards in India, control of water pollution (Waste water treatment). Water pollution disasters – National mission on clean Ganga ,Minimata, Pacific gyre garbage patch, Exxon valdez oil spill. Air pollution: Causes, effect, air quality standards, acid rain, control. Soil pollution: Causes, effect, solid waste management, control measures of soil pollution.	**11 Hrs**
Unit IV	*Biodiversity and its conservation: Biodiversity: Definition, types of biodiversity - habitat diversity, species diversity and genetic diversity, Global and Indian species diversity. SDG's in biodiversity conservation. Values of Biodiversity – Economic and aesthetic value, Medicinal and timber yielding plants. NTFP. Threats to biodiversity. Concept of Biodiversity Hotspots, Biodiversity hot spots of India. Concept of endemism and endemic species. ICUN plant categories with special reference to Karnataka/ Western Ghats. Biodiversity Conservation- Indian forest conservation act, Biodiversity bill (2002). Conservation methods – In-situ and ex-situmethods In-situmethods –Biosphere reserves, National parks, Sanctuaries, Sacred grooves. Ex-situmethods-Botanical gardens, Seed bank, Gene banks, Pollen banks, Culture collections, Cryopreservation.*	**15 Hrs**
	Total	**56 Hrs**

SUGGESTED REFERENCE BOOKS:

1. Sharma, P.D. 2018. Fundamentals of Ecology. Rastogi Publications.

2. Odum E.P. (1975): Ecology By Holt, Rinert& Winston.

3. Oosting, H.G. (1978): Plants and Ecosystem Wadworth Belmont.

4. Kochhar, P.L. (1975): Plant Ecology. (9th Edn.,) New Delhi, Bombay, Calcutta-226pp.,

5. Kumar, H.D. (1992): Modern Concepts of Ecology (7th Edn.,) Vikas Publishing Co., New Delhi.

6. Kumar H.D. (2000): Biodiversity & Sustainable Conservation. Oxford & IBH Publishing Co Ltd. New Delhi.

7. Newman, E.I. (2000): Applied Ecology, Blackwell Scientific Publisher, U.K.

8. Chapman, J.L&M.J. Reiss (1992): Ecology (Principles & Applications). Cambridge University Press, U.K.

9. Malcolm L. Hunter Jr., James P. Gibbs, Viorel D. Popescu, 2020. Fundamentals of Conservation Biology, 4th Edition. Wiley-Blackwel. 10. Saha T. K., 2017. Ecology and Environmental Biology. Books and Allied Publishers

List of Practical's in Ecology and Conservation Biology

Practical No.	Experiments
1	Determination of pH of different types of Soils, Estimation of salinity of soil/water samples.
2	Study of Ecological instruments – Wet and Dry thermometer, Altimeter, Hygrometer, Soil thermometer, Rain Gauge, Barometer, etc
3	Hydrophytes: Morphological adaptations in Pistia, Eichhornia, Hydrilla, Nymphaea. Anatomical adaptations in Hydrilla(stem) and Nymphaea (petiole).
4	Xerophytes: Morphological adaptations in Asparagus, Casuarina, Acacia, Aloe vera, Euphorbiatirucalli. Anatomical adaptations in phylloclade of Casuarina .
5	Epiphytes: Morphological adaptations in Acampe, Bulbophyllum, Drynaria.Anatomical adaptations in epiphytic root of Acampe/ Vanda. Halophytes: study of Viviparyin mangroves, Morphology and anatomy of Pneumatophores.
6	Study of a pond/forest ecosystem and recording the different biotic and abiotic components
7	Demonstration of different types of vegetation sampling methods – transects and quadrats. Determination of Density and frequency.
8	Application of remote sensing to vegetation analysis using satellite imageries
9	Field visits to study different types of local vegetations/ecosystems and the report to be written in practical record book.
10	Determination of water holding capacity of soil samples
11	Determination of Biological oxygen demand (BOD)
12	Determination of Chemical oxygen demand (COD)
13	Determination of soil texture of different soil samples.

RANI CHANNAMMA UNIVERSITY BELGAVI

B.Sc IV SEMESTER OPEN ELECTIVE COURSE (OEC-4)

PAPER: MEDICINAL PLANTS IN HEALTH CARE

SUBJECT: BOTANY (OEC CODE:-004 BOT 051

Cou rse No.	Typ e of Cou r se	Theory / Practica l	Credit s	Instructi o n hour per week	Total No. of Lectures / Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
004 BOT 051	OE C	Theory	03	03	42 Hrs	2 Hrs	40	60	100

OEC-4 (OEC for other students): 004 BOT 051

Title of the Paper: MEDICINAL PLANTS IN HEALTH CARE

Learning outcomes:

On completion of this course, the students will be able to: Recognize the basic medicinal plants

- **Apply techniques of conservation and propagation of medicinal plants.**
- **Setup process of harvesting, drying and storage of medicinal herbs**
- **Propose new strategies to enhance growth of medicinal herbs considering**
- **thepractical issues pertinent to India**

Keywords:

Medicinal plants, Traditional systems, endangered medicinal plants, Ethnobotany, Folk medicines, Ethnic communities

Unit-I	**History and Traditional System of Medicine** **History, Scope and Importance of Medicinal Plants; Traditional systems of medicine;Definition and Scope. Ayurveda: History, origin, panchamahabhutas, saptadhatu and tridosha concepts, Rasayana,plants used in ayurvedic treatments, Siddha: Origin of Siddha medicinal systems, Basis of Siddha system, plants used in Siddha medicine. Unani: History, concept: Umoor-e-tabiya, tumors treatments / therapy, polyherbal formulations.**	**14 Hrs**

Unit II	**Conservation, Augmentation and Ethnobotany and Folk Medicine Conservation of Endemic and endangered medicinal plants, Red list criteria; In situ conservation: Biosphere reserves, sacred groves, National Parks; Ex situ conservation: Botanic Gardens, Ethnomedicinal plant Gardens. Propagation of Medicinal Plants: Objectives of the nursery, its classification, important**	**14 Hrs**
Unit III	**Medicinal Plants** **Brief description of selected plants and derived drugs, namely Guggul (Commiphora) for hypercholesterolemia, Boswellia for inflammatory disorders, Arjuna (Terminalia arjuna) for cardioprotection, turmeric (Curcuma longa)f or wound healing, antioxidant and anticancer properties, Kutaki (Picrorhiza kurroa) for hepatoprotection, Opium Poppy for analgesic and antitussive, Salix for analgesic, Cincona and Artemisia for Malaria, Rauwolfia as tranquilizer, Belladona as anticholinergic, Digitalis as cardiotonic, Podophyllum as antitumor**	**14 Hrs**
	Suggested Readings: **1. Akerele, O., Heywood, V. and Synge, H. (1991). The Conservation of Medicinal Plants. Cambridge University Press.** **2. AYUSH (www.indianmedicine.nic.in). About the systems—An overview of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy. New Delhi: Department of Ayurveda, Yogaand Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), Ministry and Family Welfare, Government of India.** **3. CSIR- Central Institute of Medicinal and Aromatic Plants, Lucknow (2016). Aush Gyanya: Handbook of Medicinal and Aromatic Plant Cultivation.** **4. Dev, S. (1997). Ethno-therapeutics and modern drug development: The potential of Ayurveda. Current Science 73:909–928.** **5. Evans, W.C. (2009). Trease and Evans Pharmacognosy, 16thedn. Philadelphia, PA: Elsevier Saunders Ltd.** **6. Jain, S.K. and Jain, Vartika. (eds.) (2017). Methods and Approaches in Ethnobotany: Concepts, Practices and Prospects. Deep Publications, Delhi** **7. Kapoor, L.D. (2001). Handbook of Ayurvedic medicinal plants. Boca Raton, FL: CRC Press.** **8. Saroya, A.S. (2017). Ethnobotany. ICAR publication.** **9. Sharma, R.(2003). Medicinal Plants of India-An Encyclopaedia. Delhi: DayaPublishing House.** **10. Sharma, R. (2013) Agro Techniques of Medicinal Plants. Daya Publishing House,Delhi.** **11. Thakur, R.S., H.S. Puri, and Husain, A.(1989). Major medicinal plants of India.Central Institute of Medicinal and Aromatic Plants, Lucknow, India.**	

Details of Formative Assessment (IA) For DSCC theory/OEC: 40% weightage for Total Marks

Type of Asesment	Weightage	Duration	Comment
Written Test -1	10%	1 Hrs	8th Week
Written Test-2	10%	1 Hrs	12th Week
Seminar	10%	10 minutes	--------
Case Study/Assignment/Field Work/Project Work/Activity	10%	--------	--------
Total	40% of the Maximum Marks allotted for the paper.		

Faculty of Science

04- Year UG Honors Programme: 2022-23

General Pattern of Theory Question paper for OEC

(60 Marks for semester end Examination with 2 hrs duration)

1	Part-A	Question number 1-6 carries 2 marks each. Answer any 5 questions.	10 Marks
2	Part-B	Question number 7-11 carries 5 marks each. Answer any 4 questions.	20 Marks
3	Part-C	Question number 12- 15 carries 10 marks each. Answer any 3 question.	30 Marks
(Minimum 1 question from each unit and 10 marks question may have sub questions for 7+3 or 6+4 or 5+5 if necessary)			
Total -60 Marks			

Practical Question Paper Pattern

RANI CHANNAMMA UNIVERSITY BELGAVI

B.Sc Botany IV Semester
(NEP) Ecology and
Conservation Biology

Time: 04 Hrs Max Marks: 25

Q No I	**Give the External and Internal features of Ecological adaptations with neat labeled diagram of specimen 'A'**	**05 Marks**
Q No II	**Determination of PH different types of Soils/Water samples 'B'**	**05 Marks**
Q No III	**Identify and describe the features of Ecological interest in slides C and D**	**06 Marks**
Q No IV	**Describe the use and mechanism of Ecological Instrument ' E'**	**04 Marks**
Q No V	**Submission of Field Visit Report**	**05 Marks**
	Total	**25**

Instruction to Examiners

Q No I- Ecological Adaptations- Hydrophytes/Xerophytes/Epiphytes 'A' Preparation -03 Diagram -02 (05)

Q No II-Determination of PH Soil/ Water 'B' (05)

Q No III- Ecological slides – Hydrophytes/Xerophytes/Epiphytes (06)

(Not repeat the Q No I)

Q No IV- Any one Ecological Instrument 'E (04)

Submission of Field Visit Report (05)

Question Paper Pattern

RANI CHANNAMMA UNIVERSITY BELGAVI

B.Sc Botany IV Semester (NEP)

Subject: Code: Maximum Marks: 60

Answer any Six Questions from Question no I

Answer any Three each Questions from Question no II, III, IV and V

QNO I	Answer any Six Questions (At least Two questions from each unit) 1 2 3 4 5 6 7 8	2X6=12
QNO II	Should cover Entire unit I 1 2 3 4	4X3=12
QNO III	Should cover Entire unit II 1 2 3 4	4X3=12
QNO IV	Should cover Entire unit IIII 1 2 3 4	4X3=12
QNO V	Should cover Entire unit IV 1 2 3 4	4X3=12

RANI CHANNAMMA UNIVERSITY,BELAGAVI.

PROGRAM / COURSE STRUCTURE AND SYLLABUS

Learning Outcomes-Based on Curriculum Frame work (LOCF) of National Education Policy (NEP) 2020

Bachelor of Science

Botany

B.Sc. V & VI semester

w.e.f.

Academic Year 2023-24 onwards

BOTANY

V Semester

	Course Code	Course Title	Credits Assigned	Instructional hours per week		Duration of exam	IA	Exam	Total
DSC	21BSC5BOT 5L1	Plant morphology and taxonomy (Theory)	4	4		2	40	60	100
	21BSC5BOT 5P1	Plant morphology and taxonomy (Practical)	2		4	3	25	25	50
	21BSC5BOT 5L2	Genetics and Plant Breeding (Theory)	4	4		2	40	60	100
	21BSC5BOT 5P2	Genetics and Plant Breeding (Theory)	2		4	3	25	25	50

VI Semester

	Course Code	Course Title	Credits Assigned	Instructional hours per week		Duration of exam	IA	Exam	Total
DSC	21BSC6BOT 6L1	Cell Biology (Theory)	4	4		2	40	60	100
	21BSC6BOT 6P1	Cell Biology (Practical)	2		4	3	25	25	50
	21BSC6BOT 6L2	Plant Physiology and Biochemistry (Theory)	4	4		2	40	60	100
	21BSC6BOT 6P2	Plant Physiology and Biochemistry (Practical)	2		4	3	25	25	50

Course Code	Course Title	Credits Assigned	Submission	Viva-voce	Total
	Project	2	25	25	50

V Semester

Plant Morphology and Taxonomy (Theory)

Program Name	**B.Sc. in BOTANY**	Semester	**V**
Course Title	**Plant Morphology and Taxonomy (Theory)**		
Course Code:	**DSC** – 21BSC5BOT 5L1	No. of Credits	**04**
Contact hours	**56 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Pre-requisite(s):

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1.Understanding the main features in Angiosperm evolution
CO2.Ability to identify, classify and describe a plant in scientific terms, thereby, Identification of plants using dichotomous keys. Skill development in identification and classification of flowering plants.
CO3.Interpret the rules of ICN in botanical nomenclature.
CO4.Classify Plant Systematic and recognize the importance of herbarium and Virtual Herbarium, Evaluate the Important herbaria and botanical gardens.

CO5. Recognition of locally available angiosperm families and plants and economically important plants. Appreciation of human activities in conservation of useful plants from the past to the present.

Contents	**56 hrs**
Unit I	**14hrs**
Morphology of Root, Stem and Leaf. Their modifications for various functions. Inflorescence – types. Structure and variations of flower. Fruits–types. Floral diagram and floral formula. **Introduction to Taxonomy**: History, objectives, scope and relevance of Taxonomy **Systems of classification**: Artificial, Natural and Phylogenetic; brief account of Bentham & Hooker's, Engler and Prantl's system and Merits anddemerits of classification. **Taxonomic literatures:** Floras, Monograph. Revisions, Journals. **Herbaria and Botanical gardens:** Important herbaria and Botanical gardens of the world and India, technique of Herbarium Preparation. **Virtual herbarium:** E-flora, Documentation.	
Unit II	**14hrs**
Plant identification: Taxonomic dichotomous keys; intended (yolked) and bracketed keys. (Brief account only). **Plant descriptions**: Common terminologies used for description of vegetative and reproductive parts of the following families.	
Study of the diagnostic features of Angiosperm families : Annonaceae, Brassicaceae, Malvaceae, Fabaceae (with sub Families), Apiaceae, Cucurbitaceae, Rubiaceae, Asteraceae, Apocynaceae, Solanaceae, Lamiaceae,Euphorbiaceae, Orchidaceae ,Liliaceaeand Poaceae. **Plant Taxonomic Evidences:** from palynology embryology, cytology, phyto-chemistry and molecular data. Field inventory.	

Unit III	14hrs
Taxonomic Hierarchy: Concept of taxa (family, genus, species); Categories and taxonomic hierarchy; Species concepts (biological, morphological, evolutionary). Modes of speciation. **Botanical Nomenclature:** Principles and rules (ICN); Brief account of Ranks of taxa, Type concept (Typification), Rule of priority, Author citation., valid publication, rejection of names, principle of priority and its limitations; Names of hybrids/cultivated species.	
Unit IV	**14hrs**
Biometrics, Numerical Taxonomy; Phenetics and Cladistics: Characters; Variations; OTUs, character weighting and coding; Cluster analysis; Phenograms, cladograms (definitions and differences). **Phylogenetic Systematics:** Terms and concepts (primitive and advanced, homology and analogy, parallelism and convergence, monophyly, Paraphyly, polyphyly, clades, synapomorphy, symplesiomorphy, apomorphy, lineage sorting, serial homology etc). **Origin and evolution of angiosperms;** Co-evolution of angiosperms and animals; Methods of illustrating evolutionary relationship (phylogenetic tree, cladogram). **Molecular taxonomy:** DNA sequences of chloroplast genes (*atp*B, rbcl.,) and one nuclear gene (nuclear ribosomal 18s DNA).	

V Semester

Plant Morphology and Taxonomy (Practical)

Program Name	**B.Sc. in BOTANY**	Semester	**V**
Course Title	**Plant Morphology and Taxonomy (Practical)**	Practical Credits	**02**
Course Code	**DSC** – 21BSC5BOT 5P1	Contact Hours	**4 Hours per week**
Formative Assessment	**25 Marks**	Summative Assessment	**25 Marks**

Practical Content

1. Study of root, stem and leaf structure and modifications. Study of inflorescence types. Study of flower and its parts, Study of fruits. Floral diagram and floral formula. **04 hrs**

2. Study of families mentioned in theory with at least two examples for each family and make suitable diagrams, describe them in technical terms (Description, V.S. flower, section of ovary, floral diagrams, floral formulae and systematic position according to Bentham & Hooker's system of classification) and identify up to species using the flora. **26 hrs**

3. Construction of plant phylogenetic trees using various loci (*atp*B & rbcL,) with various phylogenetic methods (Neibour Joining, Maximum Likelihood etc). (Demonstration). **06 hrs.**

4. Identify plants / plant products of economic importance belonging to the families mentioned in the syllabus; with binomial, family and morphology of useful parts. Cotton, Mango, Red gram, Green gram, Horse gram, Black gram, Bengal gram, Indigo, Brinjal, Tomato, Chilly, Tamarind, Bitter gourd, *Luffa*, Asfoetida, Cumin, Coriander, Coffee, Rubber, Tapioca, Ricinus, Ginger, Turmeric, Coir, Arecanut, Rice, Wheat, Ragi, Sugarcane *Annonamuricata*, *Catharanthus roses*, *Rauvolfia serpentaina*, *Justicia Adhatoda*, *Vitex nigundo* and *Leucas aspera*. **16 hrs.**

5. **Field visit**: Local or outside area / Botanical garden/ tribal settlements minimum 3 to 5 days.

6. Submission: Record book, Tour report and Herbarium Preparation of 10 properly identified herbarium specimens; (mounting of a properly dried and pressed specimen of any common plants from your locality with herbarium label).

Pedagogy: Teaching and learning, conducting experiments, field visits.

SCHEME OF PRACTICAL EXAMINATION

(Distribution of marks): 25 marks for the Semester end examination

Time: 3 hours. **Max marks: 25**

1. Identify, classify and describe the specimen A & B taxonomically	6 Marks
2. Identify the given specimen C with the help of Key using Flora	4 Marks
3. Draw the floral diagram and write floral formula of the given specimen D	2 Marks
4. Identification of Specimen/slides E, F and G	6 Marks
5. Tour report	2 Marks
6. Submission (Herbarium- any 10 local plants)	5 Marks

Total 25 marks General instructions:

Q1. Give specimen from Dicotyledons (A) and Monocotyledons (B)
Q2. Give specimen from family they studied (C)
Q3. Give specimen from family they studied (D)
Q4. Specimen /Slides/ materials from Root/Stem/ Leaf/ Inflorescence (E), Flower/Fruit (F) and Economic importance (G)
Q5. Tour report
Q6. Submission (Herbarium- any 10 local plants)

References	
1	Baker. H.G. 1970. Plant and Civilization, Wadsworth Publishing Company.
2	Colton C.M. 1997. Ethnobotany – Principles and applications. John Wiley and sons –Chichester
3	Cotton, C.M. 1996. Ethnobotany – Principles and Applications. Wiley and Sons
4	Datta S C, 1988. *Systematic Botany*, 4th Ed, Wiley Estern Ltd., New Delhi,
5	Eames A. J. - *Morphology of Angiosperms* - McGraw Hill, New York.
6	Hall, B.G. 2011. *Phylogenetic Trees Made Easy: A How-To Manual*. Sinauer Associates, Inc. USA
7	Heywood - *Plant taxonomy* - Edward Arnold London.
8	Jeffrey C .J. and A. Churchil - *An introduction to taxonomy* – London.
9	Jeffrey, C. (1982). An Introduction to *Plant Taxonomy.* Cambridge University Press, Cambridge
10	Judd, W.S., Campbell, C.S., Kellogg, E.A., Stevens, P.F., Donogue, M.J., 2002. *Plant Systematics: A Phylogenetic approach,* 2nd edition. Sinauer Associates, Inc., USA.
11	Lawrence - *Taxonomy of Vascular Plants* - Oxford & I B H, New Delhi.
12	Manilal, K.S. and M.S. Muktesh Kumar 1998. *A Handbook on Taxonomy Training*. DST, New Delhi.
13	Manilal, K.S. and A.K. Pandey, 1996. *Taxonomy and Plant Conservation*. C.B.S. Publishers & Distributors, New Delhi.
14	Manilal, K.S. 2003. *Van Rheede's Hortus Malabaricus. English Edition*, with Annotations and Modern Botanical Nomenclature. (12 Vols.) University of Kerala, Trivandrum.
15	Naik V.N., *Taxonomy of Angiosperms*, 1991. Tata Mcgraw-Hill Pub. Co. Ltd., New Delhi.
16	Pandey, S. N, and S.P. Misra (2008)-*Taxonomy of Angiosperms*- Ane Books India, New Delhi.
17	Radford A B, W C Dickison, J M Massey & C R Bell, 1974.*Vascular Plant Systematics*, Harper & Row Publishers, New York.
18	Singh G.2012. *Plant systematics: Theory and Practice*. Oxford and IBH, Pvt. Ltd., New Delhi.
19	Singh V. & Jain - *Taxonomy of Angiosperms* - Rastogi Publications, Meerut.
20	Sivarajan V. V - *Introduction to Principles of taxonomy* - Oxford &I B H New Delhi.
21	Any local / state / regional flora published by BSI or any other agency.

V Semester

Genetics and Plant Breeding (Theory)

Program Name	**B.Sc. in BOTANY**	Semester	**V**
Course Title	**Genetics and Plant Breeding (Theory)**		
Course Code:	**DSC** – 21BSC5BOT 5L2	No. of Credits	**04**
Contact hours	**56 Hours**	Duration of Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

ourse Pre-requisite (s):

Course Outcomes (COs): After the successful completion of the course, the student will be able to:.
CO1.Understand the basics of genetics and plant breeding
CO2.Ability to identify, calculate and describe crossing over, allelic generations and frequencies of recombination.
CO3.Interpret the results of mating and pollinations.
CO4.Classify plant pollination methods
CO5. Recognition of modes of inheritance of traits/ phenotypes and phenotype-genotype correlation.

Contents	**56 Hrs.**
Unit I	**14 hrs.**
Mendelian genetics and its extension Mendelism: History; Principles of inheritance; Chromosome theory of inheritance; Autosomes and sex chromosomes; Probability and pedigree analysis; Incomplete dominance and Co-dominance; Multiple alleles, Lethal alleles, Epistasis, Pleiotropy, Recessive and Dominanttraits, Penetrance and Expressivity, Numericals and polygenic inheritance. Extra chromosomal Inheritance Chloroplast mutation: Variegation in Four o'clock plant; Mitochondrial mutations in yeast.	
Unit II	**14hrs**
Linkage, crossing over and chromosome mapping: Linkage and crossing over-Cytological basis of crossing over; Recombination frequency, two factor and three factor crosses; Interference and coincidence; Numerical based on gene mapping; Sex Linkage. Variation in chromosome number and structure: **Gene mutations:** Types of mutations; Molecular basis of Mutations; Mutagens – physical and chemical (Base analogs, deaminating, alkylating and intercalating agents); Detection of mutations: CLB method, Role of Transposons in mutation, DNA repair mechanisms. Fine structure of gene (Population and Evolutionary Genetics**,** Allele frequencies, Genotype frequencies, Hardy-Weinberg Law, role of natural selection, mutation, Genetic drift, Genetic variation and Speciation.	

Unit III	14hrs
Plant Breeding: Introduction and objectives. Breeding systems: modes of reproduction in crop plants. Important achievements and undesirable consequences of plant breeding. Methods of crop improvement. Introduction: Centers of origin and domestication of crop plants, plant genetic resources, Acclimatization. **Selection methods: S**elf-pollinating and cross-pollinating plants and types of vegetative propagation in plants.	
Unit IV	**14hrs**
Hybridization: self, cross and vegetative propagation in plants – Procedure, advantages and limitations. **Quantitative inheritance:** Concept, mechanism, examples of inheritance of Kernel colour in wheat, Monogenic vs Polygenic inheritance.	

Inbreeding depression and heterosis: History, genetic basis of inbreeding depression and heterosis; Applications.
Role of mutations in crop improvement; Polyploidy; Distant hybridization and role of biotechnology in crop improvement.

V Semester

Genetics and Plant Breeding (Practical)

Program Name	**B.Sc. in BOTANY**	Semester	**V**
Course Title	**Genetics and Plant Breeding (Practical)**	Practical Credits	**02**
Course Code	**DSC** – 21BSC5BOT 5P2	Contact Hours	**4 Hours per week**
Formative Assessment	**25 Marks**	Summative Assessment	**25 Marks**

Practical Content

Practical: Plant breeding:

1. Reproductive biology, self and cross pollinated plants; vegetative propagation
2. Hybridization: Emasculation, bagging, pollination and production of hybrids and pollen fertility
3. Origin, distribution and centres of diversity of crop plants: Wheat, Sorghum, Rice, Chilly Sugarcane, Cotton, Potato, coffee, Sunflower and groundnut
4. Visit to nursery / horticulture.

Practical: Genetics

1. Mendel's laws through seed ratios. Laboratory exercises in probability and chi-square.
2. Chromosome mapping using point test cross data.
3. Pedigree analysis for dominant and recessive autosomal and sex-linked traits.
4. Incomplete dominance and gene interaction through seed ratios (9:7, 9:6:1, 13:3, 15:1, 12:3:1, 9:3:4).
5. Study of aneuploidy: Down's, Klinefelter's and Turner's syndromes.
6. Photographs/Permanent Slides showing Translocation Ring, Laggards and Inversion Bridge.

Pedagogy: Teaching and learning, conducting experiments, field / Lab.visits

SCHEME OF PRACTICAL EXAMINATION

(Distribution of marks): 25 marks for the Semester end examination

Time: 3 Hrs **Max. Marks: 25**

1. Perform the emasculation / pollen viability / fertility of the given sample **A**	5 Marks
2. Solve the given genetic problem **B**	4 Marks
3. Identification of Specimen/slides/ Photographs **C, D** and **E**	6 Marks
4. Viva Voce	5 Marks
5. Submission (Report of visit to nursery/horticulture)	5 Marks

General instructions:
Q1 Material **Cassia**// **Hibiscus**/ etc (A)
Q2. Genetic problems (B)

Q3. Down's, Klinefelter's and Turner's syndromes, Translocation Ring, Laggards and Inversion Bridge (C, D and E)
Q4. Viva voce
Q5. Submission (Report of visit to nursery/horticulture)

References	
1	Acquaah, G.(2007). Principles of Plant Genetics &Breeding.NewJearsey, U.S.: Blackwell Publishing.
2	Singh, B.D. (2005). Plant Breeding: Principles and Methods, 7th edition. New Delhi, Delhi: Kalyani Publishers.
3	Chaudhari, H.K. (1984). Elementary Principles of Plant Breeding, 2nd edition. New Delhi, Delhi: Oxford – IBH.
4	Gardner, E.J., Simmons, M.J., Snustad, D.P. (1991). Principles of Genetics, 8th edition. New Delhi, Delhi: John Wiley & sons
5	Griffiths, A.J.F., Wessler, S.R., Carroll, S.B., Doebley, J. (2010). Introduction to Genetic Analysis, 10th
	edition. New York, NY: W.H. Freeman and Co.
6	Klug, W.S., Cummings, M.R., Spencer, C.A. (2012). Concepts of Genetics, 10th edition. San Francisco, California: Benjamin Cummings
7	Raven, F.H., Evert, R. F., Eichhorn, S.E. (1992).Biology of Plants. New York, NY: W.H. Freeman and Co.
8	Welsh, J. R. (1981). Fundamentals of Plant Genetics and Breeding. John Wiley and Sons, New York.
9	Poehlman, J.M. (1987). Breeding Field Crops, 3rd Ed. AVI Publishing Co. Inc., Westport, Connecticut
10	Chopra, V.L. (2000). Plant Breeding: Theory and Practice 2nd Ed. Oxford & IBH, New Delhi.

VI Semester

CELL BIOLOGY (THEORY)

Program Name	**B.Sc. in BOTANY**	Semester	**VI**
Course Title	**Cell Biology (Theory)**		
Course Code:	**DSC-**21BSC6BOT 6L1	No. of Credits	**04**
Contact hours	**56 Hours**	Duration of Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Pre-requisite (s):

Course Outcomes (COs): After the successful completion of the course, the student will be able to:. CO1. Understanding of Cell metabolism, chemical composition, physiochemical and functional organization of organelle

CO2. Contemporary approaches in modern cell and molecular biology.
CO3.To study the organization of cell, cell organelles and biomolecules (i.e protein, carbohydrate, lipid and nucleic acid)
CO4.To gain knowledge on the activities in which the diverse macro molecules and microscopic structures inhabiting the cellular world of life are engaged.
CO5.To understand the various metabolic processes such as respiration, photosynthesis etc. which are important for life.

Contents	**56 Hrs**
Unit I	**14hrs**
Structure of Plant Cell – Prokaryotic and Eukaryotic cell, plasma membrane (fluid mosaic Model), Mitochondria, Chloroplast, Nucleus and ribosomes. Chromosomes: History, types and functions of chromosomes. Giant chromosomes, Polytene chromosome and Lampbrush chromosome.	
Unit II	**14hrs**
Cell wall, distribution, chemical composition, functions and variations in prokaryotic and eukaryotic cells (primary and secondary wall), Glycocalyx, Cell-cell interactions / Junctions, pit connections. Phases of eukaryotic cell cycle, mitosis and meiosis; Regulation of cell cycle-checkpoints, role of protein kinases. Programmed Cell Death; Biology and elementary knowledge of development and causes of cancer.	
Unit III	**14hrs**
Active and passive transport, proton pumps associated (Na-K, Cacalmodulin etc. and their distribution), phagocytosis, pinocytosis, exocytosis. Marker enzymes in cell organelles, Biogenesis of mitochondria and chloroplasts, brief account of transport in mitochondria and chloroplasts (Tim/Tom; Tic/Toc) and semiautonomous nature of mitochondria and chloroplast	
Unit IV Nuclear envelope, structure of nuclear pore complex, nuclear lamina, transport across nuclearmembrane, Nucleolus, rRNA processing. **Endoplasmic Reticulum**: Structure, targeting and insertion of proteins in the ER, protein folding, processing; Smooth ER and lipid synthesis, export of proteins and lipids. **Golgi Apparatus**: organization, protein glycosylation, protein sorting and export from Golgi Apparatus; Lysosomes.	**14hrs**

VI Semester
CELL BIOLOGY (Practical)

Course Title	**Cell Biology (Practical)**	Practical Credits	**02**
Course Code	**DSC**-21BSC6BOT 6P1	Contact Hours	**4 Hours per week**
Formative Assessment	**25Marks**	Summative Assessment	**25 Marks**

Practical Content

1. Study of plant cell structure with the help of epidermal peel mount of Onion/ *Rhoeo*/ Crinum.
2. Study of cell and its organelles with the help of electron micrographs.
3. Measurement of length and breadth of plant cell using micrometry.
4. Study different stages of mitosis and meiosis (Onion/ *Rhoeo*/ Crinum)
5. Study of Karyotype using camera-lucida / chart.
6. Isolation of cell organelle – Chloroplast.

SCHEME OF PRACTICAL EXAMINATION

(Distribution of marks): 25 marks for the Semester end examination

CELL BIOLOGY

Time: 03 hrs **Max. Marks: 25**

1. Preparation of squash/ smear of material A, identify, Sketch and label the any two stages with reasons 06 marks
2. Find out cell length and breadth of the given material using micrometry 05marks
3. Identify the slides C & D 04 marks
4. Viva-voce 05 marks
5. Submission (submission of 5 slides of mitosis and meiosis) 05 marks

General instructions:

Q1. Give specimen from Onion/ *Rhoeo*/ *Crinum* plant (A)
Q2. Give specimen from Onion/ *Rhoeo* leaf (B)
Q3. Give slide from mitosis (C) meiosis (D)
Q4. Viva-voce
Q5. Submission (submission of 5 slides of mitosis and meiosis)

References	
1	Cooper, G.M., Hausman, R.E. (2009). The Cell: A Molecular Approach, 5th edition. Washington, D.C.: ASM Press & Sunderland, Sinauer Associates, MA
2	Karp, G. (2010). Cell Biology, 6th edition. New Jersey, U.S.A.: John Wiley & Sons.
3	De Robertis, E. D. P. and De Robertis R. E. 2009. Cell and Molecular Biology, 8th edition. Lippincott Williams and Wilkins, Philadelphia.
4	Becker W. M., Kleinsmith L.J. and Bertni G. P. 2009. The World of the Cell. 7th edition. Pearson Benjamin Cummings Publishing, San fransisco.
5	Reven, F.H., Evert, R.F., Eichhorn, S.E. (1992). Biology of Plants. New York, NY: W.H.Freeman and Company
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8	Verma, P. S. (2004). Cell Biology,Genetics, Molecular Biology: Evoloution and Ecology. India: S. Chand Limited.

VI Semester
PLANT PHYSIOLOGY AND PLANT BIOCHEMISTRY (THEORY)

Program Name	**BSc BOTANY**	Semester	**VI**
Course Title	**Plant Physiology and Plant Biochemistry (Theory)**		
Course Code:	21BSC6BOT 6L2	No. of Credits	**04**
Contact hours	**56 Hours**	Duration of Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Pre-requisite (s):

Course Outcomes (COs): After the successful completion of the course, the student will be able to:
CO1.Importance of water and the mechanism of transport.
CO2.To understand biosynthesis and breakdown of biomolecules.
CO3.Role of plant hormones in plant development and about secondary metabolites.
CO4.Preliminary understanding of the basic functions and metabolism in a plant body.
CO5.To understand the importance of nutrients in plant metabolism and crop yield.

Contents	**56 hrs**
UNIT I	**14 hrs**
Plant water relations: Importance of Water as a solvent, Diffusion, osmosis, imbibition, osmotic pressure, osmotic potential, turgor pressure, wall pressure, water potential and its components. Mechanism of water absorption, Factors affecting water absorption. **Transpiration.** Types and process, Mechanism of guard cell movement, K^+ ion mechanism, Antitranspirants. **Mechanism of ascent of sap:** Vital and physical force theories. **Phloem Transport:** Transport of organic solutes. Path of transport, vein loading and unloading. Transcellular hypothesis, mass flow hypothesis. **Mineral nutrition:** Micro and macro nutrients - their importance and deficiency symptoms.	
UNIT II	**14 hrs**
Photosynthesis: Photosynthetic Pigments (Chl a, b, xanthophylls, carotene); Photosystem I and II, reaction center, antenna molecules; Electron transport and mechanism of ATP synthesis;C3, C4 and CAM pathways of carbon fixation; Photorespiration. **Respiration**: Glycolysis, anaerobic respiration, TCA cycle; Oxidative phosphorylation, Oxidative Pentose Phosphate Pathway. **Nitrogen metabolism:** Biological nitrogen fixation: Nitrate and ammonia assimilation.	

UNIT III	**14 hrs**
Plant growth regulators: Definition and classification, Site of synthesis, biosynthesis pathway and metabolism and influence on plant growth development - Auxins, Gibberellins, cytokinins, ABA and ethylene . **Synthetic growth regulators**: Classification, their effect on plant growth and development. Practical utility in agriculture and horticulture. **Sensory Photobiology**: Biological clocks, photoperiodism, function & structure of phytochromes, phototropin & cryptochromes. Senescence, Aging & Cell Death (PCD and Autophagosis).Plant Movements	
UNIT IV	**14 hrs**
Biochemistry : **Introduction and scope of Biochemistry** **Carbohydrates** :Structure, Classification and functions of Carbohydrates **Enzymes:** Classification, kinetics and mechanism of action. **Proteins and amino acids**: Classification, structure - primary, secondary, tertiary and quaternary. Classification of Amino acids. **Vitamins**: Classification, distribution, structure, production, function. **Lipids:** Classification, structure, function and biosynthesis of fatty acids. **Secondary plant products**: Structure, biosynthesis and distribution of terpenes, phenolics and nitrogen containing compounds.	

VI Semester

PLANT PHYSIOLOGY AND PLANT BIOCHEMISTRY (Practical)

Course Title	**Plant Physiology and Biochemistry (Practical)**	Practical Credits	**2**
Course Code	21BSC6BOT 6P2	Contact Hours	**4 Hours**
Formative Assessment	**25 Marks**	Summative Assessment	**25 Marks**
Practical Content			
1. Experiment to demonstrate the phenomenon of exosmosis and endosmosis. 2. To determine the osmotic pressure of the cell sap by plasmolytic method. (Major) 3. To demonstrate root pressure / transpiration pull in plants. 4. To compare the rate of transpiration from the two surfaces of leaf by cobalt chloride paper method 5. To demonstrate that oxygen is liberated in the process of photosynthesis. 6. Separation of photosynthetic pigments by paper chromatography and measure their Rf values (Major) 7. Estimation of total chlorophyll content by Arnon method. (Major) 8. To isolate and identify the amino acids from a mixture using paper chromatography. (Major) 9. To Study of Phototrophism. 10. Qualitative test for Starch, Protein, Reducing Sugars and Lipids. 11. Estimation of TAN (Titratbale acid Number) from *Bryophllum* leaves /*Aloe vera*. (Major)			

SCHEME OF PRACTICAL EXAMINATION

PLANT PHYSIOLOGY AND PLANT BIOCHEMISTRY

Time: 03 hrs **Max. Marks: 25**

1.	Conduct Major Experiment A	06 marks
2.	Comment on minor Experiments B & C	06 marks
3.	Micro Chemical test D	03 marks
4.	Viva-voce	05 marks
5.	Practical Record	05 marks

General Instructions:

Q1. Osmotic potential/paper chromatographic separation of pigments **(A)**
Q2. $CoCl_2/O_2$ evolution/Root pressure/transpiration pull experiments **(B & C)**
Q3. Qualitative tests for Starch, Protein, Reducing Sugars and Lipids **(D)**
Q4. Viva-voce
Q5. Practical record

REFERENCES

1. Wilson, K. and Walker, J. 1994 Fundamentals of Biochemistry 2nd Ed, John Wiley and Sons Inc.
2. JainV K, 2008. Fundamentals of Plant Physiology.S Chand and Co.
3. Kochhar P L, Krishnamoorthy H N. Plant Physiology. Atmaram and sons, Delhi.
4. Kumar and Purohit. Plant Physiology: Fundementals and Applications.Agrobotanical Publishers.
5. Malik CP, 2002. Plant Physiology. Kalyani publishers.
6. Mukherjii S, Ghosh AK, 2005. Plant Physiology. New Central Book Agency, Culcutta.
7. Noggle GR, Fritz GJ, Introductory Plant Physiology.Prentice Hall of India.
8. Pandey SN, Sinha BK, 2006. Plant physiology.Vikas Publishing House, NewDelhi.
9. Salisbury F B, Ross C W, 1992. Plant Physiology. CBS publishers and Distributers, NewDelhi.
10. Sinha A K, 2004. Modern Plant Physilogy. Narosa publishing House, NewDelhi.
11. Srivastava H S, 2004. Plant physiology and Biochemistry. Rasthogi publications.
12. Verma V, 2007.Text Book of Plant Physiology. Ane Books Pvt. Ltd.

General instructions for conducting project:

1. Project work is compulsory for all the students of B.Sc VI semester.

2. Assign the Title of the project related to Botany subject.

3. Marks are allotted based on the performance in Power point presentation, Vivo-voce and submission of dissertation.

4. Duration of the project work is minimum 2 months.

5. The project guide should maintain the attendance of the students.

6. Group of 4-5 students is assigned for each project.

Details of Formative Assessment (IA) For DSCC theory: 40%weightage for Total Marks

Type of Asesment	Weightage	Duration	Comment
Written Test -1	10%	1 Hrs	8th Week
Written Test-2	10%	1 Hrs	12th Week
Seminar	10%	10 minutes	--------
Case Study /Assignment / Field Work / Project Work / Activity	10%	--------	--------
Total	40% of the Maximum Marks allotted for the paper.		

Question Paper Pattern

RANI CHANNAMMA UNIVERSITY BELGAVI

B.Sc Botany V & VI Semester (NEP)

Subject:---------- Code:----------

Maximum Marks: 60

Answer any Six Questions from Question no I

Answer any Three each Questions from Question no II, III, IV and V

QNO I	Answer any **Six** of the following.(At least Two questions from each unit) 1 2 3 4 5 6 7 8	2X6=12
QNO II	Answer any **three** of the following (Should cover Entire unit I) 9. 10. 11. 12.	4X3=12
QNO III	Answer any **three** of the following (Should cover Entire unit II) 13. 14. 15. 16.	4X3=12
QNO IV	Answer any **three** of the following (Should cover Entire unit III) 17. 18 19 20	4X3=12
QNO V	Answer any **three** of the following (Should cover Entire unit IV) 21. 22 23 24.	4X3=12

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM/COURSE STRUCTURE AND SYLLABUS

As per the Choice Based Credit System (CBCS) designed in accordance with Learning Outcomes-Based Curriculum Framework (LOCF) of National Education Policy (NEP) 2020

For

Bachelor of Science (Hons) Zoology

w.e.f.

Academic Year 2021-22 and onwards

RANICHANNAMMA UNIVERSITY,BELAGAVI
BSc (Hons) Zoology program-2021-22

BoS Committee-NEP- BSc (Hons) Zoology

S.No.	Name & Address	Designation
1	Prof.K.Kantharaju Chairman & Professor, Dept.of Chemistry RCUB	**Chairman**
2	Dr.G.M.Sajjanar Associate Professor S.V.M.Arts, Science & Commerce College,Ilkal-587125	**Member**
3	Shri.G.M.Karki M.M.College, Belagavi	**Member**

PREAMBLE

The learning outcomes-based curriculum framework for B.Sc. Degree in Zoology is structured to offer a broad outline within which a Zoology program could be developed. The Zoology course is upgraded keeping in mind the aspirations of students, changing nature of the subject as well as the learning environment. Courses within Zoology have been revisited to incorporate recent advancements, techniques to upgrade the skills of learners. The new structure is expected to enhance the level of understanding among students and maintain the standard of Zoology degrees/program. Effort has been made to integrate use of recent technology and use of MOOCs to assist teaching-learning process among students.

This framework permits there view of graduate attributes, qualification descriptors; program learning out comes and course-level learning outcomes periodically. The framework offers flexibility and innovation in syllabi designing and in methods adopted for teaching- learning process and learning assessment. The major objective is to elevate the subject knowledge of the students, making them critical thinkers and able to solve problems and issues related to Zoology logically and efficiently. Overall, this course has been modified to upgrade skills related to biological science and provide our students a competitive edge in securing a career in academia, industry, pharmaceutical research and development in private as well as public sectors. This course serves as plethora of opportunities in different field‘s right from classical to applied Zoology.

Zoology has been studied in an integrated and cross-disciplinary manner with a comprehensive understanding of all living systems, their relationship with the ecosystem and their application. The framework imbibes a Learning Outcome-based Curriculum Framework (LOCF) for its entire Under Graduate program in Zoology.

A comprehensive understanding and appreciation of the organism differences through ICT tools, MOOCs and well-designed hands on practical exposures along with the fieldwork and if the same principle is followed to understand different phyla through the ladder of evolution and compare cardinal features for classification involving both morphological and molecular tools, along with associated field and lab work, the final product would be better trained without rote learning. Syllabi required are to impart and assess the quality of critical thinking, analytical and scientific reasoning, reflective thinking, information and digital literacy, and problem-solving capacity.

Aim of program deals with the study of animal kingdom specially the structural diversity, biology, embryology, evolution, habits and distribution of animals, both living and extinct. As it covers a fascinating range of topics, the modern zoologists need to have insight into many disciplines.

The Zoology courses designed in terms of concepts, mechanisms, biological designs &functions and evolutionary significance. The students should do the dissertation/project work under practical of different courses, wherever possible.

Program Learning Outcome

Students enrolled in B.Sc. (Hons.) degree program in Zoology will study and acquire complete knowledge of disciplinary as well as allied biological sciences. At the end of graduation, they should possess expertise which will provide them competitive advantage in pursuing higher studies from India or abroad; and seek jobs in academia, research or industries.

Students should be able to identify, classify and differentiate diverse chordates and non-chordates based on their morphological, anatomical and systemic organization. They will also be able to describe economic, ecological and medical significance of various animals in human life. This will create a curiosity and awareness among them to explore the animal diversity and take up wild life photography or wild life exploration as a career option. The procedural knowledge about identifying and classifying animals will provide students professional advantages in teaching, research and taxonomist jobs in various government organizations; including Zoological Survey of India and National Parks/Sanctuaries.

Acquired practical skills in biotechnology, biostatistics, bioinformatics and molecular biology can be used to pursue career as a scientist in drug development industry in India or abroad. Our students will be acquiring basic experimental skills in various techniques in the fields of genetics; molecular biology; biotechnology; qualitative and quantitative microscopy; enzymology and analytical biochemistry. These methodologies will provide extra edge to our students, who wish to undertake higher studies. In-depth knowledge and understanding about comparative anatomy and developmental biology of various biological systems; and learning about the

RANI CHANNAMMA UNIVERSITY

Vidya Sangam, NH-4, Belagavi.-591156

Proposed Curricular and Credits Structure under Choice Based Credit System [CBCS] of Biotechnology Major& One Minor Discipline Scheme for the Four Years Chemistry B.Sc. Undergraduate Honors Programme with effect from 2021-22

SEMESTER-I										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L1	21BSC1L1LK1	Kannada	40	60	100	4	-	-	3	2
	21BSC1L1LFK1	Functional Kannada								
L2	21BSC1L2LEN2	English	40	60	100	4	-	-	3	2
	21BSC1L2LHI2	Hindi								
	21BSC1L2LSN2	Sanskrit								
	21BSC1L2LTE2	Telugu								
	21BSC1L2LUR2	Urdu								
DSC1	21BSC1C1ZOO1L	Cytology, Genetics and Infectious Diseases	40	60	100	4	-	-	4	2
	21BSC1C1ZOO1P	Cell Biology and Genetics	25	25	50	-	-	4	2	4
DSC1	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	3
			25	25	50	-	-	4	2	4
SEC1	21BSC1S1CS1	Digital Fluency	25	25	50	1	-	2	2	2
VBC1	21BSC1V1PE1	Physical Education-Yoga	25	-	25	-	-	2	1	-
VBC2	21BSC1V2HW1	Health& Wellness	25	-	25	-	-	2	1	-
OEC1	21BSC1O1ZOO1	Economic Zoology	40	60	100	3	-	-	3	2
Total Marks				**700**		**Semester Credits**			**25**	

SEMESTER-II										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L3	21BSC2L3LK2	Kannada	40	60	100	4	-	-	3	2
	21BSC2L3FKL2	Functional Kannada								
L4	21BSC2L4EN2	English	40	60	100	4	-	-	3	2
	21BSC2L4HI2	Hindi								
	21BSC2L4SN2	Sanskrit								
	21BSC2L4TE2	Telugu								
	21BSC2L4UR2	Urdu								
DSC2	21BSC2C2ZOO2L	Biochemistry and Physiology	40	60	100	4	-	-	4	2
	21BSC2C2ZOO2P	Physiological, Biochemical& Hematology	25	25	50	-	-	4	2	4
DSC2	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
AECC1	21BSC2AE1ES2	Environmental Studies	25	25	50	1	-	2	2	2
VBC3	21BSC2V3PE2	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC4	21BSC2V4NC1	NCC/NSS/R&R(S&G)/Cultural	25	-	25	-	-	2	1	-
OEC2	**21BSC2O2ZOO2**	**Parasitology**	**40**	**60**	**100**	**3**	**-**	**-**	**3**	**2**
Total Marks				**700**		**Semester Credits**			**25**	

Note: *All skill enhancement course (SEC) syllabus and title should be selected time to time notice from the university and/or NEP committee accordingly.*

SECOND YEAR;SEMESTER-III										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L5	21BSC3L5LK3	Kannada	40	60	100	4	-	-	3	2
	21BSC3L5LFK3	Functional Kannada								
L6	21BSC3L6EN3	English	40	60	100	4	-	-	3	2
	21BSC3L6HI3	Hindi								
	21BSC3L6SN3	Sanskrit								
	21BSC3L6TE3	Telugu								
	21BSC3L6UR3	Urdu								
DSC3	21BSC3C3ZOO3L	Molecular Biology, Bioinstrumentation & Biotechniques	40	60	100	4	-	-	4	2
	21BSC3C3ZOO3P	Molecular Biology, Bioinstrumentation & Biotechniques	25	25	50	-	-	4	2	4
DSC3	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
SEC2	21BSC3S2AI	Artificial Intelligence	25	25	50	1	-	2	2	2
VBC5	21BSC3V5PE3	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC6	21BSC3V6NC2	NCC/NSS/R&R(S&G)/Cultural	25	-	25	-	-	2	1	-
OEC3	21BSC3O3ZOO3	Endocrinology	40	60	100	3	-	-	3	2
Total Marks			**700**		**Semester Credits**				**25**	

SEMESTER-IV										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L7	21BSC4L7LK4	Kannada	40	60	100	4	-	-	3	2
	21BSC4L7LFK4	Functional Kannada								
L8	21BSC4L8EN4	English	40	60	100	4	-	-	3	2
	21BSC4L8HI4	Hindi								
	21BSC4L8SN4	Sanskrit								
	21BSC4L8TE4	Telugu								
	21BSC4L8UR4	Urdu								
DSC4	21BSC4C4ZOO4L	Gene Technology, Immunology and Computational Biology	40	60	100	4	-	-	4	2
	21BSC4C4ZOO4P	Gene Technology, Immunology and Computational Biology	25	25	50	-	-	4	2	4
DSC4	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	3
			25	25	50	-	-	4	2	3
AECC 2	21BSC4AE1ES2	Constitution of India	25	25	50	1	-	2	2	2
VBC7	21BSC4V5PE4	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC8	21BSC4V6NC3	NCC/NSS/R &R(S&G)/ Cultural	25	-	25	-	-	2	1	-
OEC4	21BSC4O3ZOO4	Animal Behaviors	40	60	100	3	-	-	3	2
Total Marks			**700**			**Semester Credits**			**25**	

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Zoology as Major Discipline										
DSC5	21BSC5C5ZOO5L	Non-Chordates and Economic Zoology	40	60	100	3	-	-	3	2
	21BSC5C5ZOO5P	Non-Chordate and Economic Zoology	25	25	50	-	-	4	2	4
DSC6	21BSC5C6ZOO6L	Chordates and Comparative Anatomy	40	60	100	3	-	-	3	2
	21BSC5C6ZOO6P	Chordate(Virtual Dissection),Comparative Anatomy	25	25	50	-	-	4	2	4
DSC5	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	4
VC1	21BSC5VC1ZOO		40	60	100	3	-	-	3	2
VBC 9	21BSC5V5PE5	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC 10	21BSC5V6NC4	NCC/NSS/R&R(S&G)/Cultural	25	-	25	-	-	2	1	-
SEC3	21BSC5S3ZOO3		25	25	50	1	-	2	2	2
Total Marks					**700**	**Semester Credits**			**22**	

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/wee**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Zoology as Major Discipline										
DSC7	21BSC6C7ZOO7L	Evolutionary and Developmental Biology	40	60	100	3	-	-	3	2
	21BSC6C7ZOO7P	Evolutionary and Developmental Biology	25	25	50	-	-	4	2	4
DSC8	21BSC6C8ZOO8L	Environmental Biology and Wildlife Management	40	60	100	3	-	-	3	2
	21BSC6C8ZOO8P	Environmental Biology,Wildlife Management and conservation	25	25	50	-	-	4	2	4
DSC6	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	4
VC2	21BSC6VC2HT	HealthCare Technologies	40	60	100	3	-	-	3	2
	21BSC6VC2DM	Digital Marketing								
INT1	21BSC6INT1L	Internship	25	50	75	-	-	2	2	2
VBC1	21BSC6V5PE5	Physical Education -Sports	25	-	25	-	-	2	1	-
VBC2	21BSC6V6NC4	NCC/NSS /R&R(S&G) /Cultural	25	-	25	-	-	2	1	-
SEC4	21BSC6S4ZOO4	Zoology	25	25	50	1	-	2	2	2
Total Marks					**700**	**Semester Credits**			**24**	
Total Marks for B.Sc Program						**Total Credits for B.Sc Program**			**146**	

Zoology Subject as a Minor Discipline

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams(Hrs)**
			I	**SE**	**Total**	**L**	**T**	**P**		
DSC5 As a Minor Subject	21BSC5C5ZOO5L	Non-Chordates and Economic Zoology	40	60	100	3	-	-	3	2
	21BSC5C5ZOO5P	Non-Chordate and Economic Zoology	25	25	50	-	-	4	2	4

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams(Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC6 As a Minor Subject	21BSC6C6ZOO7L	Evolutionary and Developmental Biology	40	60	100	3	-	-	3	2
	21BSC6C6ZOO7P	Evolutionary and Developmental Biology	25	25	50	-	-	4	2	4

Concept Note, Abbreviation Explanation and Coding:

Concept Note:

1. **CBCS** is a mode of learning in higher education which facilitates a student to have some freedom in selecting his/her own choices, across various disciplines for completing a UG/PG program.
2. A credit is a unit of study of a fixed duration. For the purpose of computation of workload as per UGC norms the following is mechanism be adopted in the University:
   One credit (01) = One Theory Lecture (L) period of one (1) hour.One credit (01) = One Tutorial (T) period of one (1) hour.
   One credit (01) = One practical (P) period of two (2) hours.
3. Course: paper/subject associated with AECC, DSC, DSEC, SEC, VBC, OEC, VC, IC and MIL
4. In case of B.Sc. Once a candidate chose two courses/subjects of a particular two department in the beginning, he/she shall continue the same till the end of the degree, and then there is no provision to change the course(s) and Department(s).
5. A candidate shall choose one of the Department‘s courses as major and other Department course as minor in fifth and sixth semester and major course will get continued in higher semester.
6. Wherever there is a practical there will be no tutorial and vice-versa
7. A major subject is the subject that's the main focus of Core degree/concerned.
8. A minor is a secondary choice of subject that complements core major/concerned.
9. Vocational course is a course that enables individual to acquire skills set that are required for a particular job.
10. Internship is a designated activity that carries some credits involving more than **25days** of working in an organization (either in same organization or outside) under the guidance of an identified mentor. Internship shall be an integral part of the curriculum.
11. **OEC: For non computer science students. Computer Science students have to opt for OEC from departments other than major and minor disciplines.**

Abbreviation Explanations:

1. AECC: Ability Enhancement Compulsory Course.
2. DSC: Discipline Specific Core Course.
3. DSEC: Discipline Specific Elective Course.
4. SEC: Skill Enhancement Course.
5. VBC: Value Based Course.
6. OEC: Open/Generic Elective Course
7. VC: Vocational Course.
8. IC: Internship Course
9. L1: Language One
10. L2: MIL
11. L= Lecture; T=Tutorial; P=Practical.
12. MIL=Modern Indian Language; English or Hindi or Telugu or Sanskrit or Urdu

Program Coding:

1. Code21:Year of Implementation
2. Code BSc: BSc Program under the faculty of Applied Science of the University
3. Code1: First Semester of the Program, (2 to 6 represent higher semesters)
4. CodeAE: AECC,(C for DSC,S for SEC,V for VBC and O for OEC)
5. Code1:First–AECC‖Course in semester, similarly in remaining semester for such other courses
6. Code LK: Language Kannada, similarly Language English, Language Hindi, Language Telugu, Language Sanskrit, & Language Urdu
7. Code1: Course in that semester.
8. Zoo: Zoology

Note: *All skill enhancement course (SEC) syllabus and title should be selected time to time notice from the university and/or NEP committee accordingly.*

ASSESSMENT METHODS

Evaluation Scheme for Internal Assessment:

Theory:

Assessment Criteria	**40marks**
1st Internal Assessment Test for 30 marks 1 hr after 8 weeks and 2nd Internal Assessment Test for 30 marks 1hr after15 weeks. Average of two testsShould be considered.	30
Attendance>75%	05
Assignment	05
Total	**40**

Assessment Criteria	**25arks**
1st Internal Assessment Test for 20 marks 1 hr after 8 weeks and 2nd Internal Assessment Test for 20 marks 1hr after15 weeks. Average of two tests. Should be considered.	20
Attendance>75%	05
Total	**25**

Practical:

Assessment Criteria	**25 marks**
1st Internal Assessment Test for15 marks 1/2 hr after 8 weeks and 2ndInternal Assessment Test for 15 marks 1/2hr after 15 weeks. Average of two tests should be considered.	15
Attendance>75%	05
Assignment	05
Total	**25**

Question Paper Pattern:

RANI CHANNAMMA UNIVERSITY
Department of ZOOLOGY

I Semester B.Sc (Zoology)

Duration: 2 hrs **Sub:** **Code:** **Maximum Marks: 60**

a. Answer any six Questions from Question I

b. Answer any Three questions from each main questions numbers II, III, IV and **V**

Q.No.I	**Answer any six Questions (Two question from Each Unit)** **1.** **2.** **3.** **4,** **5.** **6.** **7.** **8.**	**2X6=12**
Q.No.II	**(Should cover Entire Unit-I)** **9.** **10.** **11.** **12.**	**4X3=12**
Q.No.III	**(Should cover Entire Unit-II)** **13.** **14.** **15.** **16.**	**4X3=12**
Q.No.IV	**(Should cover Entire Unit-III)** **17.** **18.** **19.** **20.**	**4X3=12**
Q.No.V	**(Should cover Entire Unit-IV)** **21.** **22.** **23.** **24.**	**4X3=12**

SYLLABUS

Semester I

Year	I	**Course Code:** 21BSC1C1ZOO1L	**Credits**	04
Sem.	1	**Course Title : Cytology, Genetics and Infectious Diseases**	**Hours**	56
Unit No.		**Course Content**	**Hours**	
Unit I		**Structure and Function of Cell Organelles I in Animal cell** • Plasma membrane: chemical structure—lipids and proteins • Endomembrane system: protein targeting and sorting, transport, endocytosis and exocytosis **Structure and Function of Cell Organelles II in Animal Cell** • Cytoskeleton: microtubules, microfilaments, intermediate filaments • Mitochondria: Structure, oxidative phosphorylation; electron transport system Peroxisome and Ribosome: structure and function	14	
Unit II		**Nucleus and Chromatin Structure** • Structure and function of nucleus in eukaryotes • Chemical structure and base composition of DNA and RNA • Structure of chromosomes • Types of DNA and RNA **Cell cycle, Cell Division and Cell Signaling** • Cell division: mitosis and meiosis • Introduction to Cell cycle and its regulation, apoptosis • Signal transduction: intra cellular 11 signaling and cell surface receptors, via G-protein linked receptors • Cell-cell interaction: cell adhesion molecules, cellular junctions	14	

Unit III	**Mendelism and Sex Determination** • Basic principles of heredity: Mendel's laws- monohybrid cross and hybrid cross • Complete and Incomplete Dominance • Genetic Sex-Determining Systems, Environmental Sex Determination, Sex Determination and mechanism in *Drosophila melanogaster*. • Sex-linked characteristics in humans and dosage compensation **Extensions of Mendelism, Genes and Environment** • Extensions of Mendelism: Multiple Alleles, Gene Interaction. • The Interaction Between Sex and Heredity: Sex-Influenced and Sex-Limited Characteristics • Cytoplasmic Inheritance, Genetic Maternal Effects. Interaction between Genes and Environment: Environmental Effects on Gene Expression, Inheritance of Continuous Characteristics.	14

Unit IV	**Human Chromosomes and Patterns of Inheritance** • Patterns of inheritance: autosomal dominance, autosomal recessive, X-linked recessive, X-linked dominant. • Chromosomalanomalies:Structuralandnumericala berrationswithexamples. • Human karyotyping. **Infectious Diseases** • Introduction to pathogenic organisms: viruses, bacteria, fungi, protozoa and worms. • Structure,lifecycle,pathogenicity,includingdiseases,cau ses,symptoms and control of common parasites: *Trypanosoma, Giardia and Wuchereria*	14

Suggested Readings:

1. Lodish et al: Molecular Cell Biology: Freeman & Co, USA (2004).
2. Albert et al: Molecular Biology of the Cell: Garland (2002).
3. Cooper: Cell: A Molecular Approach: ASM Press (2000).
4. Karp: Cell and Molecular Biology: Wiley (2002). Pierce B. Genetics. Freeman (2004).
5. Lewin B. Genes VIII. Pearson (2004).
6. Watson et al. Molecular Biology of the Gene. Pearson (2004).
7. Thomas J. Kindt, Richard A. Goldsby, Barbara A. Osborne, Janis Kuby-Kuby Immunology. W H Freeman (2007).
8. Delves Peter J., Martin Seamus J., Burton Dennis R., Roitt Ivan M. Roitt's Essential Immunology, 13th Edition. Wiley Blackwell (2017).
9. Principles of Genetics by B.D.Singh
10. Cell- Biology by C.B.Pawar, Kalyani Publications
11. Economic Zoology by Shukla and Upadhyaya

Zoology-Lab Course Content

Semester-I

Course Title:Cell Biology & Cytogenetics	Course Credits:**2**
CourseCode**:**21BSC1C1ZOO1P	L-T-P perweek:0-0-4
Total Contact Hours**: 56**	Duration of ESA:4Hours
FormativeAssessmentMarks:**25**	SummativeAssessmentMarks:2**5**

Course Outcomes (COs):

At the end of the course the student should be able to:

1. To use simple and compound microscopes.
2. To prepare stained slides to observe the cell organelles.
3. To be familiar with the basic principle of life, how a cell divides leading to the growth of an organism and also reproduces to form new organisms.
4. The chromosomal aberrations by preparing karyotypes.
5. How chromosomal aberrations are inherited in humans by pedigree analysis in families The antigen- antibody reaction

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs)

Course Outcomes(COs)/Program	**CCP1**	**CC**	**CC**	**CC**	**CC**	**CC**	**CC**	**CC**	**CC**	**CC**	**CC**
I Core competency	X										
II Critical thinking	X										
III Analytical reasoning	X										
IV Research skills	X										
V Team work	X										

Note: Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark ‘X’ in the intersection cell if a course outcome addresses a particular program outcome.

Lab Course Content

List of labs to be conducted	56 hrs
1. Understanding of simple and compound microscopes.	1
2. To study different cell types such as buccal epithelial cells, neurons, striated muscle cells using Methylene blue/any suitable stain (virtual/slaughtered tissue).	1+1
3. To study the different stages of Mitosis in root tip of *Allium cepa*.	1
4. To study the different stages of Meiosis in grasshopper testis (virtual).	1
5. To check the permeability of cells using salt solution of different concentrations.	1
6. Study of parasites in humans (e.g. Protozoans, Helminthes in compliance with examples being studied in theory) permanent micro slides.	1+1
7. To learn the procedures of preparation of temporary and permanent-stained slides, with available mounting material.	1
8. Study of mutant phenotypes of *Drosophila* sp. (from Cultures or Photographs).	1
9. Preparation of polygene chromosomes (Chironomus larva or Drosophila larva).	1+1
10. Preparation of human karyotype and study the chromosomal structural and numerical aberrations from the pictures provided. (Virtual/optional).	1+1

Suggested Readings:

1. Lodish et al: Molecular Cell Biology: Freeman &Co, USA (2004).
2. Alberts et al: Molecular Biology of the Cell: Garland (2002).
3. Cooper: Cell: A Molecular Approach: ASM Press (2000).
4. Karp: Cell and Molecular Biology: Wiley (2002). Pierce B. Genetics. Freeman (2004).
5. Thomas J. Kindt, Richard A. Goldsby, Barbara A. Osborne, Janis Kuby-Kuby Immunology. WHF Reeman (2007).
6. Kesar, Saroj and Vasishta N. 2007 Experimental Physiology: Comprehensive Manual. Heritage Publishers, New Delhi.

OPEN-ELECTIVE SYLLABUS:

Year	I	**Course Code:** 21BSC1O1ZOO1	**Credits**	03
Sem.	1	**Course Title: Economic Zoology**	**Hours**	42

Unit No.	**Course Content**	**Hours**
Unit I	**1. Sericulture:** • History and present status of sericulture in India • Mulberry and non-mulberry species in Karnataka and India • Mulberry cultivation • Morphology and life cycle of *Bombyx mori* • Silkworm rearing techniques: Processing of cocoon, reeling • Silkworm diseases and pest control **2. Apiculture:** • Introduction and present status of apiculture • Species of honey bees in India, lifecycle of *Apis indica* • Colony organization, division of labour and communication • Beekeeping as an agro based industry; methods and equipments: indigenous methods, extraction appliances, extraction of honey from the comb and processing • Bee pasturage, honey and beeswax and the viruses. Pests and diseases of bees and their management	14
Unit II	**3. Live Stock Management:** **Dairy:** • Introduction to common dairy animals and techniques of dairy management • Types, loose housing system and conventional barn system; advantages and limitations of dairy farming • Establishment of dairy farm and choosing suitable dairy animals-cattle • Cattlefeeds, milk and milk products • Cattle diseases **Poultry:** • Types of breeds and their rearing methods • Feed formulations for chicks • Nutritive value of egg and meat • Disease of poultry and control measures **4. Aquaculture:** • Aquaculture in India: An overviewand present status and scope of aquaculture. • Types of aquacultures: Pond culture: Construction, maintenance and management; carp culture, shrimp culture, shellfish culture, composite fish culture and pearl culture	14
Unit III	**5. Fish culture:** • Common fishes used for culture.	14

	• Fishing crafts and gears. • Ornamental fish culture: Fresh water ornamental fishes- biology, breeding techniques • Construction and maintenance of aquarium: Construction of home aquarium, materials used, setting up of freshwater aquaria, aquarium plants, ornamental objects, cleaning the aquarium, maintenance of water quality, control of snail and algal growth. • Modern techniques of fish seed production **6. Prawn culture:** • Culture of fresh and marine water prawns. • Preparation of farm. • Preservation and processing of prawn, export of prawn. **7. Vermiculture:** • Scope of vermiculture. • Types of earthworms. • Habit categories- epigeic, endogeic and anecic; indigenous and exotic species. • Methodology of vermicomposting: containers for culturing, raw materials required, preparation of bed, environmental pre-requisites, feeding, harvesting and storage of vermicompost. • Advantage of vermicomposting. • Diseases and pests of earthworms. **8. Lac Culture:** • History of lac and its organization, lac production in India. • Lifecycle, host plants and strains of lac insect. • Lac cultivation: Local practice, improved practice, propagation of lac insect, inoculation period, harvesting of lac. Lac composition, processing, products, uses	

Textbooks: Suggested Readings:

1. Eikichi, H. (1999). Silkworm Breeding (Translated from Japanese). Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Ganga.G. (2003).Comprehensive Sericulture Vol-II: Silkworm Rearing and Silk Reeling.
3. Oxford & IBH Publishing Co.Pvt.Ltd. New Delhi.
4. Mahadevappa.D. Halliyal.V.G., Shankar.D.G. And Bhandiwad.R. (2000). Mulberry Silk
5. Reeling Technology Oxford& IBH Publishing Co.Pvt.Ltd. New Delhi.
6. Roger.M (1990).The ABC and Xyz of Bee Culture: An Encyclopedia of Beekeeping, Kindle Edition.

7. Shukla and Upadhyaya(2002).Economic Zoology, Rastogi Publishers
8. Yadav Manju (2003). Economic Zoology, Discovery Publishing House.
9. Jabbed PradipV (2005). Textbook of applied Zoology, Discovery Publishing House, New Delhi.
10. Cherian & Ramachandran Bee keeping in-South Indian Govt.Press, Madras.
11. Sathe, T.V. Vermiculture and Organic farming.
12. Bard.J (1986). Handbook of Tropical Aquaculture.
13. Santhanam, R.A. Manual of Aquaculture.
14. Zuka.R.1 and Hamiyn (1971). Aquarium fishes and plants
15. Jabde.P.V. (2005) Textbook of Applied Zoology: Sericulture, Apiculture, Sericulture, Lac culture.
16. Animal Disease- Bairagi K.N. Anmol Publications Pvt. Ltd 2014
17. Economics of Aquaculture-Singh (R.K.P)- Danika Publishing Company 2003
18. Applied and Economic Zoology (SWAYAM)

webhttps://swayam.gov.in/nd2_cec20_ge23/preview Course Books published in English and Kannada maybe prescribed by the Universities and College

Semester-II

<table>
<tr><td>Year</td><td>I</td><td rowspan="2">Course Code: 21BSC2C2ZOO2L

Course Title: Biochemistry and Physiology</td><td>Credits</td><td>04</td></tr>
<tr><td>Sem.</td><td>2</td><td>Hours</td><td>56</td></tr>
<tr><td colspan="2">Unit No.</td><td>Course Content</td><td colspan="2">Hours</td></tr>
<tr><td colspan="2">Unit I</td><td>Structure and Function of Biomolecules:
□ Structure and Biological importance of carbohydrates (Monosaccharides, Disaccharides, Polysaccharides and Glycoconjugates).
□ Lipids (saturated and unsaturated Fatty acids, Tri-acylglycerols, Phospho lipids, Glycolipids and Steroids)
Structure,Classification and General Properties of α-aminoacids;
Essential and non-essential amino acids, Levels of organization in proteins; Simple and conjugated proteins.
Enzyme Action and Regulation
• Nomenclature and classification of enzymes; Cofactors; Specificity of enzyme action.
• Isoenzymes; Mechanism of enzyme action
• Enzyme kinetics;Factors affecting rate of enzyme-catalyzed reactions; Equation of Michaelis - Menten, Concept of Km and V max, Enzyme inhibition
□ Allosteric enzymes and their kinetics; Regulation of enzyme action.</td><td colspan="2">14</td></tr>
<tr><td colspan="2">Unit II</td><td>Metabolism of Carbohydrates and Lipids
□ Metabolism of Carbohydrates: glycolysis, citric acid cycle, gluconeogenesis,
□ Phosphate pentose pathway Glycogenolysis and Glycogenesis Lipids-Biosynthesis of palmitic acid; Ketogenesis,
□ B-oxidation and omega-oxidation of saturated fattyacids.
Metabolism of Proteins and Nucleotides
□ Catabolism of amino acids: Transamination, Deamination, Urea cycle, Nucleotides and vitamins,Peptide linkages</td><td colspan="2">14</td></tr>
</table>

Unit III	**Digestion and Respiration in humans** • Structural organization and functions of gastrointestinal tract and associated glands. • Mechanical and chemical digestion of food; Absorptions of carbohydrates, lipids, proteins, water, minerals and vitamins.. Mechanism of respiration, Physiology of trachea and Lung Pulmonary ventilation; Respiratory volumes and capacities; Transport of oxygen and carbon dioxide in blood, Respiratory pigments, Dissociation curves and the factors influencing it; **Circulation and Excretion in humans** • Components of blood and their functions;hemopoiesis • Blood clotting: Blood clotting system, Blood groups:Rh-factor,ABO and MN • Structure of mammalian heart • Cardiaccycle; Cardiac out put and its regulation, Electrocardiogram, Blood pressure and its regulation. Structure of kidney and its functional unit; Mechanism of urine formation	14
UnitIV	**Nervous System and Endocrinology in humans** • Structure of neuron, resting membrane potential(RMP) • Origin of action potential and its propagation across the myelinated and non myelinated nerve fibers. Types of synapse. • Endocrineglands- pineal,pituitary,thyroid,parathyroid,pancreasand adrenal **Muscular System in humans** • Histology of different types of muscle; Ultra structure of skeletal muscle; Molecular and chemical basis of muscle contraction; Characteristics of muscle twitch; Motorunit, summation and tetanus.	14

Suggested Readings

1. Nelson & Cox: Leiningers Principles of Biochemistry : McMillan (2000)
2. Zubayetal: Principles of Biochemistry:WCB (1995)
3. Voet &Voet: Biochemistry Vols l & 2: Wiley(2004)
4. Murrayetal: Harper's Illustrated Biochemistry : McGrawHill (2003) Elliott and Elliott : Biochemistry and Molecular Biology: Oxford University Press
5. Guyton, A.C. & Hall, J.E. Textbook of Medical Physiology, XL Edition, Harcourt Asia PTE Ltd. W.B. Saunders Company. (2006).
6. Tortora, G.J. & Grabowski, S. Principles of Anatomy & Physiology. XI Edition JohnWiley & sons (2006).
7. Christopher D. Mayes, Patricia M. Schulte. Principles of Animal Physiology. 3rdEdition, Pearson Education (2016).
8. Hill, Richard W., et al. Animal physiology. Vol. 2. Sunderland, MA: Sinauer Associates, (2004).
9. Chatterjee CC Human Physiology Volume l & 2, 11th edition, CBS Publishers (20I6).

Semester-II: Zoology Course Lab Content

Course Title/Code: Biochemistry and Physiology	Course Credits: **2**
Course Code: 21BSC2C2ZOO2P	L-T-P per week: 0-0-4
Total Contact Hours**: 56**	Duration of ESA: 4 Hours
Formative Assessment Marks : **25**	Summative Assessment Marks: **25**

Course Outcomes (COs):

- At the end of the course the student should be able to understand: Basic structure of biomolecules through model making.
- Develop the skills to identify different types of blood cells.
- Enhance basic laboratory skill like keen observation, analysis and discussion. Learn the functional attributes of biomolecules in animal body.
- Know uniqueness of enzymes in animal body and their importance through enzyme kinetics.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs)

Course Outcomes(COs)/Program	**CO P1**	**CO P2**	**CO**	**CO**	**CO**	**CO**	**CO**	**CO**	**CO**	**CO**	**CO**
I Corecompetency		X									
II Critical thinking		X									
III Analytical reasoning		X									
IV Research skills		X									
V Team work		X									

Note: Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainments attempted in this course. Mark 'X' in the intersection cell if a course outcome addresses a particular program outcome.

Course Content

List of labs to be conducted	Hours
1. Preparation of models of amino acids and dipeptides. 2. Preparation of models of DNA and RNA. 3. Qualitativeanalysis of Carbohydrates, Proteins and Lipids. 4. Qualitative analysis of Nitrogenous wastes–Ammonia, Urea and Uric acid. 5. Separation of amino acids or proteins by paper chromatography.	20
6.Determination of the activity of enzyme (Urease)-Effect of [S] and determination of-Km and Vmax. 7. Determination of the activity of enzyme (Urease)- Effect of temperature and time.	15
8. Estimation of Hemoglobin in human blood using Sahli's haemoglobinometer. 9. Counting of RBC in blood using Hemocytometer. 10. Counting of WBC in blood using Hemocytometer. 11. Differential staining of human blood corpuscles using Leishmanstain. 12. Recording of blood glucose level by using glucometer.	15
Virtual Labs (Suggestive sites)https://www.vlab.co.inhttps://zoologysan.blogspot.comwww.vlab.iitb.ac.in/vlabhttps://vlab.amrita.eduhttps://sites.dartmouth.eduwww.onlinelabs.in	06

Textbooks

1. Nelson&Cox: Lehininger's Principles of Biochemistry:McMillan (2000)
2. Zubayet al: Principles of Biochemistry:WCB (1995)
3. Voet & Voet: Biochemistry Vols l & 2: Wiley (2004)
4. Murrayetal:Harper's Illustrated Biochemistry:Mc Graw Hill (2003) Elliott and Elliott: Biochemistry and Molecular Biology: Oxford University Press
5. Guyton,A.C.& Hall,J.E.Text book of Medical Physiology,Xl Edition,Hercourt Asia PTE Ltd. W.B.Saunders Company.(2006).
6. Tortora,G.J. & Grabowski, S. Principles of Anatomy & Physiology.XI Edition John

Wiley sons (2006).
7. Christopher D. Moyes, Patricia M. Schulte. Principles of Animal Physiology. 3rdEdition,PearsonEducation (2016).
8. Hill, Richard W., et al. Animal physiology. Vol. 2. Sunderland, MA: SinauerAssociates,(2004).
9. ChatterjeeCCHumanPhysiologyVolumel&2,11thedition,CBSPublishers(20I6).

Web References: Mammalian Physiology–www.biopac.com

Pedagogy: Lectures, Presentations, videos, Virtual Labs, Assignments, Tests, Individual or group Field oriented Project Report on or visit to a research institute.

TOPICS RECOMMENDED FOR SEMINAR/ PROJECT REPORT

1. Biochemical pathways, their evolutionary back ground and regulation.
2. Blood groups and their importance.
3. Vital enzymes for humanbody.
4. Essential and non essential aminoacids.
5. Important body lipids.
6. Significance of animal proteins.
7. Role of carbohydrates in animal body.
8. Nature of proteins and nurture of animal body.
9. Role of lipids in structural and functional organization of body.

OPEN- ELECTIVE SYLLABUS:

<table>
<tr><td>Year</td><td>I</td><td>Course Code:21BSC2O2ZOO2

Course Title: Parasitology</td><td>Credits</td><td>03</td></tr>
<tr><td>Sem</td><td>II</td><td></td><td>Hours</td><td>42</td></tr>
<tr><td colspan="2">Unit No.</td><td>Course Content</td><td colspan="2">Hours</td></tr>
<tr><td colspan="2">Unit I</td><td>1. General Concepts
Introduction, Parasites, parasitoids, host, zoonosis
Origin and evolution of parasites
Basic concept of Parasitism, symbiosis, phoresis, commensalism and mutualism
Host-parasite interactions and adaptations
Life cycle of human parasites
Occurrence, mode of infection and prophylaxis
2. Parasitic Platyhelminthes
Study of morphology, lifecycle, pathogenicity, prophylaxis and control measures of
Fasciolopsis buski
Schistosoma haematobium
Taenia solium
3. Parasitic Protists
Study of morphology, lifecycle, pathogenicity, prophylaxis and control measures of
Entamoeba histolytica
Giardia intestinalis
Plasmodium vivax</td><td colspan="2">14</td></tr>
<tr><td colspan="2">Unit II</td><td>4.Parasitic Nematodes
Studyof morphology, lifecycle, pathogenicity, prophylaxis and control measures of
Ascaris lumbricoides
Ancylostoma duodenale
Wuchereria bancrofti
Nematode plant interaction; Gall formation
5. Parasitic Arthropods
Biology,
importance and
control of
Ticks(Soft tick Ornithodoros,HardtickIxodes)
Mites(Sarcoptes)
Lice(Pediculus)
Flea(Xenopsylla)
Parasitoid(Beetles)
6. ParasiticVertebrates
Cookicutter Shark
Hood Mocking bird and</td><td colspan="2">14</td></tr>
</table>

	Vampire bat and their parasitic behavior and effect on host	
Unit III	**7. Molecular diagnosis & clinical parasitology** • General concept of molecular diagnosis for parasitic infection • Advantages and disadvantages of molecular diagnosis • Fundamental techniques used in molecular diagnosis of endoparasites • Immunoassay or serological techniques for laboratory diagnosis of endoparasite on the basis of marker molecules like G.intestinalis, B.coli, E.histolytica, L.donovani, malarial parasite using ELISA, RIA • Counter Current Immuno electrophoresis (CCI) Complement Fixation Test (CFT) PCR, DNA, RNA probe.	14

Suggested Readings:

1. Arora, D.R and Arora, B. (2001) Medical Parasitology. II Edition. CBS Publications and Distributors.
2. E.R.Noble and G.A. Noble (1982) Parasitology: The biology of animal parasites. V Edition, Lea & Febiger.
3. Ahmed,N., Dawson,M.,Smith,C. and Wood,Ed .(2007) Biology of Disease.Taylor and Francis Group.
4. Parija,S.C. Textbook of medical parasitology, protozoology & helminthology (Text and colour atlas), II Edition, All India Publishers & Distributers, Medical Books Publishers, Chennai, Delhi.
5. Meyer, Olsen & Schmidt's Essentials of Parasitology, Murray, D.Dailey, W.C.Brown Publishers.
6. K.D.Chatterjee (2009). Parasitology: Protozoology and Helminthology. XIII Edition, CBS Publishers & Distributors (P) Ltd.
7. Gunn, A. and Pitt, S.J. (2012). Parasitology: an Integrated Approach.Wiley Blackwell.
8. Noble,E.R. and G.A.Noble (1982) Parasitology:
9. The biology of animal parasites.Vth Edition,Lea & Febiger.
10. Paniker, C.K.J., Ghosh, S. [Ed} (2013). Paniker's TextBook of Medical Parasitology. Jaypee, NewDelhi.
11. Parija, S.C.Textbook of medical parasitology, protozoology & helminthology (Text and color Atlas), II Edition, All India Publishers & Distributers, Medical Books Publishers, Chennai, Delhi.
12. Roberts, L. Sand Janovy, J. (2009). Smith & Robert's Foundation of Parasitology. 8th. Edn. McGraw Bogitsh, B. J. and Cheng, T. C. (2000). Human Parasitology. 2nd Ed. Academic Press, New York.
13. Chandler, A. C.andRead.C. P. (1961).Introduction to Parasitology, 10th ed. John Wiley and Sons Inc.
14. Cheng T.C. (1986). General Parasitology. 2nd ed. Academic Press, Inc.Orlando.U.S.A.
15. Schmidt, G.D. (1989). Essentials of Parasitology.Wm.C.Brown Publishers (Indian print1990, Universal Book Stall).
16. John Hyde (1996) Molecular Parasitology Open University Press.

III Semester BSc Zoology
Core Course Content

Course Title/Code: **Molecular Biology, Bioinstrumentation &Techniques in Biology**	Course Credits:**4**
Course Code: **DSCC5ZOOT3**	L-T-P per week:4-0-0
Total Contact Hours**: 56**	Duration of ESA: 2Hours
Formative Assessment Marks:4**0**	Summative Assessment Marks: **60**

Course Outcomes (COs):

At the end of the course the student should be able to understand:

1. After successful accomplishment of the course, the learners will be able to acquire better understanding and comprehensive knowledge regarding most of the essential aspects of Molecular Biology subject which in turn will provide a fantastic opportunity to develop professional skill related to the field of molecular biology.
2. The course will mainly focus on the study of principal molecular events of cell incorporating DNA Replication, Transcription and Translation in prokaryotic as well as eukaryotic organisms.
3. Acquiring knowledge on instrumentation and techniques in biology.

Semester III-Zoology
Core Course III Content:

Content	Hours
Unit I	**14**
Chapter1: Process of Transcription • Fine structure of gene (Cistron, Recon, Muton) • RNA polymerases-types and functions • Transcription in prokaryotes and eukaryotes	8
Chapter2: Process of Translation • Geneticcode and it ssalien tfeatures • Translation in prokaryotes and eukaryotes	6
Unit II	**14**
Chapter3: Regulation of gene expression-I Regulation of gene expression in prokaryotes- lac operon (inducible) and trp operon (repressible) in *E.coli* Regulation of gene expression in eukaryotes-Role of chromatin (euchromatin and heterochromatin) in gene expression Post-transcriptional modification: capping, splicing, polyadenylation Concept of RNA editing (mRNA), gene silencing, and RNAi.	9
Chapter4: Regulation of gene expression-II Post-translational modifications: purpose, advantages, and significance; glycosylation, methylation, phosphorylation, and acetylation. Intracellular protein degradation (lysosomal autophagy and ubiquitin proteosome Pathway).	5
Unit III	**14**

Chapter5: Microscopy • Principles and applications of Light microscopy, Dark field microscopy, Phase contrast microscopy, Fluorescence microscopy, confocal microscopy and Electron microscopy (SEM and TEM).	9
Chapter6: Centrifugation and Chromatography • Centrifugation: Principles, types, and applications (High speed and Ultracentrifugation) • Chromatography: Principle and applications of: TLC, HPLC and GC	5
Unit IV	**14**
Chapter 7: Biochemical Instrumentation • Colorimetry and Spectrophotometry: Beer-Lambert'slaw, Absorption spectrum, UV-VL Spectrophotometer. • pH meter, measurement of pH • Principle, applications and safety measure sofa Radio-tracer techniques-Autoradiography.	6
Chapter 8: Molecular Techniques • Principle and applications of Agarose gel-electrophoresis, SDS-PAGE, DNA Sequencing (Sanger's Dideoxymethod) • , PCR, DNA Fingerprinting, ELISA, Southern Blotting and Western Blotting.	8

Core Course Lab Content

Semester III (Practical III)

Course Title: **Molecular Biology, Bioinstrumentation and Techniques in Biology**	Course Credits:2
Course Code:DSCC5ZOOP3	L-T-P per week: 0-0-4
Total Contact Hours**: 56**	Duration of ESA: 4Hours
Formative Assessment Marks: **25**	Summative Assessment Marks: **25**

Course Outcomes (COs):

At the end of the course the student should be able to:

1. At the end of the course, students will be able to understand the applications of biophysics and principle involved in bio-instruments.
2. Understand the methodology involved in biotechniques.
3. Students can demonstrate knowledge and practical skills of using instruments in biology and medical field.
4. They can perform techniques involved in molecular biology and diagnosis of diseases.

Lab Course Content

List of experiments	**14 units(1unit-4hrs)**
1.To study the principle and applications of simple,compound and binocular microscopes.	1
2.Tostudytheprinciple and applications of various lab equipments-pH meter, Electronic balance, Vortex mixer, use of glass and micropipettes, Laminar airflow, Incubator, shaker, Waterbath and centrifuge.	2
3.To prepare Buffer solutions (Phosphate, Citrate, Tris-HCl buffer)	1
4. To estimate amount of RNA by Orcinol method.	2
5.Demonstration of differential centrifugation to fractionate components in a Given mixture.	1
6. To estimate amount of protein by Lowry's method.	2
7.To identify different unknown amino acids using ascending paper Chromatography.	1
8. Extraction of DNA from the given animal tissue sample.	2
9. To estimate amount of DNA by di-phenyl amine (DPA) method.	2

Suggested Readings:

1. Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, and Peter Walter. Molecular Biology of the Cell, 4th edition. New York: Garl and Science (2002).
2. Daniel L. Hartl and Maryellen Ruvolo. Genetics: Analysis of Genes and Genomes, 8th Edition. Burlington, Mass.: Jones & Bartlett Learning (2012).
3. Gerald Karp.Cell and Molecular Biology:Concepts and Experiments,5th Edition.Wiley Publication (2008).
4. Harvey Lodish , Arnold Berk,Paul Matsudaira,ChrisA.Kaiser,Monty Krieger,Freeman.Molecular Cell Biology, 5th edition.W.H. & Company (2003).
5. James D. Watson, Tania A. Baker, Stephen P. Bell, Alexander Gann, Michael Levine, Richard Losick. Molecular Biology of the Gene, 5th edition. Cold Spring Harbor Laboratory Press (2003).
6. Stryer, Lubert.Biochemistry, 2nd Edition.W.H. Freeman and Company, New York (1981).

Semester: III Zoology

Open Elective Course Content

Course Title: **ENDOCRINOLOGY** Course Code: **OEC5ZOOT3**	Course Credits: **3**
Total Contact Hours**: 42**	Duration of ESA: 3Hours
Formative Assessment Marks:**40**	Summative Assessment Marks:**60**
Model Syllabus Authors:	

Course Outcomes (Cos):

At the end of the course the student should be able to:

Differentiate among endocrine, paracrine and autocrine systems.

1. Describe the different classes and chemical structures of hormones.
2. Identify the glands, organs, tissues and cells that synthesize and secrete hormones, hormone precursors and associated compounds.
3. Identify and discuss the integration of the endocrine system in general with focus on specific interactions.
4. Explain the consequences of under-and overproduction of hormones.

Course Content

Content	Hrs.
Unit I	**14**
Chapter 1. About Endocrine glands • Endocrine glands and classifications of hormones. • Characteristics and Transport of Hormones. **Chapter 2.Hypothalamus-Hyphophysis** • Hypothalamus as a neuroendocrine organ • Pituitary– Structure and functions • Chemical nature, mode of action, and functions. • Pituitary disorders **Chapter 3. Pineal gland** • Structure and functions of Pineal gland. • Hypo-and hyperactive states of the gland.	
Unit II	**14**
Chapter 4. Thyroid and parathyroid • Histological structure of the glands. • Chemical nature, mode of action, and functions of the hormones. • Hypo- and hyperactive states of the glands. **Chapter 5.:Adrenalcortexandmedulla**– • Histological structure of the gland. Chemical nature, and functions • Hypo-and hyperactive states of the gland. **Chapter 6.** Prostaglandins	
Unit– III	**14**

Chapter7:Pancreas: • Pancreatic islets-histological structure. Chemical nature and function. Hormonal control of blood sugar. • Hyperinsulinism and diabetes mellitus. **Chapter8:Gastro-intestinal hormones**– • Functions and regulation of secretion of the hormones. **Chapter9:Differenttypesof Rhythms**– • Ultradian, circadian, infradian. Different zeitgebers and their relation with circadian clock • Neural basis of biological clock and role of suprachiasmatic nuclei. Sleep-wakefulness cycle. Time keeping genes. Jet-lagand shift work.	

Text Books & Suggested Readings:

1. William's TextBook of Endocrinology Larsen et al.: An Imprint of Elsevier.
2. Endocrinology, Mac E.Hadley, Pearson Education.
3. The Kidney-An outline of Normal and Abnormal Functions, by H.E.Dewardener, ELBS.
4. Vander's Human Physiology, E.P.Widmaier et al., McGraw- Hill, Higher Education.
5. Concise Medical Physiology by S.K.Chaudhuri, New Central Book Agency.
6. Endocrinology.Vols.I, II and III by L.O.DeGroot. W.B.Saunders Co.
7. The PhysiologyofReproduction, Vols.I&II, byE.KnobilandJ.D.Neil.RavenPress.
8. Guyton and Hall. Textbook of Medical Physiology. 13th Edition.
9. Histology:ATextandAtlas.SixthEdition.Ross&Pawlina.LippincottWilliams&Wilkins.
10. Vertebrate Endocrinology by David O.Norris.

IV Semester, B.Sc, (Hons) Zoology

Course Title: **Gene Technology Immunology and Computational Biology**	Course Code:**DSCC5ZOOT4**
Course Type: **Discipline Core Theory, L-T-P: 4-0-0**	Course Credits: **4**
Total Contact Hours: **56**	Duration of ESA: **2Hrs.**
Formative Assessment Marks:**40**	Summative Assessment Marks:**60**

At the end of the course the student should be able to:

1. Acquaint knowledge on versatile tools and techniques employed in genetic engineering and recombinant DNA technology.
2. An understanding on application of genetic engineering techniques in basic and applied experimental biology.
3. To acquire a fundamental working knowledge of the basic principles of immunology.
4. To understand how these principles, apply to the process of immune function.
5. Use, and interpret results of, the principal methods of statistical inference and design; helps to communicate the results of statistical analyses accurately and effectively; helps in usage of appropriate tool of statistical software.

Course Content	Hrs.
Unit I	**14**
Chapter 1: Principles of Gene Manipulation ● Recombinant DNA Technology: Introduction, steps involved. ● Restriction Enzymes and Ligases and Nucleic acid modifying enzyme. ● Gene cloning Vector: Concept of plasmids-pBR322, Lamdaphage vectors, cosmids ● Gene transfer techniques (Direct and indirect). ● Screening and selection of recombinant colonies	07
Chapter 2:Applications of Genetic Engineering • Transgenic animals (Transgenic cow, Transgenic Fish); Transgenic plants (cryprotein); Gene silencing (Knockout and Knock in mouse). ● Production of Human Recombinant insulin and ● Hybridoma technology: Synthesis and applications of Monoclonal antibodies ● Gene Therapy (SCID) ● Biosensors and its applications	07
Unit II	**14**

Chapter3:IntroductiontotheImmuneSystem • Defense against diseases: Introduction, First and second line of defense, Innate and acquired immunity; Antigen presenting cells (APC's), Role of Band T-lymphocytes (humoral immunity and cell mediated immunity), primary and secondary immune response. • Types of immunity • Functional aspects of organs of the Immune system-Thymus and bone Marrow, spleen, Lymph Node, Small intestine and Liver (Peyer's patches and Von Kupffer cells).	07 07
Chapter 4: Antigens and Antibodies • Antigens and haptens: Properties (foreignness, molecular size, heterogeneity). • Band T cellepitopes. • Structure of Ig Gandfunctions of different classes of immune globulins. • Major histo compatibility complex –Structure of MHCI&II.	
Unit III	**14**
Chapter5: Clinical Immunology • Immunity against diseases of viral, bacterial and protozoan infections. • Vaccines: Types and Uses-Immunization schedule for children. • Transplantation immunology: Transplantation of organ- Types, graft rejection and Immuno-suppressors.	07
Chapter6:Bioinformatics • Databases:Sequence and structural • Sequence analysis (homology):Pair wise and Multiple Sequence alignment-BLAST, CLUSTALW, Sequence alignment-FASTA. • Scope and applications of Bioinformatics.	07
Unit-IV	**14**
Chapter7:BiostatisticsI • Measures of central tendency: Mean, Median, Mode. • Data summarizing: Frequency distribution, Graphical presentation - bar diagram, pie diagram, histogram. • Elementary idea of probability and its applications.	07
Chapter8:BiostatisticsII • Measures of dispersion: Range, Standard Deviation, Variance. • Correlation and Regression. • Tests of significance-test,ANOVA,t-test and Chisquare test.	07

Topics Suggested for Assignment/Formative Assessment:

1. Q/A, Short Question, Quiz, MCQ, Assignment etc.

Recommended Books:

1. Primrose & Twyman.Principles of Genome Analysis and Genomics. Blackwell (2003).
2. Hartl&Jones.Genetics: principles&AnalsysisofGenes&Genomes.Jones&Bartlett (1998).
3. Sambrook*etal*.Molecular Cloning Vols I, II, III.CSHL (2001).
4. Primrose.Molecular Biotechnology.Panima (2001).
5. Clark & Switzer.Experimental Biochemistry.Freeman (2000)
6. Sudbery.Human Molecular Genetics. Prentice-Hall (2002).
7. Wilson.ClinicalGenetics-AShort Course, Wiley (2000).
8. Pasternak. An Introduction to Molecular Human Genetics.Fritzgerald (2000).
9. Biostatistical Analysis (Fourth Edition) by Jerrold H.Zarr,Pearson Education Inc.,Delhi.

10. Statistical Methods (Eighth Edition) by G. W. Snecdecor and W.G. Cochran, Willey Blackwell
11. Biostatistics (Tenth Edition) by W.W.Danieland C. L.Cross,Wiley
12. Introductory Biological Statistics (Fourth Edition) by John E. Havel, Raymond E.Hampton and Scott J.Meiners
13. Westheadetal Bioinformatics:InstantNotes.VivaBooks (2003)
14. Genetic engineering:Sandhya Mitra BITS,Pilani
15. Principles of Biostatistics Khan and Khan am
16. Transgenic animals:Ranga

Web Sources:

Semester: IV

Course Lab Content

Course Title: **Gene Technology, Immunology and Computational Biology**	CourseCredits:**02**
Course Type: **Minor Discipline Core Practical, L-T-P:0-0-4**	CorseCode:DSCC5ZOOP4
Total Contact Hours: **56**	DurationofESA:4**Hours**
Formative Assessment Marks:**25**	Summative Assessment Marks: **25**

Course Outcomes (COs):

At the end of the course the student should be able to:

1. Accurately, safely and appropriately use all the equipment regularly used in Molecular Biology (DNA manipulation, including balances, pipettes, electrophoresis and centrifuges).
2. Prepare chemical solution and reagents to the precision appropriate to the task.
3. Demonstrate knowledge of the biochemical basis underpinning the molecular biology techniques.

Lab IV Course Content

List of labs to be conducted	Hours 56
1. Calculate the mean, median, mode and standard deviation (Measurement of pre and post clitellar lengths (with suitable examples).	2 2
2. Measure the height and weight of all students in the class and apply statistical measures.	1
3. Determination of ABO Blood group and Rh factor.	1
4. To study Restriction enzyme digestion using teaching kits (Demonstration only).	2
5. To detect genetic mutations by Polymerase Chain Reaction (PCR) using teaching kits (Demonstration only).	2
6. Demonstration of agarose gel electrophoresis for detection of DNA.	
7. Demonstration of Polyacrylamide Gel Electrophoresis (PAGE) for detection of proteins.	1
8. To calculate molecular weight of unknown DNA and protein fragments from gel pictures.(https://youtube/mCiCiO0cfbg)	1
9. To learn nucleotide sequence database.	1
10. To learn sequence alignment: Pairwise alignment (Protein/DNA).	1

Open Elective Course Content

Semester: IV Zoology

Course Title: **Animal Behaviour** CourseCode:**OEC5ZOOT4**	CourseCredits:**3**
TotalContactHours**:42**	DurationofESA:2Hours
Formative Assessment Marks: **40**	SummativeAssessmentMarks:**60**
Model Syllabus Authors:	

Course Outcomes (COs):

At the end of the course the students will be able to:

1. Examine and critically to evaluate the emergence of ideas that have shaped how we observe and collect data on animal behavior.
2. Understandthemainhistoricalideasthatunderpinanimalbehaviourtheory
3. Critically review hypotheses to explain animal behavior
4. Understand different methods for collecting data on animal behaviour
5. Have advanced their written and oral presentation skills.

Course Content

Content	42Hrs
Unit– 1	
Chapter1.: Introduction to Animal Behaviour • Brief contributions of Karl Von Frish, Ivan Pavlov, Konrad Lorenz, NikoTinbergen. • Proximate and ultimate causes of behaviour. **Chapter2.PatternsofBehaviour** • Stereotyped Behaviors- Orientation and Reflex. • Individual Behavioural patterns: Instinct and Learned Behaviour • Associative learning, classical and operant conditioning, Habituation, Imprinting.	**14**
Unit–2	**14**
Chapter3.SocialBehaviour: • Social organization in termites and honeybees. • Social behaviour: Altruism. • Conflict behaviour. **Chapter4.SexualBehaviour** • Sexual dimorphism, Mate choice in peacock. • Intra-sexual selection (male rivalry in red deer). • Kinship theory: Relatedness & inclusive fitness. • Parental care in fishes (Nest Building & cost benefit)	
Unit– 3	**14**

Chapter5.Chronobiology • Brief historical developments in chronobiology. • Adaptive significance of biological clocks. • Biological Rhythms **Chapter6:Communicationsinanimals** • Bioluminescence in deep sea fishes and insects • Territoriality in Monkeys and Dogs • Role of pheromones in animal communication- Insects and Vertebrates, • Communication in Honeybees (Waggle Dance)	

Suggested Readings:

1. Animal Behaviour by Drickamar.
2. John Alcock, Animal Behaviour, Sinauer Associate Inc., USA.
3. Paul W. Sherman and John Alcock, Exploring Animal Behavior, Sinauer Associate Inc.,Massachusetts,USA.
4. Chronobiology Biological Timekeeping: Jay. C. Dunlap, Jennifer. J. Loros, Patricia J. DeCoursey(ed).2004, Sinauer Associates, Inc.Publishers, Sunderland,MA,USA
5. Insect Clocks D.S. Saunders, C.G.H. Steel, X., Afopoulou (ed.) R.D. Lewis. (3rdEd) 2002 Barens and Noble Inc. New York, USA
6. Biological Rhythms: Vinod Kumar (2002) Narosa Publishing House, Delhi/Springer-Verlag, Germany.

Course pattern and scheme of examination for B.Sc. / B.Sc. (Hons.)
As per NEP (2021-22 onwards)
Subject: ZOOLOGY

SL No.	Semester	Title of the paper	Teaching hours	Hours /week		Examination Pattern Max. & Min. Marks / Paper						Duration of Exam(hours)		Total Marks/paper	Credits	
						Theory			Practical							
				Theory	Practical	Max.	MIN.	IA	Max.	MIN.	IA	Theory	Practical		Theory	Practical
1	I	**CORE subject**	56	4	4	60	21	40	25	9	25	2	4	150	2	4
		Open elective	42	3	-	60	21	40	-	-	-	2	-	100	2	-
		Skill Enhancement Course	56	-	4	-	-	-	25	9	25	3	3	50	-	2
2	II	**CORE subject**	56	4	4	60	21	40	25	9	25	2	4	150	2	4
		Open elective	42	3	-	60	21	40	-	-	-	2	-	100	2	-
		Skill Enhancement Course	56	-	4	-	-	-	25	9	25	3	3	50	-	2

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM/COURSE STRUCTURE AND SYLLABUS

As per the Choice Based Credit System (CBCS) designed in accordance with Learning Outcomes-Based Curriculum Framework (LOCF) of National Education Policy (NEP) 2020

For

Bachelor of Science

Zoology – V and VI Semester

w.e.f.

Academic Year 2023-24 and onwards

RANI CHANNAMMA UNIVERSITY,BELAGAVI

B.Sc. in Zoology Effective from 2023-24

Sem.	Type of Course	Theory/ Practical	Course Code	CourseTitle	Instruction hour/ week	Total hours /sem	Duration of Exam	Marks			Credits
								Formative	Summative	Total	
V	DSCC-9	Theory	21BSC5C5ZOO5L	Non-Chordates and Economic Zoology	04hrs	56	02 hrs	40	60	100	04
	DSCC-10	Practical	21BSC5C5ZOO5P	Non-Chordates and Economic Zoology	04 hrs	56	03 hrs	25	25	50	02
	DSCC-11	Theory	21BSC5C6ZOO6L	Chordates and Comparative Anatomy	04hrs	56	02 hrs	40	60	100	04
	DSCC-12	Practical	21BSC5C6ZOO6P	Chordates and Comparative Anatomy	04 hrs	56	03 hrs	25	25	50	02
	Other subject										04
	Other subject										02
	Other subject										04
	Other subject										02
	SEC-3	Practical		The Bee Keeping	04hrs	56	03 hrs	25	25	50	02
	Total										**26**
VI	DSCC-13	Theory	21BSC6C7ZOO7L	Evolutionary and Developmental Biology	04hrs	56	02 hrs	40	60	100	04
	DSCC-4	Practical	21BSC6C7ZOO7P	Evolutionary and Developmental Biology	04 hrs	56	03 hrs	25	25	50	02
	DSCC-15	Theory	21BSC6C8ZOO8L	Environmental Biology, Wildlife Management and Conservation	04hrs	56	02 hrs	40	60	100	04
	DSCC-16	Practical	21BSC6C8ZOO8P	Environmental Biology, Wildlife Management and Conservation	04 hrs	56	03 hrs	25	25	50	02
	Other subject										04
	Other subject										02
	Other subject										04
	Other subject										02
	Internship-1	Practical		Internship				50	0	50	02
	Total										**26**

B.Sc. Semester – V

Discipline Specific Course (DSC)-9

Course Title: Non-Chordates and Economic Zoology (Theory)Course Code: 21BSC5C5ZOO5L

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSCC-9	**Theory**	**04**	**04**	**56 hrs**	**2hrs**	**40**	**60**	**100**

Course Outcomes (COs):At the end of the course students will be able to:

CO1: Understand the evolutionary history and diversity of non-chordates

CO2: Study the external and internal characters of non-chordates

CO3: Expose type, structural and functional organization of non-chordates

CO4: Group the animals on the basis of their morphological characteristics.

CO 5: Understand the economic importance of non-chordates

Units	**DSCC-9:** **Course Title: Non-Chordates and Economic Zoology –Theory (Code: 035 ZOO 011)**	**56.hrs/ sem**
Unit- I	**Phylum Protozoa:** General characters and classification up to classes; Locomotory organelles and locomotion in Protozoa. Type study: Paramecium (Morphology and Reproduction) **Phylum Porifera:** General characters and classification upto classes; Canal System in poriferans. Type study: Sycon (Morphology and Reproduction) **Phylum Cnidaria:** General characters and classification upto classes; Polymorphism in Physalia. Type study: Obelia (Morphology and Reproduction) **Ctenophora:** Salient features	14
Unit- II	**Phylum Platyhelminthes:** General characters and classification upto classes; Parasitic adaptations (morphological and physiological). Type study: Taenia (Tape worm)- (Morphology and Reproduction) **Phylum Nemathelminthes:** General characters and classification upto classes; Transmission, pathogenicity and preventive measures of Ascarisasis. Type study: Ascaris (Round worm)- (Morphology and Reproduction) **Phylum Annelida** General characters and classification upto classes; Metamerism in Annelida and external morphology of Leech. Type study: Hirudinaria (Leech) - (Morphology and Reproduction)	14

Unit- III	**Phylum Arthropoda** General characters and classification upto classes; Metamorphosis in Insects and economic importance insects. Type study: Palaemon (Prawn) - (Morphology, Appendages, Nervous system and Reproduction). **Phylum Mollusca** General characters and classification upto classes; Torsion in gastropods, Pearl	14
	formation. Type study: Pila (morphology, shell, respiration, nervous system and Reproduction) **Phylum Echinodermata** **General characters and classification upto classes; Water-vascular system in Asteroidea. Type study: Pentacerous (Morphology and Reproduction)**	
Unit- IV	**Economic Zoology:** **Pests: Life cycle and their control of following pests: Gundhi bug, Leaf hopper.** **Vectors: Prevention and control of Termites and Mosquitoes** **Economic Zoology: Economic importance of Lac Culture, Vermiculture and Sericulture.**	14

References:

1. Barnes, R.S.K.; Calow,P.; Olive,P.J.W.; Golding,D.W.; Spicer, J.I.(2002) The Invertebrates: Synthesis,BlackwellPublishing.

2. Hickman,C.; Roberts,L.S.; Keen,S.L.; Larson, A. and Eisenhour, D. (2018) Animal Diversity, McGraw-Hill.

3. Holland, P.(2011) The Animal Kingdom: A Very Short Introduction, Oxford University Press.

4. Kardong, K.V.(2006) Vertebrates: Comparative Anatomy, Function, Evolution (4thedition), McGraw-Hill.

5. Barrington, E.J.W. (1979) Invertebrate Structure and Functions. II Edition. E.L.B.S. and Nelson.

6. Boradale, L.A. and Potts, E.A. (1961) Invertebrates: A Manual for the use of Students. Asia

7. Bushbaum, R.(1964)Animals without Back bones.University of Chicago Press

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Quiz/ Assignment/ Small Project	10
Seminar	10
Total	**40 Marks**
Formative Assessment as per guidelines.	

B.Sc. Semester – V

Discipline Specific Course (DSCC)-10

Course Title: Non-Chordates and Economic Zoology (Practical)

CourseCode: 21BSC5C5ZOO5P

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSCC-10	**Practical**	**02**	**04**	**56 hrs**	**3hrs**	**25**	**25**	**50**

Course Outcomes (COs):At the end of the course, students will be able to:CO 1:

Understand basics of classification of non-chordates.

CO 2: Learn and understand the internal systems of non-chordates.

CO 3: Develop the skills to identify different classes and species of animals.

CO 4: Know uniqueness of a particular animal and economic importance of non-chordates.

CO 5: Enhancement of basic laboratory skill like keen observation and drawing.

CO 6: Study the useful and harmful non-chordates

Expt. No.	**DSCC-10:** **Course Title: Non-Chordates and Economic Zoology –Practical (Code: 035 ZOO 012)**	**56.hrs/ sem**
1	Preparation and observation of protozoan culture. **Protozoa**: Systematics of *Amoeba*, *Euglena*, *Noctiluca*, *Paramecium* and *Vorticella* (Permanent slides/ Charts).	4
2	**Porifera:** Systematics of *Sycon, Euplectella, Hyalonema, Spongilla* and *Euspongia* T.S of *Sycon*, Spicules and Gemmules (Specimens/ Permanent slides/ Charts)	4
3	**Cnidaria:** Systematics of *Aurelia* and *Metridium* (Specimens). Slides/Charts of *Hydra*, *Obelia* - polyp and medusa, and *Ephyra* larva, T.S. of *Metridium* passing through mesenteries. **Study of Corals**- *Astraea, Fungia, Meandrina, Corallium, Gorgonia, Millepora* and *Pennatula.*	4
4	**Helminthes:** Systematics of *Planaria*, *Fasciola hepatica* and *Taenia solium*, Ascaris- Male and female (Specimens/Charts). Slides/Charts of T.S. of *Planaria*, T.S. of male and female Ascaris.	4
5	**Annelida:** Systematics of *Nereis, Heteronereis, Sabella, Aphrodite* (Specimens/Charts). Slide/Chart of T.S. of earthworm through typhlosole.	4
6	**Arthropoda**: Systematics of *Panaeus, Palaemon, Astracus*, Scorpion, Spider, *Limulus, Peripatus, Millipede, Centipede,* Praying mantis, Termite Queen, Moth, Butterfly, Dung beetle /Rhinocerous beetle (Any six specimens). Slide/Chart of Larvae- Nauplius, Zoea, Mysis.	6

7	**Mollusca:** Systematics of *Chiton, Mytilus, Aplysia, Pila, Octopus, Sepia* (Specimens) and Glochidium larva (Slide/Chart). **Shell Pattern**- *Unio, Ostrea, Cypria, Murex, Nautilus, Patella, Dentalium,* Cuttle bone	4
8	**Echinodermata**: Systematics of Sea star, Brittle star, Sea Urchin, Sea Cucumber, Sea lilly (Specimens/Charts). Slides/Charts of Bipinnaria larva, Echinopluteusl arva and Pedicellaria.	4
9	**Harmful Non-chordates:** Soil Nematodes, Agricultural, Veterinary and Human pests (Ticks, Mites and Bugs).	4
10	**Beneficial Non-chordates:** **Sericulture:** Life cycle of *Bombyx mori*, Types of silk **Vermiculture**: Earthworm species used in Vermiculture and Vermicomposting,Vermi products	6
11	**Virtual Dissection/Cultured specimens:** Earthworm –Nervous system, Leech-Digestive system	6
12	**Virtual Dissection/Cultured specimens:** Prawn-Nervous system. Cockroach-Salivary apparatus and Digestive system.	6
13	Any other practical's related to this paper may be added based on the feasibility	

Scheme of Practical Examination (distribution of marks): 25 Marks for Semester end Examination

1. Perform all the experiments as per the instructions in each question

Semester end Examination for Practical	
Assessment	**Distribution of Marks**
1. Major Experiments	**08**
2. Minor Experiments	**05**
3.Identifications (A-D)	**08**
4. Viva	**02**
5. Journal	**02**
Total	**25 Marks**

Note: Same Scheme may be used for IA (Formative Assessment) examination for 25 marks

B.Sc. Semester – V

Discipline Specific Course (DSCC)-11

Course Title: Chordates and Comparative Anatomy (Theory)

Course Code: 21BSC5C6ZOO6L

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSCC-11	**Theory**	**04**	**04**	**56 hrs**	**2hrs**	**40**	**60**	**100**

Course Outcomes (COs):At the end of the course, students will be able to: CO1:

Understand the basic concept, diversity and classification of ChordatesCO2:

Demonstrate comprehensive identification abilities of chordate diversity CO3:

Understand evolutionary relationship amongst all chordates

CO4: Understand the external morphology and sexual dimorphism in chordates.

CO5: Understand arrangement of endoskeleton of vertebrates.

CO6: Know the comparative anatomy of various systems, adaptations, physiological mechanisms of vertebrates.

Units	**DSCC-11:** **Course Title: Chordates and Comparative Anatomy-Theory (Code:035 ZOO 013)**	**56.hrs/ sem**
Unit-I	**Chordates:** Origin of Chordates; Basic characters of chordates and classification upto classes. **Protochordates:** General features and phylogeny of Protochordata, Classification of Protochordates: **Hemichordata:** Type Study: Balanoglossus- Habit and Habitat, Morphology, Coelom. Tornaria larva and its affinities. **Urochordata:** Type Study: *Herdmania*- Habit and Habitat, Morphology, Ascidian tadpole-structure and its retrogressive metamorphosis. **Cephalochordata:** Type Study: *Branchiostoma* (*Amphioxus*)-Habit and habitat, Morphology, Digestive system, Feeding mechanism, excretory and circulatory system. **Agnatha:** General characters of Agnatha and classification upto classes. Salient features of Cyclostomata and Ostracodermi with examples. Ammocoete larva and its significance.	14
Unit-II	**Vertebrates:** General characters and Classification of different classes of vertebrates (Pisces - Chondrichthyes and Osteichthyes, Amphibia, Reptilia, Aves, Mammalia) upto the orders with five characters for each order citing examples.	14

Unit-III	**Pisces:** Osmoregulation, migration and swim bladder in fishes. Types of caudal fins, scales in fishes. **Amphibia:** Origin of Amphibia, Parental care and Neoteny in Amphibia, **Reptilia:** Adaptive radiation in extinct reptiles with suitable examples. Temporal fossae in reptiles. Poisonous and non-poisonous snakes, biting mechanism in snakes, types of venom. **Aves:** Flightless birds and their distribution, Major types of beaks. Kinds of migration in birds. Flight adaptations in birds. **Mammals:** Distribution of Prototheria and Metatheria with examples. Dentition in mammals and evolution of molar tooth. Adaptive radiation in mammals.	14

Unit-IV	**Comparative Anatomy of Vertebrates:** **Integumentary System:** Structure of skin and its derivatives. **Skeletal System:** Comparative account of Axial (Skull) and Appendicular (girdles) Skeletal system in Amphibians (Frog), Reptiles (Calotes), Aves (Pigeon) and Mammals (Rabbit). Comparative account of **Digestive system** (digestive glands and alimentary canal), **Respiratory System** (gills, lungs, air sacs, swim bladder) **Circulatory System** (heart and aortic arches) and **Nervous system** (brain) in Pisces (Scoliodon), Amphibians (Frog), Reptiles (Calotes), Aves (Pigeon) and Mammals (Man). **Excretory System:** Succession of vertebrate kidney and Evolution of urino-genital ducts in vertebrates	14

References:

1. Colbert*et al*: Colbert's Evolution of the Vertebrates: A history of the back boned animals through time. (5thed2002, Wiley–Liss).

2. Hildebrand:Analysis of Vertebrate Structure(4thed1995,JohnWiley)

3. Kenneth V.Kardong (20015) Vertebrates:Comparative Anatomy, Function, Evolution Mc Graw Hill

4. Mc Farland *et al.*,:Vertebrate Life (1979,Macmillanpublishing)

5. Parker and Haswell: Text Book of Zoology, Vol. II(1978,ELBS)

6. Romer and Parsons:The Vertebrate Body (6thed1986, CBS Publishing, Japan)

7.Young:The Life of Vertebrates (3rded 2006,ELBS/Oxford)

8. Weichert C.K. and William Presch(1970).Elements of Chordate Anatomy, Tata Mc Graw Hills

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Quiz/ Assignment/ Small Project	10
Seminar	10
Total	**40 Marks**
Formative Assessment as per guidelines.	

B.Sc. Semester – V

Discipline Specific Course (DSCC)-12

Course Title: Chordates and Comparative Anatomy (Practical)

CourseCode: 21BSC5C6ZOO6P

Type of Course	Theory / Practical	Credits		Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSCC-12	**Practical**	**02**		**04**	**56 hrs**	**3hrs**	**25**	**25**	**50**

Course Outcomes (COs):At the end of the course, students will be able to:CO

1: Understand the external morphology of proto-chordates and chordates CO

2: Study the cartilaginous, bony and ornamental fishes

CO 3: Understand the systematic position and classification of Chordates

CO 4: Study the comparative anatomy and internal systems of vertebrates

CO 5: Understand the beak and foot modifications in birds.

Expt. No.	DSCC-12: Course Title: Chordates and Comparative Anatomy –Practical (Code:035 ZOO 014)	56.hrs/ sem
1	**Protochordata**: Balanoglossus and T. S through proboscis Ascidian/*Herdmania* and *Amphioxus*, T.S. of *Amphioxus* through pharynx and intestine. **Cyclostomata:** *Petromyzon*, *Myxine.* Ammocoete larva	04
2	**Pisces**: Cartilaginous fishes – *Narcine, Trygon, Pristis, Myolobaties, Scolidion*.(Any four) Bony fishes– Zebrafish, Hippocampus, Muraena, Ostracion, Tetradon, Pleuronectus, Diodon, Echeneis. (Any six).	05
3	**Ornamental fishes:** Siamese, Koi, Oscar, Betta Sp., Neon tetra, Guppies, Goldfish, Angle fish, Rainbow fish, Mollies (Any four). **Accessory respiratory organs**– *Saccobranchus, Clarias* and *Anabas.*	04
4	**Amphibia**: *Rana, Bufo, Ambystoma, Axolotl larva, Necturus and Ichthyophis.*	04
5	**Reptilia**: Turtle, Tortoise, *Mabuya, Calotes*, Chameleon, *Varanus*. **Snakes**–Dryophis, Ratsnake, Brahmini, Cobra, Krait, Russell's viper and Hydrophis.	04
6	**Aves:** Beak and feet modifications in the following examples: Duck, Crow, Sparrow, Parrot, Kingfisher, Eagle or Hawk. **Mammalia**: Mongoose, Squirrel, Pangolin, Hedge Hog, Rat and Loris, Platypus, Echidna.	05
7	**Virtual Dissection/Cultured specimens:** Shark/Bony fish: Afferent and efferent branchial systems, glosso-pharyngeal and vagus nerves.	05
8	**Virtual Dissection/Cultured specimens:** Rat: Dissection (only demonstration)– Circulatory system (Arterial and Venous), Urinogenital system.	05
9	**Comparative account of skeletal system:** Skull, vertebrae, girdles and limb bones of Shark, Frog, Calotes, Pigeon and Rabbit	05
10	**Comparative account** of skin in Shark, Frog, Calotes, Pigeon and Man.	05

11	**Comparative account** of heart in Shark, Frog, Calotes, Pigeon and Man.	05
12	**Comparative account** of brain in Shark, Frog, Calotes, Pigeon and Man.	05
13	Any other practical's related to this paper may be added based on the feasibility	

Scheme of Practical Examination (distribution of marks): 25 Marks for Semester end Examination

1. Perform all the experiments as per the instructions in each question

Semester end Examination for Practical	
Assessment	**Distribution of Marks**
1. Major Experiments	**08**
2. Minor Experiments	**05**
3.Identifications (A-D)	**08**
4. Viva	**02**
5. Journal	**02**
Total	**25 Marks**

Note: Same Scheme may be used for IA (Formative Assessment) examination for 25 marks

B.Sc. Semester – V
Skill Enhancement Course: SEC-3
Course Title: The Bee Keeping (Practical)Course Code:

Type of Course	Theory / Practical	Credits	Instruction hour/ week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
SEC-3	**Practical**	**02**	**04**	**56 hrs**	**3hrs**	**25**	**25**	**50**

Course Outcomes (COs):At the end of the course students will be able to:

CO 1: Explain what the prerequisite to get started in beekeeping

CO 2: Discuss the responsibilities of urban beekeepers.

CO 3: Identify where to purchase equipment and demonstrate how to assemble it.

CO 4: Name and identify major parts of the honeybee such as mouth parts, sting apparatus and mandibular parts.

CO5: Describe bee biology and anatomy from the perspective of managing bees.

CO 6: Describe the importance and usage of honey and bee wax.

Expt. No.	**SEC-3:** **Course Title: The Bee Keeping-Practical (Code:035 ZOO 061)**	**56.hrs/ sem**
1	Study of general characters and anatomy of honey bee	6
2	Systematic position and classification of honey bee	2
3	Study of life cycle of honey bee	4
4	Mounting of mouth parts/sting apparatus of honey bee	4
5	Study of castes in honey bees	4
6	Identification of honey bee species	4
7	Study of social organization in honey bees	4
8	Requirements of bee keeping: Hive, Protective gear, smoker, hive tool and other equipments (Charts)	4
9	Study of honey bee by-products and their uses (Charts)	4
10	Study of diseases of honeybees (Charts)	4
11	Study of pests of honeybees (Charts)	4
12	Field study/Project report on nearby Apiary/bee keeping unit and submit a report	12
13	Any other practical's related to this paper may be added based on the feasibility	

References:

1. Abrol , D. P. (1997) Bees and Beekeeping. Kalyani Publisher, New Delhi. 173
2. Abrol, D. P. (2010) A Comprehensive guide to Bees and Beekeeping. Scientific Publisher, New Delhi.
3. Withhead, S. B. (2010) Honey bees and their management Axis books Publisher, Jodhpur.
4. Nagaraja, N. and Rajagopal, D. (2013) Honey bees: Diseases, Parasites, Pests, Predator and their management. M.J.P Publisher, Chennai.
5. Dharamsing and Singh, D. P. A Handbook of Beekeeping, Agrobios India (Publisher), Jodhpur.
6. Prost, P. J. Apiculture. Oxford and IBH, New Delhi.
7. Bisht D.S. Apiculture, ICAR Publication.
8. Bisht, D.S. Agricultural Development in India, Anmol Pub. Pvt. Ltd.
9. Singh S. Beekeeping in India, Indian council of Agricultural Research, New Delhi
10. Mehrotra, K.N. Bisht, D.S. Twenty-five years of apiculture research at IARI.

Scheme of Practical Examination (distribution of marks): 25 Marks for Semester end Examination

1. Perform all the experiments as per the instructions in each question

Semester end Examination for Practical	
Assessment	**Distribution of Marks**
1. Major Experiments	**06**
2. Minor Experiments	**04**
3.Identifications (A-C)	06
4. Viva	**02**
5. Journal	**02**
6. Field visit report	**05**
Total	**25 Marks**

Note: Same Scheme may be used for IA (Formative Assessment) examination for 25 marks

B.Sc. Semester – VI
Discipline Specific Course (DSCC)-13
Course Title: Evolutionary and Developmental Biology (Theory)
CourseCode: 21BSC6C7ZOO7L

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSCC-13	**Theory**	**04**	**04**	**56 hrs**	**2hrs**	**40**	**60**	**100**

Course Outcomes (COs):At the end of the course students will be able to:

CO 1: Understand that by biological evolution we mean that many of the organisms that inhabit the earth today are different from those that inhabited it in the past.

CO 2: Understand that natural selection is one of several processes that can bring about evolution, although it can also promote stability rather than change.

CO 3: Understand how the single cell formed at fertilization forms an embryo and then a full adult organism.

CO 4: Integrate genetics, molecular biology, biochemistry, cell biology, anatomy and physiology during embryonic development.

CO 5: Understand a variety of interacting processes, which generate an organism's heterogeneous shapes, size, and structural features.

Units	**DSCC-13:** **Course Title: Evolutionary and Developmental Biology-Theory (Code:036ZOO 011)**	**56.hrs/ sem**
Unit- I	Origin of Life and theories**;** Historical review of evolutionary concept. **Theories of Evolution:** Lamarckism, Darwinism (Natural, Sexual and Artificial selection), Mutation Theory of Evolution (Hugo de Vries) and Neo- Darwinism (Synthetic theory of evolution, gene mutation, gene flow, genetic drift, Hardy-Weinberg equilibrium). Adaptive radiations: Patterns of evolution (Divergence, Convergence, Parallel, Co-evolution).	14

Unit- II	**Evidences of Evolution**: Relationship among organisms, Morphological and Anatomical evidences, Embryological evidences, Paleontological evidences, Bio-geographical evidences, Biochemical/Physiological evidences, Cytological evidences, Taxonomical evidences and Current evidences. **Geological Time Scale**/ Stratigraphic Scale. **Species Concept and Extinction**: Concept of species; Modes of speciation: Allopatric and Sympatric species; Mass extinction (Causes, Names of five major extinctions) **Origin and evolution** of Human and Horse.	14

Unit- III	**Introduction to Developmental Biology:** Scope and theories of development biology **Early Embryonic Development:** **Gametogenesis:** Spermatogenesis and oogenesis in mammals. **Fertilization:** external (amphibians), internal (mammals), monospermy and polyspermy; Early development of frog and humans (structure of mature egg and its membranes, patterns of cleavage, fate map, up to formation of gastrula); types of morphogenetic movements; Fate of germ layers; Neurulation in frog embryo.	14
Unit- IV	**Embryonic membranes and early development of Chick:** Development, structure and functions of yolk sac, amnion, chorion and allantois, structure of hen's egg, cleavage, blastula, gastrulation, origin and structure of primitive streak, structure of 18, 24, 36 and 48 hrs chick embryos. **Placenta:** Classification of placenta (morphological and histological) with examples, and functions of placenta. **Modern trends in human reproduction**: In-vitro fertilization, sperm and egg banks, sexually transmitted diseases (AIDS, syphilis and gonorrhea).	14

References:

1. Ridley, M (2004) Evolution (3rd edition) Blackwell Publishing

2. Hall, B.K. and Hallgrimson, B(2008)Evolution(4th edition) Jones and Barlett Publishers

3. Barton, N. H., Briggs, D. E. G., Eisen, J. A., Goldstein, D. B. and Patel, N. H. (2007). Evolution. Cold Spring, Harbour Laboratory Press.

4. Campbell, N. A. and Reece J. B. (2011). Biology. IX Edition, Pearson, Benjamin, Cummings.

5. Douglas, J. Futuyma (1997). Evolutionary Biology. Sinauer Associates.

6. Developmental Biology: T. Subramaniam, (Reprint), Narosa Publishing House Pvt. Ltd., New Delhi

7. Developmental biology: Werner A. Müller, Springer Science & Business Media. (2012).

8. Human Embryology and Developmental Biology E-Book: Bruce M. Carlson, Elsevier Health Sciences.

9. Developmental Biology: Michael J. F. Barresi, Scott F. Gilbert, Oxford University Press. (2019)

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Quiz/ Assignment/ Small Project	10
Seminar	10
Total	**40 Marks**
Formative Assessment as per guidelines.	

B.Sc. Semester – VI

Discipline Specific Course (DSCC)-14

Course Title: Evolutionary and Developmental Biology (Practical)

CourseCode: 21BSC6C7ZOO7P

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSCC-14	**Practical**	**02**	**04**	**56 hrs**	**3hrs**	**25**	**25**	**50**

Course Outcomes (COs):At the end of the course, students will be able to:

CO 1: Explain core features of evolutionary theory and their applications to biological systems.

CO 2: Explain how evolutionary patterns and processes can be inferred using sequence data, the biology of extant organisms, and fossils.

CO 3: Study the process by which organisms grow and develop.

CO 4: Understand the development of multicellular organisms from a single cell zygote.

CO 5: Learn interesting and unique post-embryonic development in other animals.

CO 6: Understand the concept of aging and the relevance of this knowledge in several medical applications.

Expt. No.	DSCC-14: Course Title: Evolutionary and Developmental Biology-Practical (Code:036 ZOO 012)	56.hrs/ sem
1	Study and verification of Hardy-Weinberg Law by chi-square analysis.	3
2	Graphical representation and interpretation of data of height/weight of a sample of 100 humans in relation to their age and sex	3
3	Study of connecting links and fossils (models/pictures); Connecting links/ Living fossils: Neopilina, Peripatus, Limulus, Latimeria, Sphenedon, Archeopteryx and Duck Billed Platypus	3
4	Study of homology and analogy from suitable examples.	3
5	Study of aquatic, arboreal and volant adaptations with suitable examples: Shark, Turtle, Chameleon, Loris, Exocoetus, Bat, Pigeon and Draco	4
6	Vestigial organs: Vermiform appendix, Wisdom teeth, Coccyx (tail bone), Tonsils, Body hairs, Nipples on males, Nictitating membranes of eye (Any three)	4
7	Types of eggs based on quantity and distribution of yolk: Sea urchin, Insect, Frog, Chick.	5
8	Study of development of chick embryo through incubated chick eggs upto 96hrs	6
9	Study of stages of development of Frog: Cleavage stages, Blastula, Gastrula, Neurula stages (whole mount) and various stages of tadpole	6
10	Study of permanent slides of Chick embryo -18 hrs, 24 hrs, 36 hrs, 48 hrs (whole mount and T.S of 18 hrs and 24 hrs chick embryo)	6
11	Evolution of Man and Horse (Charts and models)	6
12	Study of Mesozoic Reptiles (Charts or models);	7

	Study of adaptive radiations in feet of birds and mouth parts in insects with example	
13	Any other practical related to this paper may be added based on the feasibility	

Scheme of Practical Examination (distribution of marks): 25 Marks for Semester end Examination

1. Perform all the experiments as per the instructions in each question

Semester end Examination for Practical	
Assessment	**Distribution of Marks**
1. Major Experiments	**08**
2. Minor Experiments	**05**
3.Identifications (A-D)	**08**
4. Viva	**02**
5. Journal	**02**
Total	**25 Marks**

Note: Same Scheme may be used for IA (Formative Assessment) examination for 25 marks

B.Sc. Semester – VI
Discipline Specific Course (DSCC)-15
Course Title: Environmental Biology, Wildlife Management and Conservation (Theory)
CourseCode: 21BSC6C8ZOO8L

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSCC-15	**Theory**	**04**	**04**	**56 hrs**	**2hrs**	**40**	**60**	**100**

Course Outcomes (COs):At the end of the course, students will be able to:

CO 1: Develop an understanding of how animals interact with each other and their natural environment.

CO 2: Get knowledge about all types of ecosystems, food chains, webs and energy models.

CO 3: Study various types of environmental pollutions

CO 4: Develop the ability to use the fundamental principles of wildlife ecology to solve local, regional and national conservation and management issues.

CO 5: Gain an appreciation for the modern scope of scientific inquiry in the field of wildlife conservation management.

CO 6: Develop an ability to analyze, present and interpret wildlife conservation management information.

Units	**DSCC-15:** **Course Title: Environmental Biology, Wildlife Management and Conservation-Theory (Code:036 ZOO 013)**	**56.hrs/ sem**
Unit I	**Ecology:** Introduction to ecology, Definition, Ecosystem, Types of ecosystem, Food chain and Food web, Trophic levels. **Environment:** Definition, Types of environment, Terrestrial, Aquatic, Desert, Grassland and Aerial environment. **Marine habitat: Z**onation of the sea and ecological classification of marine biota, coastalecology, estuarine ecology and mangroves. **Freshwater habitat**: Lentic and Lotic systems. Ecological classification of fresh water animals **Terrestrial habitat**: A brief account of biomes Ecological adaptations to marine, freshwater and terrestrial habitats.	14
Unit II	**Environmental Pollution:** Definition, types of pollutants, air, soil, water and thermal pollution, ozone layer depletion, biomagnifications, bioaccumulation and bioremediation. Effects of pollution on plants and animals. **Toxicants –** Natural and synthetic toxicants and toxicity measurements. Global warming, Acid rain, Bio-accumulation, Bio-magnification, Eutrophication-Types and its impact.	14

Unit III	**Distribution of Wildlife in India:** The Himalayan ranges, The peninsular India sub-region, Deccan plateau, Western ghats, Eastern hill chain, Aravali ranges, Indian desert, Tropical rain forests, Wildlife in Andaman and Nicobar Islands. **Wild life problems:** Hunting, overharvesting, habitat destruction & degradation, over population, and possibilities of climatic changes.	14
Unit IV	**Wildlife Management and Conservation:** In-situ and ex-situ conservation methods; Wildlife sanctuaries, National parks, Biosphere reserves, Project Tiger, Project Elephant, Project Lion, Zoological Gardens, Habitat preservation and Captive breeding. Wildlife Protection Act, 1972, Causes and depletion of Wildlife, General strategies and issues, Concept of home range and territory, Animal census, Tracing movement and Remote sensing and GIS.	` 14

References:

1. Colinvaux,P.A.(1993) Ecology (2nd edition) Wiley, John and Sons,Inc.
2. Krebs,C.J.(2001) Ecology (6th edition) Benjamin Cummings.
3. Odum,E.P.,(2008)Fundamentals of Ecology. Indian Edition. Brooks/Cole. (3rd Edition) Blackwell Sci.
4. Kendeigh, FC.(1984) Ecology with Special Reference to Animal and Man. Prentice HallInc.
5. Caughley,G.,and Sinclair,A.R.E.(1994)Wildlife Ecology and Management. Blackwell Science.
6. Woodroffe,R.,Thirgood,S.and Rabinowitz,A.(2005) People and Wildlife, Conflict or Co-existence? Cambridge University.
7. Bookhout,T.A.(1996) Research and Management Techniques for Wildlife and habitats(5th edition) The Wildlife Society,Allen Press.
8. Sutherland,W.J.(2000)The Conservation Handbook: Research, Management and Policy. Blackwell Sciences
9. Hunter M.L.,Gibbs, J.B.and Sterling, E.J.(2008) Problem solving in Conservation Biology and Wildlife Management: Exercises for Class, Field, and Laboratory. Blackwell Publishing

Formative Assessment for Theory	
Assessment Occasion/ type	**Marks**
Internal Assessment Test 1	10
Internal Assessment Test 2	10
Quiz/ Assignment/ Small Project	10
Seminar	10
Total	**40 Marks**
Formative Assessment as per guidelines.	

B.Sc. Semester – VI
Discipline Specific Course (DSCC)-16
Course Title: Environmental Biology, Wildlife Management and Conservation (Practical)
CourseCode: 21BSC6C8ZOO8P

Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
DSCC-16	**Practical**	**02**	**04**	**56 hrs**	**3hrs**	**25**	**25**	**50**

Course Outcomes (COs):At the end of the course, students will be able to:

CO 1: Understand the basic concepts of environmental sciences, ecosystems, natural resources, population, environment and society

CO 2: Understand the basic concepts of toxicology, their impact on human health and remedial measures

CO 3: Provide understanding and knowledge on modern concepts in wildlife management and relevant conservation policies and legislation and their enforcement mechanism at Global and Local Level,

CO 4: Understand the scientific approach to wildlife management and planning.

CO 5: Develop scientific skills for resolving human wildlife conflict including capture, handling, care and management of wild animals.

Expt. No.	**DSCC-16:** **Course Title: Environmental Biology, Wildlife Management and Conservation-Practical (Code: 036 ZOO 014)**	**56.hrs/ sem**
1	Collection of water sample and analysis of physical parameters of water: Temperature, pH, Electrical Conductivity.	4
2	Estimation of chemical parameters of water: Dissolved Oxygen (O_2), Carbon Dioxide (CO_2), Hardness, Chloride, Alkalinity, Total dissolved solids (TDS).	6
3	Analysis of physical parameters of soil: pH, EC, Soil moisture, Soil temperature	2
4	Determination of organic matter in the soil sample	4
5	Study of tropical pond as an ecosystem: Study of flora and fauna and interaction between the various constituents using charts.	4
6	Analysis of air pollution: Air monitoring for particulate matter	4
7	Collection, preservation and estimation of zooplanktons	4
8	Study of threatened animals of India (charts/models/pictures): Tiger, Lion, one horned Rhinoceros, Golden langur, Lion tailed monkey, Musk deer, Kashmir stag, Great Indian horn bill and Indian rock python.	4
9	Location of Tiger reserves, National parks, Biosphere reserves, Wildlife sanctuaries of India on Map.	4

10	Demonstration of field equipments used in Wildlife census: Compass, Binoculars, Spotting scope, Range finders, Global Positioning System, Various types of cameras and lenses.	4
11	Identification wild animals: Wild animal's pugmarks, hoof marks scats, pellet groups, nest, antlers. Demonstration of field techniques for wild flora and fauna.	4
12	Visit to Zoo/ Sanctuaries/ National parks/ Biosphere reserves	12
13	Any other practical's related to this paper may be added based on the feasibility	

Scheme of Practical Examination (distribution of marks): 25 Marks for Semester end Examination

1. Perform all the experiments as per the instructions in each question

Semester end Examination for Practical	
Assessment	**Distribution of Marks**
1. Major Experiments	**08**
2. Minor Experiments	**05**
3.Identifications (A-D)	**08**
4. Viva	**02**
5. Journal	**02**
Total	**25 Marks**

Note: Same Scheme may be used for IA (Formative Assessment) examination for 25 marks

B.Sc. Semester – VI
INTERNSHIP

Course Title: Internship (Practical)CourseCode:

Type ofCourse	Theory / Practical	Credits	Instruction hour/ week	Total No. of Lectures/Hours / Semester	Durationof Exam	Formative Assessment Marks	Summative assessment Marks	Total Marks
Internship	**Practical**	**02**	**04**	**56 hrs.**	**-**	**50**	**0**	**50**

Course Outcomes (COs):At the end of the course students will be able to:

CO 1: Explore career alternatives prior to graduation and Integrate theory and practice

CO 2: Assess interests and abilities in their field of study/ research.

CO 3: Develop work habits and attitudes necessary for job success

CO 4: Build a record of work experience

CO 5: Identify, write down, and carry out performance objectives related to the job assignment

Expt. No.	**Internship:** **Course Title: Internship-Practical (Code: 036 ZOO 091)**	**56.hrs/ sem**
1	Small Laboratory Research Projects related to Zoology **OR**	56
2	Field Study Report: Survey of animal biodiversity nearby villages/ ecosystem **OR**	
3	Survey of insect vectors/ animal diseases/human diseases/blood groups etc. **OR**	
4	Any other work related to this paper may be added based on the feasibility	

Formative Assessment for Practical	
Assessment	**Distribution of Marks**
Project / Survey work / Field Study Report submission	25
Internal marks based on the performance of work by mentor	10
Presentation of work	15
Total	**50 Marks**
Formative Assessment as per guidelines.	

Internship:

A course requiring students to participate in a professional activity or work experience, or cooperative education activity with an entity external to the education institution, normally under the supervision of an expert of the given external entity. A key aspect of the internship is induction into actual work situations for 2 credits. Internships involve working with local industry, local governments (such as panchayats, municipalities) or private organizations, business organizations, artists, crafts persons, and similar entities to provide opportunities for students to actively engage in on-site experiential learning.

Note:

1. 1 credit internship is equal to 30hrs on field experience.
2. Internship shall be Discipline Specific of 45-60 hours (2 credits) with duration 1-2 weeks.
3. Internship may be full-time/part-time (full-time during last 1-2 weeks before closure of the semester or weekly 4 hrs in the academic session for 13-14 weeks).
4. College shall decide the suitable method for programme wise but not subject wise.
5. Internship mentor/supervisor shall avail work allotment during 6^{th} semester for a maximum of 20 hours.
6. The student should submit the final internship report (45-60 hours of Internship) to the mentor for completion of the internship.
7. Method of evaluation: Presentations/Report submission/Activity etc.

UG programme: 2023-24

GENERAL PATTERN OF THEORY QUESTION COURSE FOR DSCC/ OEC

(60 Marks for Semester End Examination with 2 Hrs duration)

a. **Answer any six Questions from Question I**
b. **Answer any Three questions from II, III, IV andV**

Q.No.I	**Answer any six Questions (Two question from Each Unit)** **1.** **2.** **3.** **4,** **5.** **6.** **7.** **8.**	**2X6=12**
Q.No.II	**(Should cover Entire Unit-I)** **9.** **10.** **11.** **12.**	**4X3=12**
Q.No.III	**(Should cover Entire Unit-II)** **13.** **14.** **15.** **16.**	**4X3=12**
Q.No.IV	**(Should cover Entire Unit-III)** **17.** **18.** **19.** **20.**	**4X3=12**
Q.No.V	**(Should cover Entire Unit-IV)** **21.** **22.** **23.** **24.**	**4X3=12**

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS

as per the Choice Based Credit System (CBCS) designed in accordance with Learning Outcomes-Based Curriculum Framework (LOCF) of National Education Policy (NEP) 2020 for

Bachelor of Science

(Mathematics)

w.e.f.

Academic Year 2021-22 and onwards

Board of studies (UG) committee

S.No.	Name	Designation
1.	Dr. Vijayalaxmi S. Shigehalli	Chairperson
2.	Dr. D. Radhakrishna	Member
3.	Dr. Vithal Yashavant Patil	Member
4.	Shri. S.K. Girigol	Co-opted Member
5.	Shri. Nagasuresh	Co-opted Member

Dr. Vijayalaxmi S. Shigehalli
Dean of Science Faculty
Rani Channamma University, Belagavi

Dr. Vijayalaxmi S. Shigehalli
Chairperson BoS(UG)
Dearment of Mathematics,
RCU Belagavi

PREAMBLE

The subject wise expert committee to draft model curriculum contents in Mathematics constituted by the Department of Higher Education, Government of Karnataka, Bengaluru vide GO No. ED 260 UNE 2019 (PART-1) DATED 13.08.2021 is pleased to submit its partial report on the syllabus for the First Year (First & Second Semesters) B.A./B.Sc.(Basic/Honors) Mathematics and detailed Course Structure for B.A./B.Sc.(Honors) Mathematics and M.Sc. (One Year) Mathematics.

The committee discussed various models suggested by the Karnataka State Higher Education Council in its joint meetings with the Chairpersons of Board of Studies of all state universities in Karnataka and resolved to adopt Model IIA (Model Program Structure for the Bachelor of Arts (Basic/Hons.)/ Bachelor of Science (Basic/Hons.) for the subjects with practical's with Mathematics as Major/Minor.

To achieve the core objectives of the National Education Policy 2020 it is unanimously resolved to introduce computer based practical's for the Discipline Core (DSC) courses by using Free and Open Source Software's (FOSS) tools for implementation of theory based on DSC courses as it is also suggested by the LOCF committee that the papers may be taught using various Computer Algebra System (CAS) software's such as Mathematica, MATLAB, Maxima and R to

strengthen the conceptual understanding and widen up the horizon of students' self-experience. In view of these observations the subject expert committee suggested the software's Phython /R /Maxima/ Scilab/ Maple/MatLab/Mathematica for hands on experience of implementation of mathematical concepts in computer-based lab.

The expert committee suggests the implementation this curriculum structure in all the Departments of Mathematics in Universities/Colleges in Karnataka.

The subject expert committee designed the Course Learning Outcome (CO) to help the learners to understand the main objectives of studying the courses by keeping in mind of the Programme outcomes (PO) of the graduate degree with honors in Mathematics or a graduate degree with Mathematics as a major subject.

As the Mathematics subject is a vast with several branches of specializations, it is difficult for every student to learn each branch of Mathematics, even though each paper has its own importance. Hence the subject expert committee suggests number of elective papers (for both Discipline electives and Open Electives) along with Discipline Core Courses. The BoS in Mathematics of universities may include additional electives based on the expertise of their staff and needs of the students'. A student can select elective paper as per her/his needs and interest.

PROGRAM OUTCOMES:

1. **Disciplinary Knowledge:** Bachelor degree in Mathematics is the culmination of in-depth knowledge of Algebra, Calculus, Geometry, differential equations and several other branches of pure and applied mathematics. This also leads to study the related areas such as computer science and other allied subjects.
2. **Communication Skills:** Ability to communicate various mathematical concepts effectively using examples and their geometrical visualization. The skills and knowledge gained in this program will lead to the proficiency in analytical reasoning which can be used for modelling and solving of real-life problems.
3. **Critical thinking and analytical reasoning:** The students undergoing this programme acquire ability of critical thinking and logical reasoning and

capability of recognizing and distinguishing the various aspects of real life problems.

4. **Problem Solving:** The Mathematical knowledge gained by the students through this programme develop an ability to analyze the problems, identify and define appropriate computing requirements for its solutions. This programme enhances students overall development and also equip them with mathematical modelling ability, problem solving skills.
5. **Research related skills**: The completing this programme develop the capability of inquiring about appropriate questions relating to the Mathematical concepts in different areas of Mathematics.
6. **Information/digital Literacy:** The completion of this programme will enable the learner to use appropriate software's to solve system of algebraic equation and differential equations.
7. **Self-directed learning:** The student completing this program will develop an ability of working independently and to make an in-depth study of various notions of Mathematics.
8. **Moral and ethical awareness/reasoning:** The student completing this program will develop an ability to identify unethical behaviour such as fabrication, falsification or misinterpretation of data and adopting objectives, unbiased and truthful actions in all aspects of life in general and Mathematical studies in particular.
9. **Lifelong learning:** This programme provides self-directed learning and lifelong learning skills. This programme helps the learner to think independently and develop algorithms and computational skills for solving real word problems.
10. Ability to peruse advanced studies and research in pure and applied Mathematical sciences.

RANI CHANNAMMA UNIVERSITY
Vidyasangama, NH-4, Belagavi. -591156

Proposed Curricular and Credits Structure under Choice Based Credit System [CBCS] of Mathematics Major& One Minor Discipline Scheme for the Four Years Mathematics B.Sc. Undergraduate Honors Programme with effect from 2021-22.

SEMESTER-I										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L1	21BSC1L1LK1	Kannada	40	60	100	4	-	-	3	2
	21BSC1L1LFK1	Functional Kannada								
L2	21BSC1L2LEN2	English	40	60	100	4	-	-	3	2
	21BSC1L2LHI2	Hindi								
	21BSC1L2LSN2	Sanskrit								
	21BSC1L2LTE2	Telugu								
	21BSC1L2LUR2	Urdu								
DSC1	21BSC1C1MAT1L	Algebra - I and Calculus - I	40	60	100	4	-	-	4	2
	21BSC1C1MAT1P	Theory based Practical's on Algebra -I and Calculus – I	25	25	50	-	-	4	2	3
DSC1	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
SEC1	21BSC1SE1CS1	Digital Fluency	25	25	50	1	-	2	2	2
VBC1	21BSC1V1PE1	Physical Education- Yoga	25	-	25	-	-	2	1	-
VBC2	21BSC1V2HW1	Health & Wellness	25	-	25	-	-	2	1	-
OEC1	21BSC1O1MAT1-A	Mathematics – I	40	60	100	3	-	-	3	2
	21BSC1O1MAT1-B	Business Mathematics – I								
Total Marks					**700**	**Semester Credits**			**25**	

SEMESTER-II										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L3	21BSC2L3LK2	Kannada	40	60	100	4	-	-	3	2
	21BSC2L3FKL2	Functional Kannada								
L4	21BSC2L4EN2	English	40	60	100	4	-	-	3	2
	21BSC2L4HI2	Hindi								
	21BSC2L4SN2	Sanskrit								
	21BSC2L4TE2	Telugu								
	21BSC2L4UR2	Urdu								
DSC2	21BSC2C2MAT2L	Algebra - II and Calculus - II	40	60	100	4	-	-	4	2
	21BSC2C2MAT2P	Theory based Practical's on Algebra- II and Calculus – II	25	25	50	-	-	4	2	3
DSC2	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
AECC1	21BSC2AE1ES2	Environmental Studies	20	30	50	3	-	-	2	2
VBC3	21BSC2V3PE2	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC4	21BSC2V4NC1	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC2	21BSC2O2MAT2-A	Mathematics – II	40	60	100	3	-	-	3	2
	21BSC2O2MAT2-B	Business Mathematics-II								
Total Marks					**700**	**Semester Credits**			**25**	

SECOND YEAR; SEMESTER-III										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L5	21BSC3L5LK3	Kannada	40	60	100	4	-	-	3	2
	21BSC3L5LFK3	Functional Kannada								
L6	21BSC3L6EN3	English	40	60	100	4	-	-	3	2
	21BSC3L6HI3	Hindi								
	21BSC3L6SN3	Sanskrit								
	21BSC3L6TE3	Telugu								
	21BSC3L6UR3	Urdu								
DSC3	21BSC3C3MAT1L	Ordinary Differential Equations and Real Analysis-I	40	60	100	4	-	-	4	2
	21BSC3C3MAT1P	Theory based Practical's on Ordinary Differential Equations and Real Analysis-I	25	25	50	-	-	4	2	3
DSC3	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
SEC2	21BSC3SE2ES2	Artificial Intelligence	25	25	50	1	-	2	2	2
VBC5	21BSC3V5PE3	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC6	21BSC3V6NC2	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC3	21BSC3O3MAT3-A	Ordinary Differential Equations	40	60	100	3	-	-	3	2
	21BSC3O3MAT3-B	Quantitative Mathematics								
Total Marks					**700**	**Semester Credits**			**25**	

SEMESTER-IV										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L7	21BSC4L7LK4	Kannada	40	60	100	4	-	-	3	2
	21BSC4L7LFK4	Functional Kannada								
L8	21BSC4L8EN4	English	40	60	100	4	-	-	3	2
	21BSC4L8HI4	Hindi								
	21BSC4L8SN4	Sanskrit								
	21BSC4L8TE4	Telugu								
	21BSC4L8UR4	Urdu								
DSC4	21BSC4C4MAT2L	Partial Differential Equations and Integral Transforms	40	60	100	4	-	-	4	2
	21BSC4C4MAT2P	Theory based Practical's on Partial Differential Equations and Integral Transforms	25	25	50	-	-	4	2	3
DSC4	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
AECC2	21BSC4AE1ES2	Constitution of India	20	30	50	3	-	-	2	2
VBC7	21BSC4V5PE4	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC8	21BSC4V6NC3	NCC/NSS/R&R(S&G)/Cultural	25	-	25	-	-	2	1	-
OEC4	21BSC4O4MAT4-A	Partial Differential Equations	40	60	100	3	-	-	3	2
	21BSC4O4MAT4-B	Mathematical Finance								
Total Marks					**700**	**Semester Credits**			**25**	

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Mathematics as Major Discipline										
DSC5	21BSC5C5MATMJ1L	Real Analysis and Complex Analysis	40	60	100	3	-	-	3	2
	21BSC5C5MATMJ1P	Theory based Practical's on Real Analysis and Complex Analysis	25	25	50	-	-	4	2	3
DSC6	21BSC5C5MATMJ2L	Ring Theory	40	60	100	3	-	-	3	2
	21BSC5C5MATMJ2P	Theory based Practical's on Ring Theory	25	25	50	-	-	4	2	3
DSC5	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	3
DSE	21BSC5DSEMAT-A	Vector Calculus	40	60	100	3	-	-	3	2
	21BSC5DSEMAT-B	Mechanics								
	21BSC5DSEMAT-C	Mathematical Logic								
VBC9	21BSC5V5PE5	Physical Education- Sports	25	25	50	-	-	2	1	-
VBC10	21BSC5V6NC4	NCC/NSS/R&R(S&G)/Cultural	25	25	50	-	-	2	1	-
SEC3	21BSC5SE3MAT3	Cyber Security	25	25	50	1	-	2	2	2
		Total Marks			**650**	**Semester Credits**			**22**	

SEMESTER-VI

Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			IA	SEE	Total	L	T	P		
Mathematics as Major Discipline										
DSC7	21BSC6C6MATMJ1L	Linear Algebra	40	60	100	3	-	-	3	2
	21BSC6C6MATMJ1P	Theory based Practical's on Linear Algebra	25	25	50	-	-	4	2	3
DSC8	21BSC6C6MATMJ2L	Numerical Analysis	40	60	100	3	-	-	3	2
	21BSC6C6MATMJ2P	Theory based Practical's on Numerical Analysis	25	25	50	-	-	4	2	3
DSC6	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	3
DSE	21BSC6DSEMAT-A	Analytical Geometry in 3D	40	60	100	3	-	-	3	2
	21BSC6DSEMAT-B	Number Theory								
	21BSC6DSEMAT-C	Special Functions								
	21BSC6DSEMAT-C	History of Bhârtîya Gaṇita								
INT1	21BSC6 INT1L	Internship	25	50	75	-	-	-	2	2
VBC1	21BSC6V5PE5	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC2	21BSC6V6NC4	NCC/NSS/R&R(S&G) / Cultural	25	-	100	-	-	2	1	-
SEC4	21BSC6SE4MAT4	Professional Communication	25	25	50	1	-	2	2	2
Total Marks					**700**	**Semester Credits**			**24**	
Total Marks for BSC Program					**4175**	**Total Credits for BSC Program**			**146**	

Mathematics Subject as a Minor Discipline

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC5 As a Minor Subject	21BSC5C5MATMN1L	Complex Analysis	40	60	100	3	-	-	3	2
	21BSC5C5MATMN1P	Theory based Practical's on Complex Analysis	25	25	50	-	-	3	2	3

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC6 As a Minor Subject	21BSC6C6MATMN1L	Numerical Analysis	40	60	100	3	-	-	3	2
	21BSC6C6MATMN1P	Theory based Practical's on Numerical Analysis	25	25	50	-	-	3	2	3

Concept Note, Abbreviation Explanation and Coding:

Concept Note, Abbreviation Explanation and Coding:

Concept Note:

1. **CBCS** is a mode of learning in higher education which facilitates a student to have some freedom in selecting his/her own choices, across various disciplines for completing a UG/PG program.
2. A credit is a unit of study of a fixed duration. For the purpose of computation of workload as per UGC norms the following is mechanism be adopted in the University:
   One credit (01) = One Theory Lecture (L) period of one (1) hour.
   One credit (01) = One Tutorial (T) period of one (1) hour.
   One credit (01) = One practical (P) period of two (2) hours.
3. Course: paper/subject associated with AECC, DSC, DSEC, SEC, VBC, OEC, VC, IC and MIL
4. In case of **B.Sc**. **Once a candidate chose two courses/subjects of a particular two department in the beginning, he/she shall continue the same till the end of the degree, then there is no provision to change the course(s) and Department(s).**
5. A candidate shall choose **one of the Department's courses as major and other Department course as minor in fifth and sixth semester and major course will get continued in higher semester.**
6. Wherever there is a practical there will be no tutorial and vice-versa
7. A major subject is the subject that's the main focus of Core degree/concerned.
8. A minor is a secondary choice of subject that complements core major/ concerned.
9. Vocational course is a course that enables individual to acquire skills set that are required for a particular job.
10. Internship is a designated activity that carries some credits involving more than **25 days** of working in an organization (either in same organization or outside) under the guidance of an identified mentor. Internship shall be an integral part of the curriculum.
11. **OEC: For non-mathematics students. Mathematics students have to opt for OEC from departments other than major and minor disciplines.**

Abbreviation Explanations:

1. AECC: Ability Enhancement Compulsory Course.
2. DSC: Discipline Specific Core Course.
3. DSEC: Discipline Specific Elective Course.
4. SEC: Skill Enhancement Course.
5. VBC: Value Based Course.
6. OEC: Open/Generic Elective Course
7. VC: Vocational Course.
8. IC: Internship Course
9. L1: Language One
10. L2: MIL
11. L= Lecture; T= Tutorial; P=Practical.
12. MIL= Modern Indian Language; English or Hindi or Telugu or Sanskrit or Urdu

Program Coding:

1. Code 21: Year of Implementation
2. Code BSC: BSC Program under the faculty of Applied Science of the University
3. Code 1: First Semester of the Program, (2 to 6 represent higher semesters)
4. Code AE: AECC, (C for DSC, S for SEC, V for VBC and O for OEC)
5. Code 1: First "AECC" Course in semester, similarly in remaining semester for such other courses
6. Code LK: Language Kannada, similarly Language English, Language Hindi, Language Telugu, Language Sanskrit, &Language Urdu
7. Code 1: Course in that semester.
8. MAT: Mathematics

ASSESSMENT METHODS
Evaluation Scheme for Internal Assessment:

Theory:

Assessment Criteria	**30 marks**
1st Internal Assessment Test for 30 marks of duration 1 hr after 8 weeks and 2nd Internal Assessment Test for 30 marks 1 hr after 15 weeks. Average of two tests should be considered.	30
Assignment	10
Total	**40**

Assessment Criteria	**25 marks**
1st Internal Assessment Test for 20 marks of duration 1/2 hr after 8 weeks and 2nd Internal Assessment Test for 20 marks of duration 1 hr after 15 weeks. Average of two tests should be considered.	20
Assignment	05
Total	**25**

Practical:

Assessment Criteria	**25 marks**
Semester End Internal Assessment Test for 20 marks of duration 2 hrs	20
Journal (Practical Record)	05
Total	**25**

Question Paper Pattern:
RANI CHANNAMMA UNIVERSITY
Department of Mathematics

I Semester B.Sc (Mathematics)

Sub: **Code:** **Maximum Marks: 70**

a. Answer any Six Questions from Question 1

b. Answer any Three Questions from Question 2,3,4 and 5

Q.No.1.	**Answer any Five Questions (Two question from Each Unit)** **a.** **b.** **c.** **d,** **e.** **f.** **g.** **h.**	**2X6=12**
Q.No.2.	**(Should cover Entire Unit-I)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.3.	**(Should cover Entire Unit-II)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.4.	**(Should cover Entire Unit-III)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.5.	**(Should cover Entire Unit-IV)** **a.** **b.** **c.** **d.**	**4X3=12**

COURSE-WISE SYLLABUS

Semester I

Year	I	**Course Code:** 21BSC1C1MAT1L	**Credits**	04
Sem.	1	**Course Title:** Algebra - I and Calculus – I	**Hours**	56
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	

Course Outcomes	This course will enable the students to • Learn to solve system of linear equations. • Solve the system of homogeneous and non-homogeneous linear of m equations in n variables by using concept of rank of matrix, finding eigen values and eigen vectors. • Sketch curves in Cartesian, polar and pedal equations • Students will be familiar with the techniques of integration and differentiation of function with real variables. • Identify and apply the intermediate value theorems and L' Hospital rule.

Unit No.	Course Content	Hours
Unit I	**Matrix:** Recapitulation of Symmetric and Skew Symmetric matrices, Cayley- Hamilton theorem, inverse of matrices by Cayley-Hamilton theorem (Without Proof). Algebra of Matrices; Row and column reduction to Echelon form. Rank of a matrix; Inverse of a matrix by elementary operations; Solution of system of linear equations; Criteria for existence of non-trivial solutions of homogeneous system of linear equations. Solution of non-homogeneous system of linear equations. Eigen values and Eigen vectors of square matrices, real symmetric matrices and their properties, reduction of such matrices to diagonal form,	14
Unit II	**Polar Co-ordinates:** Polar coordinates, angle between the radius vector and tangent. Angle of intersection of two curves (polar forms), length of perpendicular from pole to the tangent, pedal equations. Derivative of an arc in Cartesian, parametric and polar forms, curvature of plane curve-radius of curvature formula in Cartesian, parametric and polar and pedal forms- center of curvature, asymptotes, evolutes and envelops.	14
Unit III	**Differential Calculus-I:** Limits, Continuity, Differentiability and properties. Properties of continuous functions. Intermediate value theorem, Rolle's Theorem , Lagrange's Mean Value theorem, Cauchy's Mean value theorem and examples. Taylor's theorem, Maclaurin's series, Indeterminate forms and evaluation of limits using	14

	L'Hospital rule.	
Unit IV	**Successive Differentiation**: nth Derivatives of Standard functions e^{ax+b}, $(ax+b)^m$, $\log(ax+b)$, $\sin(ax+b)$, $\cos(ax+b)$, $e^{ax}\sin(bx+c)$, $e^{ax}\cos(bx+c)$, Leibnitz theorem and its applications. Tracing of curves (standard curves)	14
Recommended Leaning Resources		
Print Resources	**References:** 1. University Algebra - N.S. Gopala Krishnan, New Age International (P) Limited 2. Theory of Matrices - B S Vatsa, New Age International Publishers. 3. Matrices - A R Vasista, Krishna Prakashana Mandir. 4. Differential Calculus - Shanti Narayan, S. Chand & Company, New Delhi. 5. Applications of Calculus, Debasish Sengupta, Books and Allied (P) Ltd., 2019. 6. Calculus – Lipman Bers, Holt, Rinehart & Winston. 7. Calculus - S Narayanan & T. K. Manicavachogam Pillay, S. Viswanathan Pvt. Ltd., vol. I & II. 8. Schaum's Outline of Calculus - Frank Ayres and Elliott Mendelson, 5th ed. USA:Mc. Graw. 9. Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.	

Year	I	**Course Code:** 21BSC1C1MAT1P	**Credits**	02
Sem.	I	**Course Title:** Practical's on Algebra - I and Calculus – I	**Hours**	56

Course Pre-requisites, if any:	Knowledge of Programming	
Formative Assessment Marks: 25	Summative Assessment Marks: 25	Duration of ESA: 03 hrs.

Course Outcomes	This course will enable the students to • Learn Free and Open Source Software (FOSS) tools for computer programming Solve problem on algebra and calculus theory studied in MATDSCT 1.1 by using FOSS software. Acquire knowledge of applications of algebra and calculus through FOSS Practical/Lab Work to be performed in Computer Lab (FOSS) • Suggested Software's: Maxima/Scilab/Maple/MatLab/Mathematica/Phython/R
	Lab Practical's: **Part A:** Introduction to the software and commands related to the topic. 1. Computation of addition and subtraction of matrices, 2. Computation of Multiplication of matrices. 3. Computation of Trace and Transpose of Matrix 4. Computation of Rank of matrix and Row reduced Echelon form. 5. Computation of Inverse of a Matrix using Cayley-Hamilton theorem. 6. Solving the system of homogeneous and non-homogeneous linear algebraic equations. **Part B:** 7. Finding the nth Derivative of e^{ax} , trigonometric and hyperbolic functions 8. Finding the nth Derivative of algebraic and logarithmic functions. 9. Finding the nth Derivative of $e^{ax+b}\sin(bx+c)$, $e^{ax+b}\cos(bx+c)$. 10. Finding the Taylor's and Maclaurin's expansions of the given functions. 11. Finding the angle between the radius vector and tangent. 12. Finding the curvatures of the given curves. 13. Tracing of standard curves (Cartesian, polar and parametric)

Evaluation Scheme for Lab Examination

Assessment Criteria		Marks
Program – 1 from Part A	Writing Program	03
	Execution of Program	07
Program -2 from Part B	Writing Program	03
	Execution of Program	07
Viva-Voce		05
Total		**25**

OPEN-ELECTIVE SYLLABUS :

A: For students of Science stream who have not chosen Mathematics as one of Core Subjects

Year	I	**Course Code:** 21BSC1O1MAT1	**Credits**	03
Sem.	I	**Course Title:** Mathematics – I	**Hours**	42

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	This course will enable the students to • Learn to solve system of linear equations. • Solve the system of homogeneous and non-homogeneous m linear equations by using the concept of rank of matrix, finding eigen values and eigen vectors. • Students will be familiar with the techniques of differentiation of function with real variables. • Identify and apply the intermediate value theorems and L' Hospital rule. • Learn to trace some standard curves.	
Unit No.	**Course Content**	**Hours**
Unit I	**Matrices:** Recapitulation of Symmetric and Skew Symmetric matrices, Cayley- Hamilton theorem, inverse of matrices by Cayley-Hamilton theorem (Without Proof). Algebra of Matrices; Row and column reduction, Echelon form. Rank of a matrix; Inverse of a matrix by elementary operations; Solution of system of linear equations; Criteria for existence of non-trivial solutions of homogeneous system of linear equations. Solution of non-homogeneous system of linear equations. Eigen values and Eigen vectors of square matrices, real symmetric matrices and their properties, reduction of such matrices to diagonal form.	14
Unit II	**Differential Calculus:** Limits, Continuity, Differentiability and properties. Intermediate value theorem, Rolle's Theorem, Lagrange's Mean Value theorem, Cauchy's Mean value theorem and examples. Taylor's theorem, Maclaurin's series, Indeterminate forms and examples.	14
Unit III	**Successive Differentiation**: nth Derivatives of Standard functions e^{ax+b}, $(ax+b)^m$, $\log(ax+b)$, $\sin(ax+b)$, $\cos(ax+b)$, $e^{ax}\sin(bx+c)$, $e^{ax}\cos(bx+c)$, Leibnitz theorem and its applications. Tracing of curves (standard curves)	14
Recommended Leaning Resources		

Print Resources	**References:** 1. University Algebra - N.S. Gopala Krishnan, New Age International (P) Limited 2. Theory of Matrices - B S Vatsa, New Age International Publishers. 3. Matrices – A. R. Vasista, Krishna Prakashana Mandir. 4. Applications of Calculus, Debasish Sengupta, Books and Allied (P) Ltd., 2019. 5. Differential Calculus - Shanti Narayan, S. Chand & Company, New Delhi. 6. Calculus – Lipman Bers, Holt, Rinehart & Winston. 7. Calculus – S. Narayanan & T. K. Manicavachogam Pillay, S. Viswanathan Pvt. Ltd.,vol. I & II. 8. Schaum's Outline of Calculus - Frank Ayres and Elliott Mendelson, 5th ed. USA: Mc.Graw. 9. Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.

B: For Students of other than Science Stream

Year	I	**Course Code:** 21BSC1O1MAT1	**Credits**	03
Sem.	I	**Course Title:** Business Mathematics – I	**Hours**	42

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	This course will enable the students to • Translate the real word problems through appropriate mathematical modellling. • Explain the concepts and use equations, formulae and mathematical expression and relationship in a variety of context. • Finding the extreme values of functions. • Analyze and demonstrate the mathematical skill require in mathematically intensive areas in economics and business.	
Unit No.	**Course Content**	**Hours**
Unit I	**Algebra** – Set theory and simple applications of Venn Diagram, relations, functions, indices, logarithms, permutations and combinations. Examples on commercial mathematics.	14
Unit II	**Matrices**: Definition of a matrix; types of matrices; algebra of matrices. Properties of determinants; calculations of values of determinants upto third order; Adjoint of a matrix, elementary row and column operations; solution of a system of linear equations having unique solution and involving not more than three variables. Examples on commercial mathematics.	14
Unit III	**Differential Calculus**: Constant and variables, functions, Limits & continuity. Differentiability and Differentiation, partial differentiation, rates as a measure, maxima, minima, Partial Derivatives up to second order; Homogeneity of functions and Euler's Theorem; Total Differentials; Differentiation of implicit function with the help of total differentials, Maxima and Minima; cases of one variable involving second or higher order derivatives; Cases of two variables involving not more than one constraint	14
Recommended Leaning Resources		
Print Resources	**References:** 1. Basic Mathematics, Allel R.G.A, Macmillan, New Delhi. 2. Mathematics for Economics, Dowling, E.T. , Schaum's Series, McGraw Hill, London. 3. Quantitative Techniques in Management, Vohra, N.D., Tata McGraw Hill, New Delhi.	

	4. Business Mathematics, Soni R.S., Pitamber Publishing House, Delhi

Semester II

Year	I	**Course Code:** 21BSC1C1MAT1L	**Credits**	04
Sem.	II	**Course Title:** Algebra - II and Calculus –II	**Hours**	56

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	This course will enable the students to • Recognize the mathematical objects called Groups. • Link the fundamental concepts of groups and symmetries of geometrical objects. • Explain the significance of the notions of Cosets, normal subgroups and factor groups. • Understand the concept of differentiation and fundamental theorems in differentiation and various rules. • Find the extreme values of functions of two variables.

Unit No.	**Course Content**	**Hours**
Unit I	**Real Number System:** Recapitulation of number system. Countable and uncountable sets, standard theorems. Real line, bounded sets, suprimum and infimum of a set, completeness properties of R, Archimedean property of R. Intervals, neighborhood of a point, open sets, closed sets, limit points and Bolzano-Weierstrass theorem (Without proof).	14
Unit II	**Groups:** Definition of a group with examples and properties, congruence, problems. Subgroups, center of groups, order of an element of a group and its related theorems, cyclic groups, Coset decomposition, Factor groups, Lagrange's theorem and its consequences. Fermat's theorem, Euler's ϕ	14
Unit III	**Partial Derivatives**: Functions of two or more variables-explicit and implicit functions, partial derivatives. Homogeneous functions- Euler's theorem, total derivatives, differentiation of implicit and composite functions, Jacobians and standard properties and illustrative examples. Taylor's and Maclaurin's series for functions of two variables, Maxima-Minima of functions of two variables	14
Unit IV	**Integral Calculus**: Recapitulation of definite integrals and its properties. Line integral: Definition of line integral and basic properties, examples on evaluation of line integrals. Double integral: Definition of Double integrals and its conversion to iterated integrals. Evaluation of double integrals by changing the order of integration and change of variables. Computation of plane surface areas, volume	14

	underneath a surface of revolution using double integral. Triple integral: Definition of triple integrals and evaluation-change of variables, volume as triple integral. Differentiation under the integral sign by Leibnitz rule.	
Recommended Leaning Resources		
Print Resources	**References** 1. Topics in Algebra, I N Herstein, Wiley Eastern Ltd., New Delhi. 2. Higher algebra, Bernard & Child, Arihant, ISBN: 9350943199/ 9789350943199. 3. Modern Algebra, Sharma and Vasista, Krishna Prakashan Mandir, Meerut, U.P. 4. Differential Calculus, Shanti Narayan, S. Chand & Company, New Delhi. 5. Integral Calculus, Shanti Narayan and P K Mittal, S. Chand and Co. Pvt. Ltd., 6. Schaum's Outline Series, Frank Ayres and Elliott Mendelson, 5th ed. USA: Mc. Graw Hill., 2008. 7. Mathematical Analysis, S C Malik, Wiley Eastern. 8. A Course in Abstract Algebra, Vijay K Khanna and S K Bhambri, Vikas Publications. 9. Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.	

<table>
<tr><td>Year</td><td>I</td><td colspan="2">Course Code: 21BSC1C1MAT1P</td><td>Credits</td><td>02</td></tr>
<tr><td>Sem.</td><td>II</td><td colspan="2">Course Title: Practical's on Algebra - II and Calculus – II</td><td>Hours</td><td>56</td></tr>
<tr><td colspan="2">Course Pre-requisites, if any:</td><td colspan="4">Knowledge of Programming</td></tr>
<tr><td colspan="2">Formative Assessment Marks: 25</td><td colspan="2">Summative Assessment Marks: 25</td><td colspan="2">Duration of ESA: 03 hrs.</td></tr>
<tr><td>Course Outcomes</td><td colspan="5">This course will enable the students to
• Learn Free and Open Source Software (FOSS) tools for computer programming
• Solve problem on algebra and calculus by using FOSS software's.
• Acquire knowledge of applications of algebra and calculus through FOSS Practical/Lab Work to be performed in Computer Lab
Suggested Software's: Maxima/Scilab/Maple/MatLab/Mathematica/Phython/R.</td></tr>
<tr><td></td><td colspan="5">Lab Practical's:

Part A:
1. Program for verification of binary operations.
2. Computation of identity and inverse elements of a group.
3. Program to construct Cayley's table and test abelian for given finite set.
4. Program to find all possible cosets of the given finite group.
5. Program to find generators and corresponding possible subgroups of a cyclic group.
6. Programs to verification of Lagrange's theorem with suitable examples.

Part B:
7. Program to verify the Euler's ϕ function for a given finite group.
8. Program to verify the Euler's theorem and its extension
9. Programs to construct series using Maclaurin's expansion for functions of two variables.
10. Program to evaluate the line integrals with constant and variable limits.
11. Program to evaluate the Double integrals with constant and variable limits
12. Program to evaluate the Triple integrals with constant and variable limits.</td></tr>
</table>

Evaluation Scheme for Lab Examination

Assessment Criteria		Marks
Program – 1 from Part A	Writing Program	03
	Execution of Program	07
Program -2 from Part B	Writing Program	03
	Execution of Program	07
Viva-Voce		05
Total		**25**

OPEN-ELECTIVE SYLLABUS :

A: For students of Science stream who have not chosen Mathematics as one of Core Subjects

Year	I	**Course Code:** 21BSC1O1MAT1	**Credits**	03
Sem.	II	**Course Title:** Mathematics – II	**Hours**	42

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	This course will enable the students to • Recognize the mathematical objects called Groups. • Link the fundamental concepts of groups and symmetries of geometrical objects. • Explain the significance of the notions of Cosets, normal subgroups and factor groups. • Understand the concept of differentiation and fundamental theorems in differentiation and various rules. • Find the extreme values of functions of two variables. • To understand the concepts of multiple integrals and their applications.

Unit No.	**Course Content**	**Hours**
Unit I	**Groups**: Definition of a group with examples and properties, congruence, problems. Subgroups, center of groups, order of an element of a group and its related theorems, cyclic groups, Coset decomposition, Factor groups, Lagrange's theorem and its consequences. Fermat's theorem and Euler's ϕ function.	14
Unit II	**Partial Derivatives**: Functions of two or more variables-explicit and implicit functions, partial derivatives. Homogeneous functions- Euler's theorem, total derivatives, differentiation of implicit and composite functions, Jacobians and standard properties and illustrative examples. Taylor's and Maclaurin's series for functions of two variables, Maxima-Minima of functions of two variables.	14
Unit III	**Integral Calculus**: Recapitulation of definite integrals and its properties. Line integral: Definition of line integral and basic properties, examples on evaluation of line integrals. Double integral: Definition of Double integrals and its conversion to iterated integrals. Evaluation of double integrals by changing the order of integration and change of variables. Computation of plane surface areas, volume underneath a surface of revolution using	14

	double integral. Triple integral: Definition of triple integrals and evaluation-change of variables, volume as triple integral. Differentiation under the integral sign by Leibnitz rule.	
Recommended Leaning Resources		
Print Resources	**References:** 1. Topics in Algebra, I N Herstein, 2nd Edition, Wiley Eastern Ltd., New Delhi. 2. Higher algebra, Bernard & Child, Arihant Pub. 3. Modern Algebra, Sharma and Vasishta, Krishna Prakashan Mandir, Meerut, U.P. 4. A Course in Abstract Algebra, Vijay K Khanna and S K Bhambri, Vikas Publications. 5. Differential Calculus, Shanti Narayan, S. Chand & Company, New Delhi. 6. Integral Calculus, Shanti Narayan and P K Mittal, S. Chand and Co. Pvt. Ltd., 7. Schaum's Outline Series, Frank Ayres and Elliott Mendelson, 5th ed. USA: McGraw Hill., 2008. 8. Mathematical Analysis, S C Malik, Wiley Eastern. 9. Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.	

B: For Students of other than Science Stream

Year	I	**Course Code:** 21BSC1O1MAT1	**Credits**	03
Sem.	II	**Course Title:** Business Mathematics – II	**Hours**	42
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	
Course Outcomes	This course will enable the students to • Integrate concept in international business concept with functioning of global trade. • Evaluate the legal, social and economic environment of business. • Apply decision-support tools to business decision making. • Will be able to apply knowledge of business concepts and functions in an integrated manner.			
Unit No.	**Course Content**		**Hours**	
Unit I	**Commercial Arithmetic**: Interest: Concept of Present value and Future value, Simple interest, Compound interest, Nominal and Effective rate of interest, Examples and Problems Annuity: Ordinary Annuity, Sinking Fund, Annuity due, Present Value and Future Value of Annuity, Equated Monthly Instalments (EMI) by Interest of Reducing Balance and Flat Interest methods, Examples and Problems.		14	
Unit II	**Measures of central Tendency and Dispersion**: Frequency distribution: Raw data, attributes and variables, Classification of data, frequency distribution, cumulative frequency distribution, Histogram and give curves. Requisites of ideal measures of central tendency, Arithmetic Mean, Median and Mode for ungrouped and grouped data. Combined mean, Merits and demerits of measures of central tendency, Geometric mean: definition, merits and demerits, Harmonic mean: definition, merits and demerits, Choice of A.M., G.M. and H.M. Concept of dispersion, Measures of dispersion: Range, Variance, Standard deviation (SD) for grouped and ungrouped data, combined SD, Measures of relative dispersion: Coefficient of range, coefficient of variation. Examples and problems.		14	
Unit III	**Correlation and regression**: Concept and types of correlation, Scatter diagram,		14	

	Interpretation with respect to magnitude and direction of relationship. Karl Pearson'scoefficient of correlation for ungrouped data. Spearman's rank correlation coefficient. (with tie and without tie) Concept of regression, Lines of regression for ungrouped data, predictions using lines of regression. Regression coefficients and their properties (without proof). Examples and problems.	
Recommended Leaning Resources		
Print Resources	**References:** 1. Practical Business Mathematics, S. A. Bari New Literature Publishing Company New Delhi. 2. Mathematics for Commerce, K. Selvakumar Notion Press Chennai 3. Business Mathematics with Applications, Dinesh Khattar & S. R. Arora S. Chand Publishing New Delhi 4. Business Mathematics and Statistics, N.G. Das &Dr. J.K. Das McGraw Hill New Delhi 5. Fundamentals of Business Mathematics, M. K. Bhowal, Asian Books Pvt. Ltd New Delhi 6. Mathematics for Economics and Finance: Methods and Modelling, Martin Anthony and Norman, Biggs Cambridge University Press Cambridge 7. Financial Mathematics and its Applications, Ahmad Nazri Wahidudin Ventus Publishing APS Denmark 8. Fundamentals of Mathematical Statistics, Gupta S. C. and Kapoor V. K.:, Sultan Chand and Sons, New Delhi. 9. Statistical Methods, Gupta S. P.: Sultan Chand and Sons, New Delhi. 10. Applied Statistics, Mukhopadhya Parimal New Central Book Agency Pvt. Ltd. Calcutta. 11. Fundamentals of Statistics, Goon A. M., Gupta, M. K. and Dasgupta, B. World Press Calcutta. 12. Fundamentals of Applied Statistics, Gupta S. C. and Kapoor V. K.:, Sultan Chand and Sons, New Delhi.	

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS

as per the Choice Based Credit System (CBCS) designed in accordance with Learning Outcomes-Based Curriculum Framework (LOCF) of National Education Policy (NEP) 2020 for

Bachelor of Science

(Mathematics)

w.e.f.

Academic Year 2021-22 and onwards

Board of studies (UG) committee

S.No.	Name	Designation
1.	Dr.Vijayalaxmi S. Shigehalli	Chairperson
2.	Dr. D. Radhakrishna	Member
3.	Dr.VithalYashavantPatil	Member
4.	Shri. S.K. Girigol	Co-opted Member
5.	Shri. Nagasuresh	Co-opted Member

Dr.Vijayalaxmi S. ShigehalliDr.Vijayalaxmi S. Shigehalli
Dean of Science Faculty Chairperson BoS(UG)
Rani Channamma University, BelagaviDearment of Mathematics,
RCU Belagavi

BOS COMMITTEE (NEP- MATHEMATICS)

B.Sc. MATHEMATICS (III & IV SEM) PROGRAM 2022-23

1	Prof. Vishwanath B. Awati, Department of Mathematics, RCU Belagavi	Chairman
2	Dr. L. M. Angadi, Govt First Grade College, Chikkodi	Member
3	Prof. (Smt) M. S. Shobani Sri Jagadamba Arts and Science First Grade College, Hittanalli tanda LT, Sindagi	Member

PREAMBLE

The subject wise expert committee to draft model curriculum contents in Mathematics constituted by the Department of Higher Education, Government of Karnataka, Bengaluru vide GO No. ED 260 UNE 2019 (PART-1) DATED 13.08.2021 is pleased to submit its partial report on the syllabus for the First Year (First & Second Semesters) B.A./B.Sc.(Basic/Honors) Mathematics and detailedCourse Structure for B.A./B.Sc.(Honors) Mathematics and M.Sc. (One Year) Mathematics.

The committee discussed various models suggested by the Karnataka State Higher Education Council in its joint meetings with the Chairpersons of Board of Studies of all state universities in Karnataka and resolved to adopt Model IIA (ModelProgram Structure for the Bachelor of Arts (Basic/Hons.)/ Bachelor of Science(Basic/Hons.) for the subjects with practical's with Mathematics as Major/Minor.

To achieve the core objectives of the National Education Policy 2020 it is unanimously resolved to introduce computer based practical's for the Discipline

Core (DSC) courses by using Free and Open Source Software's (FOSS) tools for implementation of theory based on DSC courses as it is also suggested by the LOCF committee that the papers may be taught using various Computer Algebra System (CAS) software's such as Mathematica, MATLAB, Maxima and R to strengthen the conceptual understanding and widen up the horizon of students' self-experience. In view of these observations the subject expert committee suggested the software's Phython /R /Maxima/ Scilab/ Maple/MatLab/Mathematica for hands on experience of implementation of mathematical concepts in computer-based lab.

The expert committee suggests the implementation this curriculum structure in all the Departments of Mathematics in Universities/Colleges in Karnataka.

The subject expert committee designed the Course Learning Outcome (CO) to help the learners to understand the main objectives of studying the courses by keeping in mind of the Programme outcomes (PO) of the graduate degree with honors in Mathematics or a graduate degree with Mathematics as a major subject.

As the Mathematics subject is a vast with several branches of specializations, it is difficult for every student to learn each branch of Mathematics, even though each paper has its own importance. Hence the subject expert committee suggests number of elective papers (for both Discipline electives and Open Electives) along with Discipline Core Courses. The BoS in Mathematics of universities may includeadditional electives based on the expertise of their staff and needs of the students'. A student can select elective paper as per her/his needs and interest.

PROGRAM OUTCOMES:

1. **Disciplinary Knowledge:** Bachelor degree in Mathematics is the culmination of in-depth knowledge of Algebra, Calculus, Geometry, differential equations and several other branches of pure and applied mathematics. This also leads to study the related areas such as computer science and other allied subjects.
2. **Communication Skills:** Ability to communicate various mathematical concepts effectively using examples and their geometrical visualization. The skills and knowledge gained in this program will lead to the proficiency in analytical reasoning which can be used for modelling and solving of real-life problems.
3. **Critical thinking and analytical reasoning:** The students undergoing this programme acquire ability of critical thinking and logical reasoning and capability of recognizing and distinguishing the various aspects of real life problems.
4. **Problem Solving:** The Mathematical knowledge gained by the students through this programme develop an ability to analyze the problems, identify and define appropriate computing requirements for its solutions. This

programme enhances students overall development and also equip them with mathematical modelling ability, problem solving skills.

5. **Research related skills**: The completing this programme develop the capability of inquiring about appropriate questions relating to the Mathematical concepts in different areas of Mathematics.
6. **Information/digital Literacy:**The completion of this programme will enable the learner to use appropriate software's to solve system of algebraic equation and differential equations.
7. **Self-directed learning:** The student completing this program willdevelop an ability of working independently and to make an in-depth studyof various notions of Mathematics.
8. **Moral and ethical awareness/reasoning:**The student completing thisprogram will develop an ability to identify unethical behaviour such asfabrication, falsification or misinterpretation of data and adoptingobjectives, unbiased and truthful actions in all aspects of life in general andMathematical studies in particular.
9. **Lifelong learning:** This programme provides self-directed learning andlifelong learning skills. This programme helps the learner to thinkindependently and develop algorithms and computational skills for solvingreal word problems.
10. Ability to peruse advanced studies and research in pure and appliedMathematical sciences.

RANI CHANNAMMA UNIVERSITY
Vidyasangama, NH-4, Belagavi. -591156

Proposed Curricular and Credits Structure under Choice Based Credit System [CBCS] of Mathematics Major& One Minor Discipline Scheme for the Four Years Mathematics B.Sc. Undergraduate Honors Programme with effect from 2021-22.

SEMESTER-I										
Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			IA	SEE	Total	L	T	P		
L1	21BSC1L1LK1	Kannada	40	60	100	4	-	-	3	2
	21BSC1L1LFK1	Functional Kannada								
L2	21BSC1L2LEN2	English	40	60	100	4	-	-	3	2
	21BSC1L2LHI2	Hindi								
	21BSC1L2LSN2	Sanskrit								
	21BSC1L2LTE2	Telugu								
	21BSC1L2LUR2	Urdu								
DSC1	21BSC1C1MAT1L	Algebra - I and Calculus – I	40	60	100	4	-	-	4	2
	21BSC1C1MAT1P	Theory based Practical's on Algebra -I and Calculus – I	25	25	50	-	-	4	2	3
DSC1	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
SEC1	21BSC1SE1CS1	Digital Fluency	25	25	50	1	-	2	2	2
VBC1	21BSC1V1PE1	Physical Education-Yoga	25	-	25	-	-	2	1	-
VBC2	21BSC1V2HW1	Health & Wellness	25	-	25	-	-	2	1	-
OEC1	21BSC1O1MAT1-A	Mathematics – I	40	60	100	3	-	-	3	2
	21BSC1O1MAT1-B	Business Mathematics – I								
			Total Marks		**700**	**Semester Credits**			**25**	

SEMESTER-II										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L3	21BSC2L3LK2	Kannada	40	60	100	4	-	-	3	2
	21BSC2L3FKL2	Functional Kannada								
L4	21BSC2L4EN2	English	40	60	100	4	-	-	3	2
	21BSC2L4HI2	Hindi								
	21BSC2L4SN2	Sanskrit								
	21BSC2L4TE2	Telugu								
	21BSC2L4UR2	Urdu								
DSC2	21BSC2C2MAT2L	Algebra - II and Calculus –II	40	60	100	4	-	-	4	2
	21BSC2C2MAT2P	Theory based Practical's on Algebra- II and Calculus – II	25	25	50	-	-	4	2	3
DSC2	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
AECC1	21BSC2AE1ES2	Environmental Studies	20	30	50	3	-	-	2	2
VBC3	21BSC2V3PE2	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC4	21BSC2V4NC1	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC2	21BSC2O2MAT2-A	Mathematics – II	40	60	100	3	-	-	3	2
	21BSC2O2MAT2-B	Business Mathematics-II								
Total Marks					**700**	**Semester Credits**			**25**	

SECOND YEAR; SEMESTER-III										
Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			IA	SEE	Total	L	T	P		
L5	21BSC3L5LK3	Kannada	40	60	100	4	-	-	3	2
	21BSC3L5LFK3	Functional Kannada								
L6	21BSC3L6EN3	English	40	60	100	4	-	-	3	2
	21BSC3L6HI3	Hindi								
	21BSC3L6SN3	Sanskrit								
	21BSC3L6TE3	Telugu								
	21BSC3L6UR3	Urdu								
DSC3	21BSC3C3MAT1L	Ordinary Differential Equations and Real Analysis-I	40	60	100	4	-	-	4	2
	21BSC3C3MAT1P	Theory based Practical's on Ordinary Differential Equations and Real Analysis-I	25	25	50	-	-	4	2	3
DSC3	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
SEC2	21BSC3SE2ES2	Artificial Intelligence	25	25	50	1	-	2	2	2
VBC5	21BSC3V5PE3	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC6	21BSC3V6NC2	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC3	21BSC3O3MAT3-A	Ordinary Differential Equations	40	60	100	3	-	-	3	2
	21BSC3O3MAT3-B	Quantitative Mathematics								
	21BSC3O3MAT3-C	Vedic Mathematiics								
Total Marks					**700**	**Semester Credits**			**25**	

SEMESTER-IV										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L7	21BSC4L7LK4	Kannada	40	60	100	4	-	-	3	2
	21BSC4L7LFK4	Functional Kannada								
L8	21BSC4L8EN4	English	40	60	100	4	-	-	3	2
	21BSC4L8HI4	Hindi								
	21BSC4L8SN4	Sanskrit								
	21BSC4L8TE4	Telugu								
	21BSC4L8UR4	Urdu								
DSC4	21BSC4C4MAT2L	Partial Differential Equations and Integral Transforms	40	60	100	4	-	-	4	2
	21BSC4C4MAT2P	Theory based Practical's on Partial Differential Equations and Integral Transforms	25	25	50	-	-	4	2	3
DSC4	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
AECC 2	21BSC4AE1ES2	Constitution of India	20	30	50	3	-	-	2	2
VBC7	21BSC4V5PE4	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC8	21BSC4V6NC3	NCC/NSS/R&R(S&G)/Cultural	25	-	25	-	-	2	1	-
OEC4	21BSC4O4MAT4-A	Partial Differential Equations	40	60	100	3	-	-	3	2
	21BSC4O4MAT4-B	Mathematical Finance								
	21BSC4O4MAT4-C	Mathematics for Social Science								
Total Marks					**700**	**Semester Credits**			**25**	

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Mathematics as Major Discipline										
DSC5	21BSC5C5MATMJ1L	Real Analysis and Complex Analysis	40	60	100	3	-	-	3	2
	21BSC5C5MATMJ1P	Theory based Practical's on Real Analysis and Complex Analysis	25	25	50	-	-	4	2	3
DSC6	21BSC5C5MATMJ2L	Ring Theory	40	60	100	3	-	-	3	2
	21BSC5C5MATMJ2P	Theory based Practical's on Ring Theory	25	25	50	-	-	4	2	3
DSC5	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	3
DSE	21BSC5DSEMAT-A	Vector Calculus	40	60	100	3	-	-	3	2
	21BSC5DSEMAT-B	Mechanics								
	21BSC5DSEMAT-C	Mathematical Logic								
VBC9	21BSC5V5PE5	Physical Education-Sports	25	25	50	-	-	2	1	-
VBC10	21BSC5V6NC4	NCC/NSS/R&R (S&G)/Cultural	25	25	50	-	-	2	1	-
SEC3	21BSC5SE3MAT3	Cyber Security	25	25	50	1	-	2	2	2
Total Marks					**650**	**Semester Credits**			**22**	

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Mathematics as Major Discipline										
DSC7	21BSC6C6MATMJ1L	Linear Algebra	40	60	100	3	-	-	3	2
	21BSC6C6MATMJ1P	Theory based Practical's on Linear Algebra	25	25	50	-	-	4	2	3
DSC8	21BSC6C6MATMJ2L	Numerical Analysis	40	60	100	3	-	-	3	2
	21BSC6C6MATMJ2P	Theory based Practical's on Numerical Analysis	25	25	50	-	-	4	2	3
DSC6	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	3
DSE	21BSC6DSEMAT-A	Analytical Geometry in 3D	40	60	100	3	-	-	3	2
	21BSC6DSEMAT-B	Number Theory								
	21BSC6DSEMAT-C	Special Functions								
	21BSC6DSEMAT-C	History of BhârtîyaGaṇita								
INT1	21BSC6 INT1L	Internship	25	50	75	-	-	-	2	2
VBC1	21BSC6V5PE5	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC2	21BSC6V6NC4	NCC/NSS/R &R(S&G) / Cultural	25	-	100	-	-	2	1	-
SEC4	21BSC6SE4MAT4	Professional Communication	25	25	50	1	-	2	2	2
			Total Marks		**700**	**Semester Credits**			**24**	
			Total Marks for BSC Program		**4175**	**Total Credits for BSC Program**			**146**	

Mathematics Subject as a Minor Discipline

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC6 As a Minor Subject	21BSC6C6MATMN1L	Numerical Analysis	40	60	100	3	-	-	3	2
	21BSC6C6MATMN1P	Theory based Practical's on Numerical Analysis	25	25	50	-	-	3	2	3

Concept Note, Abbreviation Explanation and Coding:

Concept Note:

1. **CBCS** is a mode of learning in higher education which facilitates a student to have some freedom in selecting his/her own choices, across various disciplines for completing a UG/PG program.
2. A credit is a unit of study of a fixed duration. For the purpose of computation of workload as per UGC norms the following is mechanism be adopted in the University:
   One credit (01) = One Theory Lecture (L) period of one (1) hour.
   One credit (01) = One Tutorial (T) period of one (1) hour.
   One credit (01) = One practical (P) period of two (2) hours.
3. Course: paper/subject associated with AECC, DSC, DSEC, SEC, VBC, OEC, VC, IC and MIL
4. In case of **B.Sc**. **Once a candidate chose two courses/subjects of a particular two department in the beginning, he/she shall continue the same till the end of the degree, then there is no provision to change the course(s) and Department(s).**
5. A candidate shall choose **one of the Department's courses as major and other Department course as minor in fifth and sixth semester and major course will get continued in higher semester.**
6. Wherever there is a practical there will be no tutorial and vice-versa
7. A major subject is the subject that's the main focus of Core degree/concerned.
8. A minor is a secondary choice of subject that complements core major/ concerned.
9. Vocational course is a course that enables individual to acquire skills set that are required for a particular job.

10. Internship is a designated activity that carries some credits involving more than **25 days** of working in an organization (either in same organization or outside) under the guidance of an identified mentor. Internship shall be an integral part of the curriculum.
11. **OEC: For non-mathematics students. Mathematics students have to opt for OEC from departments other than major and minor disciplines.**

Abbreviation Explanations:

1. AECC: Ability Enhancement Compulsory Course.
2. DSC: Discipline Specific Core Course.
3. DSEC: Discipline Specific Elective Course.
4. SEC: Skill Enhancement Course.
5. VBC: Value Based Course.
6. OEC: Open/Generic Elective Course
7. VC: Vocational Course.
8. IC: Internship Course
9. L1: Language One
10. L2: MIL
11. L= Lecture; T= Tutorial; P=Practical.
12. MIL= Modern Indian Language; English or Hindi or Telugu or Sanskrit or Urdu

Program Coding:

1. Code 21: Year of Implementation
2. Code BSC: BSC Program under the faculty of Applied Science of the University
3. Code 1: First Semester of the Program, (2 to 6 represent higher semesters)
4. Code AE: AECC, (C for DSC, S for SEC, V for VBC and O for OEC)
5. Code 1: First "AECC" Course in semester, similarly in remaining semester for such other courses
6. Code LK: Language Kannada, similarly Language English, Language Hindi, Language Telugu, Language Sanskrit, &Language Urdu
7. Code 1: Course in that semester.
8. MAT: Mathematics

ASSESSMENT METHODS
Evaluation Scheme for Internal Assessment:

Theory:

Assessment Criteria	**30 marks**
1st Internal Assessment Test for 30 marks of duration 1 hr after 8 weeks and 2nd Internal Assessment Test for 30 marks 1 hr after 15 weeks. Average of two tests should be considered.	30
Assignment	10
Total	**40**

Assessment Criteria	**25 marks**
1st Internal Assessment Test for 20 marks of duration 1/2 hr after 8 weeks and 2nd Internal Assessment Test for 20 marks of duration 1 hr after 15 weeks. Average of two tests should be considered.	20
Assignment	05
Total	**25**

Practical:

Assessment Criteria	**25 marks**
Semester End Internal Assessment Test for 20 marks of duration 2 hrs	20
Journal (Practical Record)	05
Total	**25**

Question Paper Pattern:
RANI CHANNAMMA UNIVERSITY
Department of Mathematics

I SemesterB.Sc (Mathematics)

Sub: Code: Maximum Marks: 70

a. Answer any Six Questions from Question 1

b. Answer any Three Questions from Question 2,3,4 and 5

Q.No.1.	**Answer any Five Questions (Two question from Each Unit)** **a.** **b.** **c.** **d,** **e.** **f.** **g.** **h.**	**2X6=12**
Q.No.2.	**(Should cover Entire Unit-I)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.3.	**(Should cover Entire Unit-II)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.4.	**(Should cover Entire Unit-III)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.5.	**(Should cover Entire Unit-IV)** **a.** **b.** **c.** **d.**	**4X3=12**

COURSE-WISE SYLLABUS

Semester I

Year	I	**Course Code:** 21BSC1C1MAT1L	**Credits**	04
Sem.	1	**Course Title:** Algebra - I and Calculus – I	**Hours**	56

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	This course will enable the students to • Learn to solve system of linear equations. • Solve the system of homogeneous and non-homogeneous linear of m equations in n variables by using concept of rank of matrix, finding eigen values and eigen vectors. • Sketch curves in Cartesian, polar and pedal equations • Students will be familiar with the techniques of integration and differentiation of function with real variables. • Identify and apply the intermediate value theorems and L' Hospital rule.

Unit No.	**Course Content**	**Hours**
Unit I	**Matrix:** Recapitulation of Symmetric and Skew Symmetric matrices, Cayley- Hamilton theorem, inverse of matrices by Cayley-Hamilton theorem (Without Proof). Algebra of Matrices; Row and column reduction to Echelon form. Rank of a matrix; Inverse of a matrix by elementary operations; Solution of system of linear equations; Criteria for existence of non-trivial solutions of homogeneous system of linear equations. Solution of non-homogeneous system of linear equations. Eigen values and Eigen vectors of square matrices, real symmetric matrices and their properties, reduction of such matrices to diagonal form,	14
Unit II	**Polar Co-ordinates:** Polar coordinates, angle between the radius vector and tangent. Angle of intersection of two curves (polar forms), length of perpendicular from pole to the tangent, pedal equations. Derivative of an arc in Cartesian, parametric and polar forms, curvature of plane curve-radius of curvature formula in Cartesian, parametric and polar and pedal forms-center of curvature, asymptotes, evolutes and envelops.	14
Unit III	**Differential Calculus-I:** Limits, Continuity, Differentiability and properties. Properties of continuous functions. Intermediate value theorem, Rolle'sTheorem , Lagrange's Mean Value theorem, Cauchy's Mean value theorem and examples. Taylor's theorem, Maclaurin's series, Indeterminate forms and evaluation of limits using L'Hospital rule.	14

Unit IV	**Successive Differentiation**: nth Derivatives of Standard functions e^{ax+b}, $(ax+b)^m$, $\log(ax+b)$, $\sin(ax+b)$, $\cos(ax+b)$, $e^{ax}\sin(bx+c)$, $e^{ax}\cos(bx+c)$, Leibnitz theorem and its applications. Tracing of curves (standard curves)	14
Recommended Leaning Resources		
Print Resources	**References:** 1. University Algebra - N.S. Gopala Krishnan, New Age International (P) Limited 2. Theory of Matrices - B S Vatsa, New Age International Publishers. 3. Matrices - A R Vasista, Krishna PrakashanaMandir. 4. Differential Calculus - Shanti Narayan, S. Chand & Company, New Delhi. 5. Applications of Calculus, DebasishSengupta, Books and Allied (P) Ltd., 2019. 6. Calculus – LipmanBers, Holt, Rinehart & Winston. 7. Calculus - S Narayanan & T. K. ManicavachogamPillay, S. ViswanathanPvt. Ltd., vol. I & II. 8. Schaum's Outline of Calculus - Frank Ayres and Elliott Mendelson, 5th ed. USA:Mc. Graw. 9. Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.	

Year	I	**Course Code:** 21BSC1C1MAT1P	**Credits**	02
Sem.	I	**Course Title:**Practical's on Algebra - I and Calculus – I	**Hours**	56

Course Pre-requisites, if any:	Knowledge of Programming	
Formative Assessment Marks: 25	Summative Assessment Marks: 25	Duration of ESA: 03 hrs.

Course Outcomes	This course will enable the students to • Learn Free and Open Source Software (FOSS) tools for computer programming Solve problem on algebra and calculus theory studied in MATDSCT 1.1 by using FOSS software. Acquire knowledge of applications of algebra and calculus through FOSS Practical/Lab Work to be performed in Computer Lab (FOSS) • Suggested Software's: Maxima/Scilab/Maple/MatLab/Mathematica/Phython/R
	Lab Practical's: **Part A:** Introduction to the software and commands related to the topic. 1. Computation of addition and subtraction of matrices, 2. Computation of Multiplication of matrices. 3. Computation of Trace and Transpose of Matrix 4. Computation of Rank of matrix and Row reduced Echelon form. 5. Computation of Inverse of a Matrix using Cayley-Hamilton theorem. 6. Solving the system of homogeneous and non-homogeneous linear algebraic equations. **Part B:** 7. Finding the nth Derivative of e^{ax}, trigonometric and hyperbolic functions 8. Finding the nth Derivative of algebraic and logarithmic functions. 9. Finding the nth Derivative of $e^{ax+b}\sin(bx+c)$, $e^{ax+b}\cos(bx+c)$. 10. Finding the Taylor's and Maclaurin's expansions of the given functions. 11. Finding the angle between the radius vector and tangent. 12. Finding the curvatures of the given curves. 13. Tracing of standard curves (Cartesian, polar and parametric)

Evaluation Scheme for Lab Examination

Assessment Criteria		Marks
Program – 1 from Part A	Writing Program	03
	Execution of Program	07
Program -2 from Part B	Writing Program	03
	Execution of Program	07
Viva-Voce		05
Total		**25**

OPEN-ELECTIVE SYLLABUS :

A: For students of Science stream who have not chosen Mathematics as one of Core Subjects

Year	I	**Course Code:** 21BSC1O1MAT1	**Credits**	03
Sem.	I	**Course Title:** Mathematics – I	**Hours**	42

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	This course will enable the students to • Learn to solve system of linear equations. • Solve the system of homogeneous and non-homogeneous m linear equations by using the concept of rank of matrix, finding eigen values and eigen vectors. • Students will be familiar with the techniques of differentiation of function with real variables. • Identify and apply the intermediate value theorems and L' Hospital rule. • Learn to trace some standard curves.	
Unit No.	**Course Content**	**Hours**
Unit I	**Matrices:** Recapitulation of Symmetric and Skew Symmetric matrices, Cayley- Hamilton theorem, inverse of matrices by Cayley-Hamilton theorem (Without Proof). Algebra of Matrices; Row and column reduction, Echelon form. Rank of a matrix; Inverse of a matrix by elementary operations; Solution of system of linear equations; Criteria for existence of non-trivial solutions of homogeneous system of linear equations. Solution of non-homogeneous system of linear equations. Eigen values and Eigen vectors of square matrices, real symmetric matrices and their properties, reduction of such matrices to diagonal form.	14
Unit II	**Differential Calculus:** Limits, Continuity, Differentiability and properties. Intermediate value theorem, Rolle's Theorem, Lagrange's Mean Value theorem, Cauchy's Mean value theorem and examples. Taylor's theorem, Maclaurin's series, Indeterminate forms and examples.	14
Unit III	**Successive Differentiation**: nth Derivatives of Standard functions e^{ax+b}, $(ax+b)^m$, $\log(ax+b)$, $\sin(ax+b)$, $\cos(ax+b)$, $e^{ax}\sin(bx+c)$, $e^{ax}\cos(bx+c)$, Leibnitz theorem and its applications. Tracing of curves (standard curves)	14
Recommended Leaning Resources		

Print Resources	**References:** 1. University Algebra - N.S. Gopala Krishnan, New Age International (P) Limited 2. Theory of Matrices - B S Vatsa, New Age International Publishers. 3. Matrices – A. R. Vasista, Krishna PrakashanaMandir. 4. Applications of Calculus, DebasishSengupta, Books and Allied (P) Ltd., 2019. 5. Differential Calculus - Shanti Narayan, S. Chand & Company, New Delhi. 6. Calculus – LipmanBers, Holt, Rinehart & Winston. 7. Calculus – S. Narayanan & T. K. ManicavachogamPillay, S. ViswanathanPvt. Ltd.,vol. I & II. 8. Schaum's Outline of Calculus - Frank Ayres and Elliott Mendelson, 5th ed. USA: Mc.Graw. 9. Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.

B: For Students of other than Science Stream

Year	I	**Course Code:** 21BSC1O1MAT1	**Credits**	03
Sem.	I	**Course Title:** Business Mathematics – I	**Hours**	42
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	
Course Outcomes	This course will enable the students to • Translate the real word problems through appropriate mathematical modellling. • Explain the concepts and use equations, formulae and mathematical expression and relationship in a variety of context. • Finding the extreme values of functions. • Analyze and demonstrate the mathematical skill require in mathematically intensive areas in economics and business.			
Unit No.	**Course Content**		**Hours**	
Unit I	**Algebra** – Set theory and simple applications of Venn Diagram, relations, functions, indices, logarithms, permutations and combinations. Examples on commercial mathematics.		14	
Unit II	**Matrices**: Definition of a matrix; types of matrices; algebra of matrices. Properties of determinants; calculations of values of determinants upto third order; Adjoint of a matrix, elementary row and column operations; solution of a system of linear equations having unique solution and involving not more than three variables. Examples on commercial mathematics.		14	
Unit III	**Differential Calculus**: Constant and variables, functions, Limits & continuity. Differentiability and Differentiation, partial differentiation, rates as a measure, maxima, minima, Partial Derivatives up to second order; Homogeneity of functions and Euler's Theorem; Total Differentials; Differentiation of implicit function with the help of total differentials, Maxima and Minima; cases of one variable involving second or higher order derivatives; Cases of two variables involving not more than one constraint		14	
Recommended Leaning Resources				
Print Resources	**References:** 1. Basic Mathematics, Allel R.G.A, Macmillan, New Delhi. 2. Mathematics for Economics, Dowling, E.T. ,Schaum's Series, McGraw Hill, London. 3. Quantitative Techniques in Management, Vohra, N.D., Tata McGraw Hill, New Delhi. 4. Business Mathematics, Soni R.S., Pitamber Publishing House, Delhi			

Semester II

Year	I	**Course Code:** 21BSC1C1MAT1L	**Credits**	04
Sem.	II	**Course Title:** Algebra - II and Calculus –II	**Hours**	56

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	This course will enable the students to • Recognize the mathematical objects called Groups. • Link the fundamental concepts of groups and symmetries of geometrical objects. • Explain the significance of the notions of Cosets, normal subgroups and factor groups. • Understand the concept of differentiation and fundamental theorems in differentiation and various rules. • Find the extreme values of functions of two variables.

Unit No.	**Course Content**	**Hours**
Unit I	**Real Number System:** Recapitulation of number system. Countable and uncountable sets, standard theorems. Real line, bounded sets, suprimum and infimumof a set, completeness properties of R, Archimedean property of R. Intervals, neighborhood of a point, open sets, closed sets, limit points and Bolzano-Weierstrass theorem (Without proof).	14
Unit II	**Groups:** Definition of a group with examples and properties, congruence, problems. Subgroups, center of groups, order of an element of a group and its related theorems, cyclic groups, Coset decomposition, Factor groups, Lagrange's theorem and its consequences. Fermat's theorem, Euler's ϕ	14
Unit III	**Partial Derivatives**: Functions of two or more variables-explicit and implicit functions, partial derivatives. Homogeneous functions- Euler's theorem, total derivatives, differentiation of implicit and composite functions, Jacobians and standard properties and illustrative examples. Taylor's and Maclaurin's series for functions of two variables, Maxima-Minima of functions of two variables	14
Unit IV	**Integral Calculus**: Recapitulation of definite integrals and its properties. Line integral: Definition of line integral and basic properties, examples on evaluation of line integrals. Double integral: Definition of Double integrals and its conversion to iterated integrals. Evaluation of double integrals by changing the order of integration and change of variables. Computation of plane surface areas, volume	14

	underneath a surface of revolution using double integral. Triple integral: Definition of triple integrals and evaluation-change of variables, volume as triple integral. Differentiation under the integral sign by Leibnitz rule.	
Recommended Leaning Resources		
Print Resources	**References** 1. Topics in Algebra, I N Herstein, Wiley Eastern Ltd., New Delhi. 2. Higher algebra, Bernard & Child, Arihant, ISBN: 9350943199/ 9789350943199. 3. Modern Algebra, Sharma and Vasista, Krishna PrakashanMandir, Meerut, U.P. 4. Differential Calculus, Shanti Narayan, S. Chand & Company, New Delhi. 5. Integral Calculus, Shanti Narayan and P K Mittal, S. Chand and Co. Pvt. Ltd., 6. Schaum's Outline Series, Frank Ayres and Elliott Mendelson, 5th ed. USA: Mc. Graw Hill., 2008. 7. Mathematical Analysis, S C Malik, Wiley Eastern. 8. A Course in Abstract Algebra, Vijay K Khanna and S K Bhambri, Vikas Publications. 9. Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.	

<table>
<tr><td>Year</td><td>I</td><td colspan="2">Course Code: 21BSC1C1MAT1P</td><td>Credits</td><td>02</td></tr>
<tr><td>Sem.</td><td>II</td><td colspan="2">Course Title:Practical's on Algebra - II and Calculus – II</td><td>Hours</td><td>56</td></tr>
<tr><td colspan="2">Course Pre-requisites, if any:</td><td colspan="4">Knowledge of Programming</td></tr>
<tr><td colspan="2">Formative Assessment Marks: 25</td><td colspan="2">Summative Assessment Marks: 25</td><td colspan="2">Duration of ESA: 03 hrs.</td></tr>
<tr><td>Course Outcomes</td><td colspan="5">This course will enable the students to
• Learn Free and Open Source Software (FOSS) tools for computer programming
• Solve problem on algebra and calculus by using FOSS software's.
• Acquire knowledge of applications of algebra and calculus through FOSS Practical/Lab Work to be performed in Computer Lab
Suggested Software's: Maxima/Scilab/Maple/MatLab/Mathematica/Phython/R.</td></tr>
<tr><td></td><td colspan="5">Lab Practical's:

Part A:
1. Program for verification of binary operations.
2. Computation of identity and inverse elements of a group.
3. Program to construct Cayley's table and test abelian for given finite set.
4. Program to find all possible cosets of the given finite group.
5. Program to find generators and corresponding possible subgroups of a cyclic group.
6. Programs to verification of Lagrange's theorem with suitable examples.

Part B:
7. Program to verify the Euler's ϕfunction for a given finite group.
8. Program to verify the Euler's theorem and its extension
9. Programs to construct series using Maclaurin's expansion for functions of two variables.
10. Program to evaluate the line integrals with constant and variable limits.
11. Program to evaluate the Double integrals with constant and variable limits
12. Program to evaluate the Triple integrals with constant and variable limits.</td></tr>
</table>

Evaluation Scheme for Lab Examination

Assessment Criteria		Marks
Program – 1 from Part A	Writing Program	03
	Execution of Program	07
Program -2 from Part B	Writing Program	03
	Execution of Program	07
Viva-Voce		05
Total		**25**

OPEN-ELECTIVE SYLLABUS :

A: For students of Science stream who have not chosen Mathematics as one of CoreSubjects

Year	I	**Course Code:** 21BSC1O1MAT1	**Credits**	03
Sem.	II	**Course Title:** Mathematics – II	**Hours**	42

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	This course will enable the students to • Recognize the mathematical objects called Groups. • Link the fundamental concepts of groups and symmetries of geometrical objects. • Explain the significance of the notions of Cosets, normal subgroups and factor groups. • Understand the concept of differentiation and fundamental theorems in differentiation and various rules. • Find the extreme values of functions of two variables. • To understand the concepts of multiple integrals and their applications.

Unit No.	**Course Content**	**Hours**
Unit I	**Groups**: Definition of a group with examples and properties, congruence, problems. Subgroups, center of groups, order of an element of a group and its related theorems, cyclic groups, Coset decomposition, Factor groups, Lagrange's theorem and its consequences. Fermat's theorem and Euler's ϕfunction.	14
Unit II	**Partial Derivatives**: Functions of two or more variables-explicit and implicit functions, partial derivatives. Homogeneous functions- Euler's theorem, total derivatives, differentiation of implicit and composite functions, Jacobians and standard properties and illustrative examples. Taylor's and Maclaurin's series for functions of two variables, Maxima-Minima of functions of two variables.	14
Unit III	**Integral Calculus**: Recapitulation of definite integrals and its properties. Line integral: Definition of line integral and basic properties, examples on evaluation of line integrals. Double integral: Definition of Double integrals and its conversion to iterated integrals. Evaluation of double integrals by changing the order of integration and change of variables. Computation of plane surface areas, volume underneath a surface of revolution using	14

	double integral. Triple integral: Definition of triple integrals and evaluation-change of variables, volume as triple integral. Differentiation under the integral sign by Leibnitz rule.	
Recommended Leaning Resources		
Print Resources	**References:** 1. Topics in Algebra, I N Herstein, 2nd Edition, Wiley Eastern Ltd., New Delhi. 2. Higher algebra, Bernard & Child, Arihant Pub. 3. Modern Algebra, Sharma and Vasishta, Krishna PrakashanMandir, Meerut, U.P. 4. A Course in Abstract Algebra, Vijay K Khanna and S K Bhambri, Vikas Publications. 5. Differential Calculus, Shanti Narayan, S. Chand & Company, New Delhi. 6. Integral Calculus, Shanti Narayan and P K Mittal, S. Chand and Co. Pvt. Ltd., 7. Schaum's Outline Series, Frank Ayres and Elliott Mendelson, 5th ed. USA: McGraw Hill., 2008. 8. Mathematical Analysis, S C Malik, Wiley Eastern. 9. Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.	

SEMESTER – III

Year	II	**Course Code:** 21BSC3C3MAT1L	**Credits**	04
Sem.	III	**Course Title: Ordinary Differential Equations and Real Analysis – I**	**Hours**	56

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	**Course Learning Outcomes**: This course will enable the students to: • Solve first-order non-linear differential equations and linear differential equations. • To model problems in nature using Ordinary Differential Equations. • Formulate differential equations for various mathematical models • Apply these techniques to solve and analyze various mathematical models. • Understand the fundamental properties of the real numbers that lead to define sequence and series, the formal development of real analysis. • Learn the concept of Convergence and Divergence of a sequence. • Able to handle and understand limits and their use in sequences, series, differentiation, and integration. • Apply the ratio, root, alternating series, and limit comparison tests for convergence and absolute convergence of an infinite series.	
Unit No.	**Course Content**	**Hours**
Unit I	**Ordinary Differential Equations:** Recapitulation of Differential Equations of first order and first degree, Exact Differential equations, Necessary and sufficient condition for the equations to be exact, Reducible to the exact differential equations. Differential equations of the first order and higher degree: Equations solvable for p, x, y. Clairaut's equation and singular solution. Orthogonal trajectories of Cartesian and polar curves.	14
Unit II	Linear differential equations of the nth order with constant coefficients. Particular Integrals when the RHS is of the form e^{ax}, sin(ax+b), cos(ax+b), x^n, e^{ax} V and x V (with proofs), where V is a function of x. Cauchy – Euler equations, Legendre differential equations, Method of variation of parameters. Simultaneous differential equations with two and more than two variables. Condition for integrability of total differential equations P dx +Q dy+ R dz = 0.	14
Unit III	**Real Analysis – I :** **Sequences**: Sequences of real numbers, Bounded sequences. Limit of a sequence. convergent, divergent,	14

	and oscillatory sequences. Monotonic sequences. Algebra of convergent sequences. Limit points of a sequence. Bolzano Weierstrass theorem for sequence. Limit superior and limit inferior of sequences. Cauchy's first and second theorem on limits of a sequence. Cauchy's general principle for convergence of a sequence. Subsequence and their properties.	
Unit IV	**Infinite Series:** Definition of convergent, divergent and oscillatory series. Series of non-negative terms, Cauchy's general principle of convergence. Geometric series, P-series (Harmonic series). Comparison tests for positive term series. D'Alembert's ratio test, Raabe's test. Cauchy's Root test and Cauchy's integral test. Alternating series. Leibnitz's theorem. Absolute convergence and conditional convergence of a series. Summation of series: Binomial, exponential and logarithmic.	**14**
Recommended Leaning Resources		
Print Resources	**References:** 1. M.D.Raisinghania, Ordinary Differential Equations & Partial Differential Equations, S. Chand & Company, New Delhi. 2. J. Sinha Roy and S Padhy: A course of Ordinary and Partial Differential Equation, Kalyani Publishers, New Delhi. 3. D. Murray, Introductory Course in Differential Equations, Orient Longman (India) 4. W. T. Reid, Ordinary Differential Equations, John Wiley, New Delhi. 5. M. L. Khanna, Differential Equations, Jai PrakashNath& Co. Meerut. 6. S. L. Ross, Differential Equations, 3rd Ed., John Wiley and Sons, 1984. 7. R. G. Bartle and D. R. Sherbert, Introduction to Real Analysis, 3rd Ed., John Wiley and Sons (Asia) Pvt. Ltd., Singapore, 2015. 8. Gerald G. Bilodeau, Paul R. Thie, G.E. Keough, An Introduction to Analysis, 2nd Ed., Jones & Bartlett, 2010. 9. K. A. Ross, Elementary Analysis: The Theory of Calculus (2^{nd} edition), Springer, 2013 10. S. K. Berberian, A First Course in Real Analysis, Springer Verlag, New York, 1994. 11. T. Apostol, Mathematical Analysis, Narosa Publishing House 12. M.L Khanna and L.S. Varhiney, Real Analysis by, Jai Prakash Nath & Co. Meerut. 13. Kreyzig, Advanced Engineering Mathematics, John Wiley, New Delhi.	

Practicals

<table>
<tr><td>Year</td><td>II</td><td colspan="3">Course Code: 21BSC3C3MAT1P</td><td>Credits</td><td>02</td></tr>
<tr><td>Sem.</td><td>III</td><td colspan="3">Course Title: Practicals on Ordinary Differential Equations and Real Analysis – I</td><td>Hours</td><td>56</td></tr>
<tr><td colspan="2">Course Pre-requisites, if any</td><td colspan="5">NA</td></tr>
<tr><td colspan="2">Formative Assessment Marks: 25</td><td colspan="2">Summative Assessment Marks: 25</td><td colspan="3">Duration of ESA:.02 hrs.</td></tr>
<tr><td>Course Outcomes</td><td colspan="6">Course Learning Outcomes: This course will enable the students to gain handson experience of
• Free and Open Source software (FOSS) tools or computer programming.
• Solving exact differential equations
• Ploting orthogonal trajectories
• Finding complementary function and particular integral of linear and homogeneous differential equations.
• Acquire knowledge of applications of real analysis and differential equations.
• Verification of convergence/divergence of different types of series</td></tr>
<tr><td></td><td colspan="5">Course Content</td><td>Hours</td></tr>
<tr><td></td><td colspan="5">Practicals/Lab Work to be performed in Computer Lab

Use open-source software to executive the practical problems. (Maxima/ Scilab/MatLab /Mathematica/Python

1. Fundamentals of Ordinary differential equations and Real analysis using FOSS
2. Verification of exactness of a differential equation
3. Plot orthogonal trajectories for Cartesian and polar curves
4. Solutions of differential equations that are solvable for x, y, p.
5. To find the singular solution by using Clairaut’s form.
6. Finding the Complementary Function and Particular Integral of linear and homogeneous differential equations with constant coefficients and plot the solutions.
7. Finding the Particular Integral of differential equations up to second order and plot the solutions.
8. Solutions to the Total and Simultaneous differential equations and plot the solutions.
9. Test the convergence of sequences
10. Verification of exponential, logarithm and binomial series.
11. Verification of geometric series, p-series, Cauchy’s Integral test, root test, and D Alembert’s Test
12. Examples on a series of positive terms.
13. Examples on alternating series using Leibnitz’s theorem.
14. Finding the convergence of series using Cauchy’s criterion for partial sums.</td><td>56</td></tr>
</table>

Open Elective Course

(For students of Science stream who have not chosen Mathematics as one of the Core Course)

Year	II	**Course Code:** 21BSC3O3MAT3-A	**Credits**	03
Sem.	III	**Course Title: Ordinary Differential Equations**	**Hours**	42
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	

Course Outcomes	**Course Learning Outcomes**: This course will enable the students to: • Understand the concept of the differential equation and their classification • Know the meaning of the solution of a differential equation. • To solve first-order ordinary differential equations. • To Solve exact differential equations and Converts to separable and homogenous equations to exact differential equations by integrating factors. • To Solve Bernoulli differential equations. • To find the solution to higher-order linear differential equations.

Unit No.	**Course Content**	**Hours**
Unit I	Recapitulation of Differential Equations of first order and first degree, Exact Differential equations, Necessary and sufficient condition for the equations to be exact, Reducible to the exact differential equations.	14
Unit II	Differential equations of the first order and higher degree: Equations solvable for p, x, y. Clairaut's equation and singular solution. Orthogonal trajectories of Cartesian and polar curves.	14
Unit III	Linear differential equations of the nth order with constant coefficients. Particular Integrals when the RHS is of the form e^{ax}, sin(ax+b), cos(ax+b), x^n, e^{ax} V and x V (with proofs), where V is a function of x.	14

Recommended Leaning Resources

Print Resources	**References:** 1. M.D.Raisinghania, Ordinary Differential Equations & Partial Differential Equations, S. Chand & Company, New Delhi. 2. J. Sinha Roy and S Padhy: A Course of Ordinary and Partial Differential Equation Kalyani Publishers, New Delhi. 3. D Murray, Introductory Course in Differential Equations, Orient Longman (India) 4. W T Reid, Ordinary Differential Equations, John Wiley, New Delhi 5. M. L. Khanna, Differential Equations, Jai PrakashNath& Co. Meerut. Shepley L. Ross, Differential Equations, 3rd Ed., John Wiley and Sons, 1984.

Open Elective Course

(For students of other than Science stream)

Year	II	**Course Code:** 21BSC3O3MAT3-B	**Credits**	03
Sem.	III	**Course Title: Quantitative Mathematics**	**Hours**	42

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	**Course Outcomes:** This course will enable the students to: • Understand number system and fundamental operations • Understand the concept of linear quadratic and simultaneous equations and their applications in real life problems • Understand and solve the problems based on Age. • Solve Speed and Distance related problems.

Unit No.	**Course Content**	**Hours**
Unit I	NumberSystem Numbers, Operations on Numbers,Tests on Divisibility, HCF and LCM of numbers. Decimal Fractions, Simplification, Square roots and Cube roots - Problems thereon. Surds and Indices. Illustrations thereon.	14
Unit II	Theory of equations Linear equations, quadratic equations, simultaneous equations in two variables, simple application problems - Problems on Ages, Problems on conditional Age calculations, Present & Past age calculations.	14
Unit III	Quantitative Aptitude Percentage, Average, Average Speed-problems.Time and distance, problems based on trains, problems on-work and time,work and wages, clock and calendar.	14

Recommended Leaning Resources

Print Resources

References:

1. R.S. Aggarwal, *Quantitative Aptitude*, S. Chand and Company Limited, NewDelhi-110 055 .
2. Abhijit Guha, *QuantitativeAptitude*,5th Edition,Mc.Grawhillpublications.2014.
3. R V Praveen,*QuantitativeAptitudeand Reasoning*,PHI publishers.
4. R S Aggarwal, Objective Arithmetic, S. Chand & Company Ltd.
5. Qazi Zameerddin,Vijay K Khanna, S K Bhambri, *BusinessMathematics-II Edition.*
6. S. K. Sharma and Gurmeet Kaur, Business Mathematics , Sultan Chand & Sons.
7. Hazarika Padmalochan, A Text Book of Business mathematics for B.Com and BBA Course, Chand Publication.
8. J K Thukrol, Business Mathematics, abci book:2020 First Edition.
9. N. G. Das and J. K. Das, Business Mathematics and Statics, Mc Graw Hill Education, 2017.

Open Elective Course

(For Students of other than Science Stream)

Year	II	**Course Code:** 21BSC3O3MAT3-C	**Credits**	03
Sem.	III	**Course Title: Vedic Mathematics**	**Hours**	42

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	**Course Outcomes:** This course will enable the students to: • Understand number system and fundamental operations • Understand the concept of linear quadratic and simultaneous equations and their applications in real life problems • Understand and solve the problems based on Age. • Solve Speed and Distance related problems.	
Unit No.	**Course Content**	**Hours**
Unit I	**Multiplication:** 1. Ekadhikenpurven method (multiplication of two numbers of two digits). 2. Eknunenpurven method (multiplication of two numbers of three digits). 3. Urdhvatiragbhyam method (multiplication of two numbers of three digits). 4. Nikhilam Navtashchramam Dashtaha (multiplication of two numbers of three digits). 5. Combined Operations.	14
Unit II	**Division and Divisibility** **Part A: Division** 1. NikhilamNavtashchramamDashtaha (two digits divisor) 2. ParavartyaYojyet method (three digits divisor) **Part B:Divisibility** 1. Ekadhikenpurven method (two digits divisor) 2. Eknunenpurven method (two digits divisor)	14
Unit III	**Power and Root Power:** 1. Square (two digit numbers) 2. Cube (two digit numbers). **Root:** 1. Square root (four digit number) 2. Cube root (six digit numbers). Solution of linear simultaneous equations.	14
Recommended Leaning Resources		
Print Resources	**Reference Books:** 1. Vedic Mathematics, Motilal Banarsi Das, New Delhi. 2. Vedic Ganita: Vihangama Drishti-1, SikshaSanskritiUthana Nyasa, New Delhi. 3. Vedic GanitaPraneta, Siksha Sanskriti Uthana Nyasa, New Delhi. 4. Vedic Mathematics: Past, Present and Future, Siksha Sanskriti Uthana Nyasa, New Delhi. 5. Leelavati, ChokhambbaVidya Bhavan, Varanasi. 6. Bharatiya Mathematicians, Sharda Sanskrit Sansthan, Varanasi.	

SEMESTER – IV

<table>
<tr><td>Year</td><td>II</td><td colspan="3">Course Code: 21BSC4C4MAT2L</td><td>Credits</td><td>04</td></tr>
<tr><td>Sem.</td><td>IV</td><td colspan="3">Course Title: Partial Differential Equations and Integral Transforms</td><td>Hours</td><td>56</td></tr>
<tr><td colspan="2">Course Pre-requisites, if any</td><td colspan="5">NA</td></tr>
<tr><td colspan="2">Formative Assessment Marks: 40</td><td colspan="2">Summative Assessment Marks: 60</td><td colspan="3">Duration of ESA:.02 hrs.</td></tr>
<tr><td>Course Outcomes</td><td colspan="6">Course Learning Outcomes: This course will enable the students to
• Solve the Partial Differential Equations of the first order and second order
• Formulate, classify and transform partial differential equations into canonical form.
• Solve linear and non-linear partial differential equations using various methods; and apply these methods to solving some physical problems.
• Able to take more courses on wave equation, heat equation, and Laplace equation.
• Solve PDE by Laplace Transforms and Fourier Transforms</td></tr>
<tr><td>Unit No.</td><td colspan="5">Course Content</td><td>Hours</td></tr>
<tr><td>Unit I</td><td colspan="5">Basic concepts–Formation of a partial differential equations by elimination of arbitrary constants and functions, Solution of partial differential equations – Solution by Direct integration, Lagrange’s linear equations of the form Pp + Qq = R , Standard types of first order non-linear partial differential equations, The integrals of the non-linear equation by Charpit’s method.</td><td>14</td></tr>
<tr><td>Unit II</td><td colspan="5">Homogeneous linear partial differential equations with constant coefficients. Partial differential equations of the second order. Classification of second-order partial differential equations, canonical forms. Classification of second order linear equations as hyperbolic, parabolic, and elliptic. Solutions of the Heat equation, Laplace equation and Wave equation (using separation of variables).</td><td>14</td></tr>
<tr><td>Unit III</td><td colspan="5">Laplace Transforms: Definition, Basic Properties. Laplace transforms of some standard functions. Laplace transform of Periodic functions. Laplace transform of derivative and integral of a function. Heaviside function. Dirac-delta function. Convolution theorem. Inverse Laplace transforms and its properties. Solution of differential equations by using Laplace transforms.</td><td>14</td></tr>
<tr><td>Unit IV</td><td colspan="5">Fourier Series and Transforms: Periodic functions. Fourier Coefficients. Fourier series of functions with period 2π and period 2L. Fourier series of even and odd functions. Half range Cosine and Sine series. Fourier Transforms - Finite Fourier Cosine and Sine transform.</td><td>14</td></tr>
</table>

	Transforms of derivates**.** Applications of Fourier Transforms**.**	
Recommended Leaning Resources		
Print Resources	**References:** 1. D. A. Murray, Introductory Course in Differential Equations, Orient and Longman 2. H. T. H.Piaggio, Elementary Treatise on Differential Equations and their Applications, CBS Publisher & Distributors, Delhi,1985. 3. G. F. Simmons, Differential Equations, Tata McGraw Hill. 4. S. L. Ross, Differential Equations, 3rd Ed., John Wiley and Sons, India, 2004. 5. M. D. Raisinghania, Ordinary Differential Equations & Partial Differential Equations, S. Chand & Company, New Delhi. 6. K.Sankara Rao, Introduction to Partial Differential Equations: PHI, Third Edition, 2015. 7. I. N. Sneddean, Elements of Partial differential equations, McGraw-Hill International Editions, 1986. 8. R. Murray and L. Spiegal (Schaum's Series), Laplace Transforms 9. Goel and Gupta, Laplace Transform. 10. Sudhir Kumar, Integral Transform Methods in Science & Engineering, CBS Engineering Series, 2017. 11. Murray R. Spiegal L, Fourier Transforms, Schaum' Series, 12. Earl David Rainville and Philip Edward Bedient–A short course in Differential Equations, Prentice Hall College Div; 6th Edition. 13. Sathya Prakash, Mathematical Physics, S Chand and Sons, New Delhi.	

Practicals

<table>
<tr><td>Year</td><td>II</td><td colspan="3">Course Code: 21BSC4C4MAT2P</td><td>Credits</td><td>02</td></tr>
<tr><td>Sem.</td><td>IV</td><td colspan="3">Course Title: Practical's on Partial Differential Equations and Integral Transforms</td><td>Hours</td><td>56</td></tr>
<tr><td colspan="2">Course Pre-requisites, if any</td><td colspan="5">NA</td></tr>
<tr><td colspan="2">Formative Assessment Marks: 25</td><td colspan="2">Summative Assessment Marks: 25</td><td colspan="3">Duration of ESA:.02 hrs.</td></tr>
<tr><td>Course Outcomes</td><td colspan="6">Course Learning Outcomes: This course will enable the students to
• Learn Free and Open Source software (FOSS) tools or computer programming.
• Solve problems on Partial Differential Equations and Integral Forms
• To find Laplace transform of various functions
• To finf the Fourier Transform of periodic functions
• To solve differential equations by using Integral transforms.</td></tr>
<tr><td></td><td colspan="5">Course Content</td><td>Hours</td></tr>
<tr><td></td><td colspan="5">Practicals/Lab Work to be performed in Computer Lab
Programs using Scilab/Maxima/Python:
Elements of Partial differential equations and Integral transforms using FOSS
1 Solutions of Linear Partial differential equations of type1 to type4 and Lagrange's method
2 Solutions of partial differential equation using Charpit's method.
3 Solutions of Second order homogenous partial differential equation with constant coefficients.
4 Solutions to the partial differential equations using separation of variables method (Heat/ Wave/Laplace).
5 Finding the Laplace transforms of some standard and periodic functions.
6 Finding the inverse Laplace transform of simple functions
7 Verification of Convolution Theorem.
8 To solve ordinary linear differential equation using Laplace transform.
9 To solve Integral equation using Laplace transform.
10 To find full range Fourier series of some simple functions with period 2π and 2L
11 To find Half range sine and cosine series of some simple functions and ploting them.
12 To find Cosine Fourier transforms.
15. To find Sine Fourier transforms.</td><td>56</td></tr>
</table>

Open Elective Course

(For students of Science stream who have not chosen Mathematics as one of the Core Course)

Year	II	**Course Code:** 21BSC4O4MAT4-A	**Credits**	03
Sem.	III	**Course Title: Partial Differential Equations**	**Hours**	42
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	

Course Outcomes	**Course Learning Outcomes**: This course will enable the students to • explain the concept of the differential equation. • Classifies the differential equations concerning their order and linearity. • Explains the meaning of the solution of a differential equation. • solve first-order ordinary differential equations. • Solves exact differential equations and Converts separable and homogenous equations to exact differential equations by integrating factors. • Solves Bernoulli differential equations. • Will be able to find the solution to higher-order linear differential equations.

Unit No.	**Course Content**	**Hours**
Unit I	Basic concepts–Formation of a Partial differential equations by elimination of arbitrary constants and functions – Solution of partial differential equations – Solution by Direct integration, Lagrange's linear equations of the form Pp + Qq = R .	14
Unit II	Standard types of first order non-linear partial differential equations, The integrals of the non-linear equation by Charpit's method.Homogeneous Linear partial differential equations with constant coefficients. Partial differential equations of the second order. Classification of second-order partial differential equations, canonical forms.	14
Unit III	Classification of second order linear equations as hyperbolic, parabolic, and elliptic. Solutions of the Heat equation, Laplace equation and Wave equation (using separation of variables).	14

Recommended Leaning Resources

Print Resources	**References:** 1. D.A. Murray, Introductory course in Differential Equations, Orient and Longman 2. H.T. H.Piaggio, Elementary Treatise on Differential Equations and their applications, C.B.S Publisher & Distributors, Delhi,1985. 3. G.F.Simmons, Differential Equations, Tata McGraw Hill 14 4. S.L. Ross, Differential Equations, 3rd Ed., John Wiley and Sons, India, 2004. 5. M.R. Speigel, Schaum's outline of Laplace Transform 6. M. D. Raisinghania, Ordinary Differential equations & Partial differential equations, S. Chand & Company, New Delhi. 7. K.Sankara Rao, Introduction to Partial Differential Equations: PHI, Third Edition, 2015. 8. I. N. Snedden, Elements of Partial differential equations.

Open Elective Course

(For students of other than science stream)

Year	II	**Course Code:** 21BSC4O4MAT4-B	**Credits**	03
Sem.	IV	**Course Title: Mathematical Finance**	**Hours**	42

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	Course Learning Outcomes: Thiscourse will enable the students to • Understand how compute profit and loss, discount and Banker's discount. • Understand the concept of Linear equations and inequalities and their use in the solving the Linear Programming Problems. • Formulation of Transportation Problem and its application in routing problem.

Unit No.	**Course Content**	**Hours**
Unit I	Commercial Arithmetic Bill of exchange, Bill of discounting procedure. Basic formula related to profit, loss, discount and brokerage, Successive discount, True discount, Banker's discount.	14
Unit II	Linear Programming Linear equations and inequalities- Rectangular coordinates, straight line, parallel and intersecting lines and linear inequalities, Introduction to linear programming, Mathematical formulation of LPP, Solution of a LPP by graphical method, special cases in graphical method	14
Unit III	Transportation problem Introduction, Formulation of Transportation problem, Initial basic feasible solution, Steps insolving a transportation problem, optimality check, special cases in Transportation problem. The Traveling salesman Problem (Routing Problem).	14

Recommended Leaning Resources

Print Resources	Reference Books: 1. R S Aggarwal, Objective Arithmetic, S. Chand & Company Ltd. 2. Mizrahi and Sullivan, Mathematics for Business and Social Sciences an Application approach. 3. Qazi Zameeruddin, Vijay K Khanna, S K Bhambri, Business Mathematics-II Edition, Vikas Publishing House. 4. S. Kalavathy, Operation Research, Fourth edition, Vikas publication house Pvt. Ltd. 5. Sreenivasa Reddy M, Operations Research 2nd edition, Sanguine Technical publishers, Bangalore. 6. S. D. Sharma, Operation Research

Open Elective Course

(For students otherthan science stream)

Year	II	**Course Code:** 21BSC4O4MAT4-C	**Credits**	03
Sem.	IV	**Course Title: Mathematics for Social Sciences**	**Hours**	42
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	

Course Outcomes	Course Learning Outcomes: Thiscourse will enable the students to • Understand the mathematical concept of sets and counting problems. • Understand the concept of Probalitity and its applications in social sciences. • Understand the concept of limits and continuity of functions and its applications in business and social sciences.

Unit No.	Course Content	Hours
Unit I	Sets, counting, permutations, combinations, counting problems, binomial theorem and problems thereon. Probability – Introduction, sample space and assignment of probabilities, properties of the probability of an event, probability of equally likely events, conditional probability, Baye's formula and examples thereon.	14
Unit II	Limit and continuity, Derivative- interpretation, derivative formulas, general derivatives for differentiation, composit functions, higher order derivaties and problems thereon.	14
Unit III	Applications of the derivative – Relative maxima and Relative minima, Absolute maximum and Absolute minimum, Applied problems, Concavity, Asymptotes, Marginal analysis, Models-Maximizing tax revenue, Otimal trade-in time, and minimizing inventory cost.	14

Recommended Leaning Resources

Print Resources	**REFERENCE BOOKS** 1. Abe Mizrahi and Michael Sullivan, Mathematics for Business and Social Sciences and Applied Approach – Third Edition, Wieley. 2. Carl P. Simon and Lawrence Blume, Mathematics for Economists, Viva Books Private Limited, New Delhi, 2015. 3. L. Peccati, M. D'Amico and M. Cigola , Maths for Social Sciences, , Springer.

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS

as per the Choice Based Credit System (CBCS) designed in accordance with
Learning Outcomes-Based Curriculum Framework (LOCF)
of National Education Policy (NEP) 2020
for

Bachelor of Science

(Mathematics)

w.e.f.

Academic Year 2021-22 and onwards

Board of studies (UG) committee

S.No.	Name	Designation
1.	Dr.Vijayalaxmi S. Shigehalli	Chairperson
2.	Dr. D. Radhakrishna	Member
3.	Dr.VithalYashavantPatil	Member
4.	Shri. S.K. Girigol	Co-opted Member
5.	Shri. Nagasuresh	Co-opted Member

Dr.Vijayalaxmi S. Shigehalli
Dean of Science Faculty
Rani Channamma University, Belagavi

Dr.Vijayalaxmi S. Shigehalli
Chairperson BoS(UG)
Dearment of Mathematics,
RCU Belagavi

BOS COMMITTEE (NEP- MATHEMATICS)

B.Sc. MATHEMATICS (III & IV SEM) PROGRAM 2022-23

1	Prof. Vishwanath B. Awati, Department of Mathematics, RCU Belagavi	Chairman
2	Dr. L. M. Angadi, Govt First Grade College, Chikkodi	Member
3	Prof. (Smt) M. S. Shobani Sri Jagadamba Arts and Science First Grade College, Hittanallitanda LT, Sindagi	Member

PREAMBLE

The subject wise expert committee to draft model curriculum contents in Mathematics constituted by the Department of Higher Education, Government of Karnataka, Bengaluru vide GO No. ED 260 UNE 2019 (PART-1) DATED 13.08.2021 is pleased to submit its partial report on the syllabus for the First Year (First & Second Semesters) B.A./B.Sc.(Basic/Honors) Mathematics and detailed Course Structure for B.A./B.Sc.(Honors) Mathematics and M.Sc. (One Year) Mathematics.

The committee discussed various models suggested by the Karnataka State Higher Education Council in its joint meetings with the Chairpersons of Board of Studies of all state universities in Karnataka and resolved to adopt Model IIA (Model Program Structure for the Bachelor of Arts (Basic/Hons.)/ Bachelor of Science(Basic/Hons.) for the subjects with practical's with Mathematics as Major/Minor.

To achieve the core objectives of the National Education Policy 2020 it is unanimously resolved to introduce computer based practical's for the Discipline Core (DSC) courses by using Free and Open Source Software's (FOSS) tools for implementation of theory based on DSC courses as it is also suggested by the LOCF committee that the papers may be taught using various Computer Algebra System (CAS) software's such as Mathematica, MATLAB, Maxima and R to strengthen the conceptual understanding and widen up the horizon of students' self-experience. In view of these observations the subject expert committee suggested the software's Phython /R /Maxima/ Scilab / Maple/ MatLab / Mathematica for hands on experience of implementation of mathematical concepts in computer-based lab.

The expert committee suggests the implementation this curriculum structure in all the Departments of Mathematics in Universities/Colleges in Karnataka.

The subject expert committee designed the Course Learning Outcome (CO) to help the learners to understand the main objectives of studying the courses by keeping in mind of the Programme outcomes (PO) of the graduate degree with honors in Mathematics or a graduate degree with Mathematics as a major subject.

As the Mathematics subject is a vast with several branches of specializations, it is difficult for every student to learn each branch of Mathematics, even though each paper has its own importance. Hence the subject expert committee suggests number of elective papers (for both Discipline electives and Open Electives) along with Discipline Core Courses. The BoS in Mathematics of universities may include additional electives based on the expertise of their staff and needs of the students'. A student can select elective paper as per her/his needs and interest.

PROGRAM OUTCOMES:

1. **Disciplinary Knowledge:** Bachelor degree in Mathematics is the culmination of in-depth knowledge of Algebra, Calculus, Geometry, differential equations and several other branches of pure and applied mathematics. This also leads to study the related areas such as computer science and other allied subjects.
2. **Communication Skills:** Ability to communicate various mathematical concepts effectively using examples and their geometrical visualization. The skills and knowledge gained in this program will lead to the proficiency in analytical reasoning which can be used for modelling and solving of real-life problems.
3. **Critical thinking and analytical reasoning:** The students undergoing this programme acquire ability of critical thinking and logical reasoning and capability of recognizing and distinguishing the various aspects of real life problems.
4. **Problem Solving:** The Mathematical knowledge gained by the students through this programme develop an ability to analyze the problems, identify and define appropriate computing requirements for its solutions. This programme enhances students overall development and also equip them with mathematical modelling ability, problem solving skills.
5. **Research related skills**: The completing this programme develop the capability of inquiring about appropriate questions relating to the Mathematical concepts in different areas of Mathematics.
6. **Information/digital Literacy:** The completion of this programme will enable the learner to use appropriate software's to solve system of algebraic equation and differential equations.
7. **Self-directed learning:** The student completing this program will develop an ability of working independently and to make an in-depth study of various notions of Mathematics.
8. **Moral and ethical awareness/reasoning:** The student completing this program will develop an ability to identify unethical behavior such as fabrication, falsification or misinterpretation of data and adopting objectives, unbiased and truthful actions in all aspects of life in general and Mathematical studies in particular.
9. **Lifelong learning:** This programme provides self-directed learning and lifelong learning skills. This programme helps the learner to think independently and develop algorithms and computational skills for solving real word problems.
10. Ability to peruse advanced studies and research in pure and applied Mathematical sciences.

RANI CHANNAMMA UNIVERSITY
Vidyasangama, NH-4, Belagavi. -591156

Proposed Curricular and Credits Structure under Choice Based Credit System [CBCS] of Mathematics Major& One Minor Discipline Scheme for the Four Years Mathematics B.Sc. Undergraduate Honors Programme with effect from 2021-22.

SEMESTER-I											
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/ week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L1	21BSC1L1LK1	Kannada	40	60	100	4	-	-	3	2
	21BSC1L1LFK1	Functional Kannada								
L2	21BSC1L2LEN2	English	40	60	100	4	-	-	3	2
	21BSC1L2LHI2	Hindi								
	21BSC1L2LSN2	Sanskrit								
	21BSC1L2LTE2	Telugu								
	21BSC1L2LUR2	Urdu								
DSC1	21BSC1C1MAT1L	Algebra - I and Calculus – I	40	60	100	4	-	-	4	2
	21BSC1C1MAT1P	Theory based Practical's on Algebra -I and Calculus – I	25	25	50	-	-	4	2	3
DSC1	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
SEC1	21BSC1SE1CS1	Digital Fluency	25	25	50	1	-	2	2	2
VBC1	21BSC1V1PE1	Physical Education-Yoga	25	-	25	-	-	2	1	-
VBC2	21BSC1V2HW1	Health & Wellness	25	-	25	-	-	2	1	-
OEC1	21BSC1O1MAT1-A	Mathematics – I	40	60	100	3	-	-	3	2
	21BSC1O1MAT1-B	Business Mathematics – I								
			Total Marks		**700**	**Semester Credits**			**25**	

SEMESTER-III

SEMESTER-II

Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			IA	SEE	Total	L	T	P		
L3	21BSC2L3LK2	Kannada	40	60	100	4	-	-	3	2
	21BSC2L3FKL2	Functional Kannada								
L4	21BSC2L4EN2	English	40	60	100	4	-	-	3	2
	21BSC2L4HI2	Hindi								
	21BSC2L4SN2	Sanskrit								
	21BSC2L4TE2	Telugu								
	21BSC2L4UR2	Urdu								
DSC2	21BSC2C2MAT2L	Algebra - II and Calculus –II	40	60	100	4	-	-	4	2
	21BSC2C2MAT2P	Theory based Practical's on Algebra- II and Calculus – II	25	25	50	-	-	4	2	3
DSC2	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
AECC1	21BSC2AE1ES2	Environmental Studies	20	30	50	3	-	-	2	2
VBC3	21BSC2V3PE2	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC4	21BSC2V4NC1	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC2	21BSC2O2MAT2-A	Mathematics – II	40	60	100	3	-	-	3	2
	21BSC2O2MAT2-B	Business Mathematics-II								
Total Marks					**700**	**Semester Credits**			**25**	

Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			IA	SEE	Total	L	T	P		
L5	21BSC3L5LK3	Kannada	40	60	100	4	-	-	3	2
	21BSC3L5LFK3	Functional Kannada								
L6	21BSC3L6EN3	English	40	60	100	4	-	-	3	2
	21BSC3L6HI3	Hindi								
	21BSC3L6SN3	Sanskrit								
	21BSC3L6TE3	Telugu								
	21BSC3L6UR3	Urdu								
DSC3	21BSC3C3MAT1L	Ordinary Differential Equations and Real Analysis-I	40	60	100	4	-	-	4	2
	21BSC3C3MAT1P	Theory based Practical's on Ordinary Differential Equations and Real Analysis-I	25	25	50	-	-	4	2	3
DSC3	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
SEC2	21BSC3SE2ES2	Artificial Intelligence	25	25	50	1	-	2	2	2
VBC5	21BSC3V5PE3	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC6	21BSC3V6NC2	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC3	21BSC3O3MAT3-A	Ordinary Differential Equations	40	60	100	3	-	-	3	2
	21BSC3O3MAT3-B	Quantitative Mathematics								
	21BSC3O3MAT3-C	Vedic Mathematics								
Total Marks					**700**	**Semester Credits**			**25**	

SEMESTER-IV										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L7	21BSC4L7LK4	Kannada	40	60	100	4	-	-	3	2
	21BSC4L7LFK4	Functional Kannada								
L8	21BSC4L8EN4	English	40	60	100	4	-	-	3	2
	21BSC4L8HI4	Hindi								
	21BSC4L8SN4	Sanskrit								
	21BSC4L8TE4	Telugu								
	21BSC4L8UR4	Urdu								
DSC4	21BSC4C4MAT2L	Partial Differential Equations and Integral Transforms	40	60	100	4	-	-	4	2
	21BSC4C4MAT2P	Theory based Practical's on Partial Differential Equations and Integral Transforms	25	25	50	-	-	4	2	3
DSC4	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
AECC2	21BSC4AE1ES2	Constitution of India	20	30	50	3	-	-	2	2
VBC7	21BSC4V5PE4	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC8	21BSC4V6NC3	NCC/NSS/R&R(S&G)/Cultural	25	-	25	-	-	2	1	-
OEC4	21BSC4O4MAT4-A	Partial Differential Equations	40	60	100	3	-	-	3	2
	21BSC4O4MAT4-B	Mathematical Finance								
	21BSC4O4MAT4-C	Mathematics for Social Science								
Total Marks					**700**	**Semester Credits**			**25**	

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Mathematics as Major Discipline										
DSC5	21BSC5C5MATMJ1L	Real Analysis-II and Complex Analysis	40	60	100	4	-	-	4	2
	21BSC5C5MATMJ1P	Theory based Practical's on Real Analysis-II and Complex Analysis	25	25	50	-	-	4	2	3
DSC6	21BSC5C5MATMJ2L	Vector Calculus and Analytical Geometry	40	60	100	4	-	-	4	2
	21BSC5C5MATMJ2P	Theory based Practical's on Vector Calculus and Analytical Geometry	25	25	50	-	-	4	2	3
DSC7	Another Department Code as a Major Subject	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
DSC8	Another Department Code as a Major Subject	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
SEC4	21BSC5SE3MAT3	Employability skills/ Cyber Security	25	25	50	2	-	2	3	2
				Total Marks	**650**	**Semester Credits**			**27**	

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Mathematics as Major Discipline										
DSC7	21BSC6C6MATMJ1L	Linear Algebra	40	60	100	4	-	-	4	2
	21BSC6C6MATMJ1P	Theory based Practical's on Linear Algebra	25	25	50	-	-	4	2	3
DSC8	21BSC6C6MATMJ2L	Numerical Analysis	40	60	100	4	-	-	4	2
	21BSC6C6MATMJ2P	Theory based Practical's on Numerical Analysis	25	25	50	-	-	4	2	3
DSC6	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
DSC6	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
INT1	21BSC6 INT1L	Internship/ Project	25	25	50	-	-	-	2	2
Total Marks					**650**	**Semester Credits**			**26**	
Total Marks for BSC Program					**4100**	**Total Credits for BSC Program**			**146**	

Concept Note, Abbreviation Explanation and Coding:

Concept Note:

1. **CBCS** is a mode of learning in higher education which facilitates a student to have some freedom in selecting his/her own choices, across various disciplines for completing a UG/PG program.
2. A credit is a unit of study of a fixed duration. For the purpose of computation of workload as per UGC norms the following is mechanism be adopted in the University:
   One credit (01) = One Theory Lecture (L) period of one (1) hour.
   One credit (01) = One Tutorial (T) period of one (1) hour.
   One credit (01) = One practical (P) period of two (2) hours.
3. Course: paper/subject associated with AECC, DSC, DSEC, SEC, VBC, OEC, VC, IC and MIL
4. In case of **B.Sc**. **Once a candidate chose two courses/subjects of a particular two department in the beginning, he/she shall continue the same till the end of the degree, then there is no provision to change the course(s) and Department(s).**
5. A candidate shall choose **one of the Department's courses as major and other Department course as minor in fifth and sixth semester and major course will get continued in higher semester.**
6. Wherever there is a practical there will be no tutorial and vice-versa
7. A major subject is the subject that's the main focus of Core degree/concerned.
8. A minor is a secondary choice of subject that complements core major/ concerned.
9. Vocational course is a course that enables individual to acquire skills set that are required for a particular job.
10. Internship is a designated activity that carries some credits involving more than **25 days** of working in an organization (either in same organization or outside) under the guidance of an identified mentor. Internship shall be an integral part of the curriculum.
11. **OEC: For non-mathematics students. Mathematics students have to opt for OEC from departments other than major and minor disciplines.**

Abbreviation Explanations:

1. AECC: Ability Enhancement Compulsory Course.
2. DSC: Discipline Specific Core Course.
3. DSEC: Discipline Specific Elective Course.
4. SEC: Skill Enhancement Course.
5. VBC: Value Based Course.
6. OEC: Open/Generic Elective Course
7. VC: Vocational Course.
8. IC: Internship Course
9. L1: Language One
10. L2: MIL
11. L= Lecture; T= Tutorial; P=Practical.
12. MIL= Modern Indian Language; English or Hindi or Telugu or Sanskrit or Urdu

Program Coding:

1. Code 21: Year of Implementation
2. Code BSC: BSC Program under the faculty of Applied Science of the University
3. Code 1: First Semester of the Program, (2 to 6 represent higher semesters)
4. Code AE: AECC, (C for DSC, S for SEC, V for VBC and O for OEC)
5. Code 1: First "AECC" Course in semester, similarly in remaining semester for such other courses
6. Code LK: Language Kannada, similarly Language English, Language Hindi, Language Telugu, Language Sanskrit, &Language Urdu
7. Code 1: Course in that semester.
8. MAT: Mathematics

ASSESSMENT METHODS

Evaluation Scheme for Internal Assessment:

Theory:

Assessment Criteria	40 marks
1st Internal Assessment Test for 30 marks of duration 1 hr after 8 weeks (**to be reduced to 10 marks**).	10
Assignment	10
2nd Internal Assessment Test for 30 marks of duration 1 hr after 12 weeks **(to be reduced to 10 marks).**	10
Seminar	10
Total	**40**

Practical:

Assessment Criteria	25 marks
Semester End Internal Assessment Test for 20 marks of duration 3 hrs	20
Journal (Practical Record)	05
Total	**25**

Question Paper Pattern:
RANI CHANNAMMA UNIVERSITY
Department of Mathematics

I Semester B.Sc. (Mathematics)

Sub: Code: Maximum Marks: 60

a. Answer any Six Questions from Question 1

b. Answer any Three Questions from Question 2,3,4 and 5

Q.No.1.	**Answer any Five Questions (Two question from Each Unit)** **a.** **b.** **c.** **d,** **e.** **f.** **g.** **h.**	**2X6=12**
Q.No.2.	**(Should cover Entire Unit-I)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.3.	**(Should cover Entire Unit-II)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.4.	**(Should cover Entire Unit-III)** **a.** **b.** **c.** **d.**	**4X3=12**
Q.No.5.	**(Should cover Entire Unit-IV)** **a.** **b.** **c.** **d.**	**4X3=12**

COURSE-WISE SYLLABUS

Semester I

Year	I	**Course Code:** 21BSC1C1MAT1L	**Credits**	04
Sem.	1	**Course Title:** Algebra - I and Calculus – I	**Hours**	56

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	This course will enable the students to • Learn to solve system of linear equations. • Solve the system of homogeneous and non-homogeneous linear of m equations in n variables by using concept of rank of matrix, finding eigen values and eigen vectors. • Sketch curves in Cartesian, polar and pedal equations • Students will be familiar with the techniques of integration and differentiation of function with real variables. • Identify and apply the intermediate value theorems and L' Hospital rule.	
Unit No.	**Course Content**	**Hours**
Unit I	**Matrix:** Recapitulation of Symmetric and Skew Symmetric matrices, Cayley-Hamilton theorem, inverse of matrices by Cayley-Hamilton theorem (Without Proof). Algebra of Matrices; Row and column reduction to Echelon form. Rank of a matrix; Inverse of a matrix by elementary operations; Solution of system of linear equations; Criteria for existence of non-trivial solutions of homogeneous system of linear equations. Solution of non-homogeneous system of linear equations. Eigen values and Eigen vectors of square matrices, real symmetric matrices and their properties, reduction of such matrices to diagonal form.	**14**
Unit II	**Polar Co-ordinates:** Polar coordinates, angle between the radius vector and tangent. Angle of intersection of two curves (polar forms), length of perpendicular from pole to the tangent, pedal equations. Derivative of an arc in Cartesian, parametric and polar forms, curvature of plane curve-radius of curvature formula in Cartesian, parametric and polar and pedal forms, centre of curvature, asymptotes, evolutes and envelops.	**14**
Unit III	**Differential Calculus-I:** Limits, Continuity, Differentiability and properties. Properties of continuous functions. Intermediate value theorem, Rolle's Theorem , Lagrange's Mean Value theorem, Cauchy's Mean value theorem and examples. Taylor's theorem, Maclaurin's series, Indeterminate forms and evaluation of limits using L'Hospital rule.	**14**
Unit IV	**Successive Differentiation**: nth Derivatives of Standard functions e^{ax+b}, $(ax+b)^m$, $\log(ax+b)$, $\sin(ax+b)$, $\cos(ax+b)$, $e^{ax}\sin(bx+c)$, $e^{ax}\cos(bx+c)$, Leibnitz theorem and its applications. Tracing of curves (standard curves)	**14**

Recommended Leaning Resources	
Print Resources	**References:** **1.** University Algebra - N.S. Gopala Krishnan, New Age International (P) Limited **2.** Theory of Matrices - B S Vatsa, New Age International Publishers. **3.** Matrices - A R Vasista, Krishna Prakashana Mandir. **4.** Differential Calculus - Shanti Narayan, S. Chand & Company, New Delhi. **5.** Applications of Calculus, Debasish Sengupta, Books and Allied (P) Ltd., 2019. **6.** Calculus – Lipman Bers, Holt, Rinehart & Winston. **7.** Calculus - S Narayanan & T. K. Manicavachogam Pillay, S. Viswanathan Pvt. Ltd., vol. I & II. **8.** Schaum's Outline of Calculus - Frank Ayres and Elliott Mendelson, 5th ed. USA: Mc. Graw. **9.** Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.

Year	I	**Course Code:** 21BSC1C1MAT1P	**Credits**	02
Sem.	I	**Course Title:** Practical's on Algebra - I and Calculus – I	**Hours**	56

Course Pre-requisites, if any:	Knowledge of Programming	
Formative Assessment Marks: 25	Summative Assessment Marks: 25	Duration of ESA: 03 hrs.

Course Outcomes	This course will enable the students to • Learn Free and Open Source Software (FOSS) tools for computer programming Solve problem on algebra and calculus theory studied in MATDSCT 1.1 by using FOSS software. Acquire knowledge of applications of algebra and calculus through FOSS Practical/Lab Work to be performed in Computer Lab (FOSS) • Suggested Software's: Maxima/Scilab/Maple/MatLab/Mathematica/Phython/R	
	Course Content	**Hours**
	Lab Practical's: **Part A:** Introduction to the software and commands related to the topic. 1. Computation of addition and subtraction of matrices, 2. Computation of Multiplication of matrices. 3. Computation of Trace and Transpose of Matrix 4. Computation of Rank of matrix and Row reduced Echelon form. 5. Computation of Inverse of a Matrix using Cayley-Hamilton theorem. 6. Solving the system of homogeneous and non-homogeneous linear algebraic equations. **Part B:** 7. Finding the nth Derivative of e^{ax}, trigonometric and hyperbolic functions 8. Finding the nth Derivative of algebraic and logarithmic functions. 9. Finding the nth Derivative of $e^{ax+b}\sin(bx+c)$, $e^{ax+b}\cos(bx+c)$. 10. Finding the Taylor's and Maclaurin's expansions of the given functions. 11. Finding the angle between the radius vector and tangent. 12. Finding the curvatures of the given curves. 13. Tracing of standard curves (Cartesian, polar and parametric)	**56**

Evaluation Scheme for Lab Examination

Assessment Criteria		Marks
Program – 1 from Part A	Writing Program	03
	Execution of Program	07
Program -2 from Part B	Writing Program	03
	Execution of Program	07
Viva-Voce		05
Total		**25**

OPEN-ELECTIVE SYLLABUS:

Year	I	**Course Code:** 21BSC1O1MAT1	**Credits**	03
Sem.	I	**Course Title:** Business Mathematics – I	**Hours**	42
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	

Course Outcomes	This course will enable the students to • Translate the real word problems through appropriate mathematical modellling. • Explain the concepts and use equations, formulae and mathematical expression and relationship in a variety of context. • Finding the extreme values of functions. • Analyze and demonstrate the mathematical skill require in mathematically intensive areas in economics and business.

Unit No.	**Course Content**	**Hours**
Unit I	**Algebra** – Set theory and simple applications of Venn Diagram, relations, functions, indices, logarithms, permutations and combinations. Examples on commercial mathematics.	**14**
Unit II	**Matrices**: Definition of a matrix; types of matrices; algebra of matrices. Properties of determinants; calculations of values of determinants up to third order; Adjoint of a matrix, elementary row and column operations; solution of a system of linear equations having unique solution and involving not more than three variables. Examples on commercial mathematics.	**14**
Unit III	**Differential Calculus**: Constant and variables, functions, Limits & continuity. Differentiability and Differentiation, partial differentiation, rates as a measure, maxima, minima, Partial Derivatives up to second order; Homogeneity of functions and Euler's Theorem; Total Differentials; Differentiation of implicit function with the help of total differentials, Maxima and Minima; cases of one variable involving second or higher order derivatives; Cases of two variables involving not more than one constraint	**14**

Recommended Leaning Resources

Print Resources	**References:** **1.** Basic Mathematics, Allel R.G.A, Macmillan, New Delhi. **2.** Mathematics for Economics, Dowling, E.T. ,Schaum's Series, McGraw Hill, London. **3.** Quantitative Techniques in Management, Vohra, N.D., Tata McGraw Hill, New Delhi. **4.** Business Mathematics, Soni R.S., Pitamber Publishing House, Delhi

Semester II

Year	I	**Course Code:** 21BSC1C1MAT1L	**Credits**	04
Sem.	II	**Course Title:** Algebra - II and Calculus –II	**Hours**	56

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	This course will enable the students to • Recognize the mathematical objects called Groups. • Link the fundamental concepts of groups and symmetries of geometrical objects. • Explain the significance of the notions of Cosets, normal subgroups and factor groups. • Understand the concept of differentiation and fundamental theorems in differentiation and various rules. • Find the extreme values of functions of two variables.

Unit No.	**Course Content**	**Hours**
Unit I	**Real Number System:** Recapitulation of number system. Countable and uncountable sets, standard theorems. Real line, bounded sets, suprimum and infimum of set, completeness properties of R, Archimedean property of R. Intervals, neighbourhood of a point, open sets, closed sets, limit points and Bolzano-Weierstrass theorem (Without proof).	**14**
Unit II	**Groups:** Definition of a group with examples and properties, congruence, problems. Subgroups, centre of groups, order of an element of a group and its related theorems, cyclic groups, Coset decomposition, Factor groups, Lagrange's theorem and its consequences. Fermat's theorem, Euler's ϕ	**14**
Unit III	**Partial Derivatives**: Functions of two or more variables-explicit and implicit functions, partial derivatives. Homogeneous functions- Euler's theorem, total derivatives, differentiation of implicit and composite functions, Jacobians and standard properties and illustrative examples. Taylor's and Maclaurin's series for functions of two variables, Maxima-Minima of functions of two variables	**14**
Unit IV	**Integral Calculus**: Recapitulation of definite integrals and its properties. Line integral: Definition of line integral and basic properties, examples on evaluation of line integrals. Double integral: Definition of Double integrals and its conversion to iterated integrals. Evaluation of double integrals by changing the order of integration and change of variables. Computation of plane surface areas, volume underneath a surface of revolution using double integral. Triple integral: Definition of triple integrals and evaluation-change of variables, volume as triple integral. Differentiation under the integral sign by Leibnitz rule.	**14**

Recommended Leaning Resources	
Print Resources	**References** **1.** Topics in Algebra, I N Herstein, Wiley Eastern Ltd., New Delhi. **2.** Higher algebra, Bernard & Child, Arihant, ISBN: 9350943199/ 9789350943199. **3.** Modern Algebra, Sharma and Vasista, Krishna Prakashan Mandir, Meerut, U.P. **4.** Differential Calculus, Shanti Narayan, S. Chand & Company, New Delhi. **5.** Integral Calculus, Shanti Narayan and P K Mittal, S. Chand and Co. Pvt. Ltd., **6.** Schaum's Outline Series, Frank Ayres and Elliott Mendelson, 5th ed. USA: Mc. Graw Hill., 2008. **7.** Mathematical Analysis, S C Malik, Wiley Eastern. **8.** A Course in Abstract Algebra, Vijay K Khanna and S K Bhambri, Vikas Publications. **9.** Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.

Year	I	**Course Code:** 21BSC1C1MAT1P	**Credits**	02
Sem.	II	**Course Title:** Practical's on Algebra - II and Calculus – II	**Hours**	56

Course Pre-requisites, if any:	Knowledge of Programming	
Formative Assessment Marks: 25	Summative Assessment Marks: 25	Duration of ESA: 03 hrs.

Course Outcomes	This course will enable the students to • Learn Free and Open Source Software (FOSS) tools for computer programming • Solve problem on algebra and calculus by using FOSS software's. • Acquire knowledge of applications of algebra and calculus through FOSS Practical/Lab Work to be performed in Computer Lab Suggested Software's: Maxima/Scilab/Maple/MatLab/Mathematica/Phython/R.	
	Course Content	**Hours**
	Lab Practical's: **Part A:** 1. Program for verification of binary operations. 2. Computation of identity and inverse elements of a group. 3. Program to construct Cayley's table and test abelian for given finite set. 4. Program to find all possible cosets of the given finite group. 5. Program to find generators and corresponding possible subgroups of a cyclic group. 6. Programs to verification of Lagrange's theorem with suitable examples. **Part B:** 7. Program to verify the Euler's ϕfunction for a given finite group. 8. Program to verify the Euler's theorem and its extension 9. Programs to construct series using Maclaurin's expansion for functions of two variables. 10. Program to evaluate the line integrals with constant and variable limits. 11. Program to evaluate the Double integrals with constant and variable limits 12. Program to evaluate the Triple integrals with constant and variable limits.	**56**

Evaluation Scheme for Lab Examination

Assessment Criteria		Marks
Program – 1 from Part A	Writing Program	03
	Execution of Program	07
Program -2 from Part B	Writing Program	03
	Execution of Program	07
Viva-Voce		05
Total		**25**

OPEN-ELECTIVE SYLLABUS:

Year	I	**Course Code:** 21BSC1O1MAT1	**Credits**	03
Sem.	I	**Course Title:** Business Mathematics – II	**Hours**	42
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	

Course Outcomes	This course will enable the students to • Translate the real word problems through appropriate mathematical modellling. • Explain the concepts and use equations, formulae and mathematical expression and relationship in a variety of context. • Finding the extreme values of functions. • Analyze and demonstrate the mathematical skill require in mathematically intensive areas in economics and business.	
Unit No.	**Course Content**	**Hours**
Unit I	**Commercial Arithmetic:** Interest: Concept of Present value and Future value, Simple interest, Compound interest, Nominal and Effective rate of interest, Examples and Problems Annuity: Ordinary Annuity, Sinking Fund, Annuity due, Present Value and Future Value of Annuity, Equated Monthly Instalments (EMI) by Interest of Reducing Balance and Flat Interest methods, Examples and Problems.	**14**
Unit II	**Measures of central Tendency and Dispersion:** Frequency distribution: Raw data, attributes and variables, Classification of data, frequency distribution, cumulative frequency distribution, Histogram and give curves. Requisites of ideal measures of central tendency, Arithmetic Mean, Median and Mode for ungrouped and grouped data. Combined mean, Merits and demerits of measures of central tendency, Geometric mean: definition, merits and demerits, Harmonic mean: definition, merits and demerits, Choice of A.M., G.M. and H.M. Concept of dispersion, Measures of dispersion: Range, Variance, Standard deviation (SD) for grouped and ungrouped data, combined SD, Measures of relative dispersion: Coefficient of range, coefficient of variation. Examples and problems.	**14**
Unit III	**Correlation and regression:** Concept and types of correlation, Scatter diagram, Interpretation with respect to magnitude and direction of relationship. Karl Pearson's coefficient of correlation for ungrouped data. Spearman's rank correlation coefficient. (with tie and without tie) Concept of regression, Lines of regression for ungrouped data, predictions using lines of regression. Regression coefficients and their properties (without proof). Examples and problems.	**14**

Recommended Leaning Resources	
Print Resources	**References:** **1.** Practical Business Mathematics, S. A. Bari New Literature Publishing Company New Delhi. **2.** Mathematics for Commerce, K. Selvakumar Notion Press Chennai **3.** Business Mathematics with Applications, Dinesh Khattar & S. R. Arora S. Chand Publishing New Delhi **4.** Business Mathematics and Statistics, N.G. Das &Dr. J.K. Das McGraw Hill New Delhi **5.** Fundamentals of Business Mathematics, M. K. Bhowal, Asian Books Pvt. Ltd New Delhi **6.** Mathematics for Economics and Finance: Methods and Modelling, **7.** Martin Anthony and Norman, Biggs Cambridge University Press Cambridge **8.** Financial Mathematics and its Applications, Ahmad Nazri Wahidudin Ventus Publishing APS Denmark **9.** Fundamentals of Mathematical Statistics, Gupta S. C. and Kapoor V. K.:, Sultan Chand and Sons, New Delhi. **10.** Statistical Methods, Gupta S. P.: Sultan Chand and Sons, NewDelhi. **11.** Applied Statistics, Mukhopadhya Parimal New Central Book Agency Pvt. Ltd. Calcutta. **12.** Fundamentals of Statistics, Goon A. M., Gupta, M. K. and Dasgupta, B. World Press Calcutta. **13.** Fundamentals of Applied Statistics, Gupta S. C. and Kapoor V. K.:, Sultan Chand and Sons, New Delhi.

SEMESTER – III

Year	II	**Course Code:** 21BSC3C3MAT1L	**Credits**	04
Sem.	III	**Course Title: Ordinary Differential Equations and Real Analysis – I**	**Hours**	56

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	**Course Learning Outcomes**: This course will enable the students to: • Solve first-order non-linear differential equations and linear differential equations. • To model problems in nature using Ordinary Differential Equations. • Formulate differential equations for various mathematical models • Apply these techniques to solve and analyze various mathematical models. • Understand the fundamental properties of the real numbers that lead todefine sequence and series, the formal development of real analysis. • Learn the concept of Convergence and Divergence of a sequence. • Able to handle and understand limits and their use in sequences, series, differentiation, and integration. • Apply the ratio, root, alternating series, and limit comparison tests for convergence and absolute convergence of an infinite series.

Unit No.	**Course Content**	**Hours**
Unit I	**Ordinary Differential Equations:** Recapitulation of Differential Equations of first order and first degree, Exact Differential equations, Necessary and sufficient condition for the equations to be exact, Reducible to the exact differential equations. Differential equations of the first order and higher degree: Equations solvable for p, x, y. Clairaut's equation and singular solution. Orthogonal trajectories of Cartesian and polar curves.	**14**
Unit II	Linear differential equations of the nth order with constant coefficients. Particular Integrals when the RHS is of the form e^{ax}, sin(ax+b), cos(ax+b), x^n, e^{ax} V and x V (with proofs), where V is a function of x. Cauchy – Euler equations, Legendre differential equations, Method of variation of parameters. Simultaneous differential equations with two and more than two variables. Condition for integrability of total differential equations P dx +Q dy+ R dz = 0.	**14**
Unit III	**Real Analysis – I :** **Sequences**: Sequences of real numbers, Bounded sequences. Limit of a sequence. Convergent, divergent, and oscillatory sequences. Monotonic sequences. Algebra of convergent sequences. Limit points of a sequence. Bolzano Weierstrass theorem for sequence. Limit superior and limit inferior of sequences. Cauchy's first and second theorem on limits of a sequence. Cauchy's general principle for convergence of a sequence. Subsequence and their properties.	**14**
Unit IV	**Infinite Series:** Definition of convergent, divergent and oscillatory series. Series of non-negative terms, Cauchy's general principle of convergence. Geometric series, P-series (Harmonic series). Comparison tests for positive term series. D'Alembert's ratio test, Raabe's test. Cauchy's Root test and Cauchy's integral test. Alternating series. Leibnitz's theorem. Absolute convergence and conditional convergence of a series. Summation of series: Binomial, exponential and logarithmic.	**14**

Recommended Leaning Resources	
Print Resources	**References:** **1.** M. D. Raisinghania, Ordinary Differential Equations & Partial Differential Equations, S. Chand & Company, New Delhi. **2.** J. Sinha Roy and S Padhy: A course of Ordinary and Partial Differential Equation, Kalyani Publishers, New Delhi. **3.** D. Murray, Introductory Course in Differential Equations, Orient Longman (India) **4.** W. T. Reid, Ordinary Differential Equations, John Wiley, New Delhi. **5.** M.L. Khanna, Differential Equations, Jai Prakash Nath & Co. Meerut. **6.** S. L. Ross, Differential Equations, 3rd Ed., John Wiley and Sons, 1984. **7.** R.G. Bartle and D. R. Sherbert, Introduction to Real Analysis, 3rd Ed., John Wiley and Sons (Asia) Pvt. Ltd., Singapore, 2015. **8.** Gerald G. Bilodeau, Paul R. Thie, G.E. Keough, An Introduction to Analysis, 2nd Ed., Jones & Bartlett, 2010. **9.** K. A. Ross, Elementary Analysis: The Theory of Calculus (2^{nd} edition), Springer, 2013 **10.** S. K. Berberian, A First Course in Real Analysis, Springer Verlag, New York, 1994. **11.** T. Apostol, Mathematical Analysis, Narosa Publishing House **12.** M.L Khanna and L.S. Varhiney, Real Analysis by, Jai PrakashNath& Co. Meerut. **13.** Kreyzig, Advanced Engineering Mathematics, John Wiley, New Delhi.

Practicals

Year	II	**Course Code:** 21BSC3C3MAT1P	**Credits**	02
Sem.	III	**Course Title: Practicals on Ordinary Differential Equations and Real Analysis – I**	**Hours**	56
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 25		Summative Assessment Marks: 25	Duration of ESA:.02 hrs.	
Course Outcomes	**Course Learning Outcomes**: This course will enable the students to gain handson experience of • Free and Open Source software (FOSS) tools or computer programming. • Solving exact differential equations • Ploting orthogonal trajectories • Finding complementary function and particular integral of linear and homogeneous differential equations. • Acquire knowledge of applications of real analysis and differential equations. • Verification of convergence/divergence of different types of series			
	Course Content			**Hours**
	Practicals/Lab Work to be performed in Computer Lab Use open-source software to executive the practical problems. (Maxima/ Scilab/MatLab /Mathematica/Python **1.** Fundamentals of Ordinary differential equations and Real analysis using FOSS **2.** Verification of exactness of a differential equation **3.** Plot orthogonal trajectories for Cartesian and polar curves **4.** Solutions of differential equations that are solvable for x, y, p. **5.** To find the singular solution by using Clairaut's form. **6.** Finding the Complementary Function and Particular Integral of linear and homogeneous differential equations with constant coefficients and plot the solutions. **7.** Finding the Particular Integral of differential equations up to second order and plot the solutions. **8.** Solutions to the Total and Simultaneous differential equations and plot the solutions. **9.** Test the convergence of sequences **10.** Verification of exponential, logarithm and binomial series. **11.** Verification of geometric series, p-series, Cauchy's Integral test, root test, and D Alembert's Test. **12.** Examples on a series of positive terms. **13.** Examples on alternating series using Leibnitz's theorem. **14.** Finding the convergence of series using Cauchy's criterion for partial sums.			**56**

Open Elective Course

Year	II	**Course Code:** 21BSC3O3MAT3-B	**Credits**	03
Sem.	III	**Course Title: Quantitative Mathematics**	**Hours**	42
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	
Course Outcomes		**Course Outcomes:** This course will enable the students to: • Understand number system and fundamental operations • Understand the concept of linear quadratic and simultaneous equations and their applications in real life problems • Understand and solve the problems based on Age. • Solve Speed and Distance related problems.		
Unit No.		**Course Content**		**Hours**
Unit I		**Number System:** Numbers, Operations on Numbers, Tests on Divisibility, HCF and LCM of numbers. Decimal Fractions, Simplification, Square roots and Cube roots - Problems thereon. Surds and Indices. Illustrations thereon.		**14**
Unit II		Theory of equations Linear equations, quadratic equations, simultaneous equations in two variables, simple application problems - Problems on Ages, Problems on conditional Age calculations, Present & Past age calculations.		**14**
Unit III		Quantitative Aptitude Percentage, Average, Average Speed-problems. Time and distance, problems based on trains, problems on-work and time, work and wages, clock and calendar.		**14**
Recommended Leaning Resources				
Print Resources		**References:** **1.** R.S. Aggarwal, Quantitative Aptitude, S. Chand and Company Limited, NewDelhi-110 055. **2.** Abhijit Guha, Quantitative Aptitude, 5th Edition, Mc. Graw hill publications, 2004. **3.** R V Praveen, Quantitative Aptitudeand Reasoning, PHI publishers. **4.** R S Aggarwal, Objective Arithmetic, S. Chand & Company Ltd. **5.** Qazi Zameerddin,Vijay K Khanna, S K Bhambri, Business Mathematics-II Edition. **6.** S. K. Sharma and Gurmeet Kaur, Business Mathematics, Sultan Chand & Sons. **7.** Hazarika Padmalochan, A Text Book of Business mathematics for B.Com and BBA Course, Chand Publication. **8.** J K Thukrol, Business Mathematics, abci book: 2020 First Edition. **9.** N. G. Das and J. K. Das, Business Mathematics and Statics, Mc Graw Hill Education, 2017.		

Open Elective Course

<table>
<tr><td>Year</td><td>II</td><td colspan="2">Course Code: 21BSC3O3MAT3-C</td><td>Credits</td><td>03</td></tr>
<tr><td>Sem.</td><td>III</td><td colspan="2">Course Title: Vedic Mathematics</td><td>Hours</td><td>42</td></tr>
<tr><td colspan="2">Course Pre-requisites, if any</td><td colspan="4">NA</td></tr>
<tr><td colspan="2">Formative Assessment Marks: 40</td><td colspan="2">Summative Assessment Marks: 60</td><td colspan="2">Duration of ESA:.02 hrs.</td></tr>
<tr><td>Course Outcomes</td><td colspan="5">Course Outcomes: This course will enable the students to:
Understand number system and fundamental operations
Understand the concept of linear quadratic and simultaneous equations and their applications in real life problems
Understand and solve the problems based on Age.
Solve Speed and Distance related problems.</td></tr>
<tr><td>Unit No.</td><td colspan="3">Course Content</td><td colspan="2">Hours</td></tr>
<tr><td>Unit I</td><td colspan="3">Multiplication:
Ekadhikenpurven method (multiplication of two numbers of two digits).
Eknunenpurven method (multiplication of two numbers of three digits).
Urdhvatiragbhyam method (multiplication of two numbers of three digits).
Nikhilam Navtashchramam Dashtaha (multiplication of two numbers of three digits).
Combined Operations.</td><td colspan="2">14</td></tr>
<tr><td>Unit II</td><td colspan="3">Division and Divisibility
Part A: Division
Nikhilam Navtashchramam Dashtaha (two digits divisor)
Paravartya Yojyet method (three digits divisor)
Part B:Divisibility
Ekadhikenpurven method (two digits divisor)
Eknunenpurven method (two digits divisor)</td><td colspan="2">14</td></tr>
<tr><td>Unit III</td><td colspan="3">Power and Root Power:
Square (two digit numbers)
Cube (two digit numbers).
Root:
Square root (four digit number)
Cube root (six digit numbers).
Solution of linear simultaneous equations.</td><td colspan="2">14</td></tr>
<tr><td colspan="6">Recommended Leaning Resources</td></tr>
<tr><td>Print Resources</td><td colspan="5">Reference Books:
Vedic Mathematics, MotilalBanarsi Das, New Delhi.
Vedic Ganita: Vihangama Drishti-1, SikshaSanskritiUthana Nyasa, New Delhi.
Vedic GanitaPraneta, SikshaSanskritiUthana Nyasa, New Delhi.
Vedic Mathematics: Past, Present and Future, SikshaSanskritiUthana Nyasa, New Delhi.
Leelavati, ChokhambbaVidyaBhavan, Varanasi.
Bharatiya Mathematicians, Sharda Sanskrit Sansthan, Varanasi.</td></tr>
</table>

SEMESTER – IV

Year	II	**Course Code:** 21BSC4C4MAT2L	**Credits**	04
Sem.	IV	**Course Title: Partial Differential Equations and Integral Transforms**	**Hours**	56

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	**Course Learning Outcomes**: This course will enable the students to • Solve the Partial Differential Equations of the first order and second order • Formulate, classify and transform partial differential equations into canonical form. • Solve linear and non-linear partial differential equations using various methods; and apply these methods to solving some physical problems. • Able to take more courses on wave equation, heat equation, and Laplace equation. • Solve PDE by Laplace Transforms and Fourier Transforms	
Unit No.	**Course Content**	**Hours**
Unit I	Basic concepts–Formation of a partial differential equations by elimination of arbitrary constants and functions, Solution of partial differential equations – Solution by Direct integration, Lagrange's linear equations of the form Pp + Qq = R , Standard types of first order non-linear partial differential equations, The integrals of the non-linear equation by Charpit's method.	**14**
Unit II	Homogeneous linear partial differential equations with constant coefficients. Partial differential equations of the second order. Classification of second-order partial differential equations, canonical forms. Classification of second order linear equations as hyperbolic, parabolic, and elliptic. Solutions of the Heat equation, Laplace equation and Wave equation (using separation of variables).	**14**
Unit III	**Laplace Transforms:** Definition**,** Basic Properties. Laplace transforms of some standard functions. Laplace transform of Periodic functions. Laplace transform of derivative and integral of a function. Heaviside function. Dirac-delta function. Convolution theorem. Inverse Laplace transforms and its properties. Solution of differential equations by using Laplace transforms.	**14**
Unit IV	**Fourier Series and Transforms:** Periodic functions. Fourier Coefficients. Fourier series of functions with period 2π and period 2L. Fourier series of even and odd functions. Half range Cosine and Sine series. Fourier Transforms - Finite Fourier Cosine and Sine transform. Transforms of derivates**.** Applications of Fourier Transforms**.**	**14**

Recommended Leaning Resources

Print Resources

References:

1. D. A. Murray, Introductory Course in Differential Equations, Orient and Longman
2. H.T. H.Piaggio, Elementary Treatise on Differential Equations and their Applications, CBS Publisher & Distributors, Delhi, 1985.
3. G.F.Simmons, Differential Equations, Tata McGraw Hill.
4. S.L. Ross, Differential Equations, 3rd Ed., John Wiley and Sons, India, 2004.
5. M. D. Raisinghania, Ordinary Differential Equations & Partial Differential Equations, S. Chand & Company, New Delhi.
6. K.Sankara Rao, Introduction to Partial Differential Equations: PHI, Third Edition, 2015.

	7. I. N. Sneddean, Elements of Partial differential equations, McGraw-Hill International Editions, 1986. **8.** R. Murray and L. Spiegal(Schaum's Series), Laplace Transforms **9.** Goel and Gupta, Laplace Transform. **10.** Sudhir Kumar, Integral Transform Methods in Science & Engineering, CBS Engineering Series, 2017. **11.** Murray R. SpiegalL, Fourier Transforms, Schaum' Series, **12.** Earl David Rainville and Philip Edward Bedient–A short course in Differential Equations, Prentice Hall College Div; 6th Edition. **13.** Sathya Prakash, Mathematical Physics, S Chand and Sons, New Delhi.

Practicals

Year	II	**Course Code:** 21BSC4C4MAT2P	**Credits**	02
Sem.	IV	**Course Title: Practical's on Partial Differential Equations and Integral Transforms**	**Hours**	56
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 25		Summative Assessment Marks: 25	Duration of ESA:.02 hrs.	
Course Outcomes		**Course Learning Outcomes**: This course will enable the students to • Learn Free and Open Source software (FOSS) tools or computer programming. • Solve problems on Partial Differential Equations and Integral Forms • To find Laplace transform of various functions • To finf the Fourier Transform of periodic functions • To solve differential equations by using Integral transforms.		
		Course Content		**Hours**
		Practicals/Lab Work to be performed in Computer Lab Programs using Scilab/Maxima/Python: Elements of Partial differential equations and Integral transforms using FOSS **1.** Solutions of Linear Partial differential equations of type1 to type4 and Lagrange's method **2.** Solutions of partial differential equation using Charpit's method. **3.** Solutions of Second order homogenous partial differential equation with constant coefficients. **4.** Solutions to the partial differential equations using separation of variables method (Heat/ Wave/Laplace). **5.** Finding the Laplace transforms of some standard and periodic functions. **6.** Finding the inverse Laplace transform of simple functions. **7.** Verification of Convolution Theorem. **8.** To solve ordinary linear differential equation using Laplace transform. **9.** To solve Integral equation using Laplace transform. **10.** To find full range Fourier series of some simple functions with period 2π and 2L **11.** To find Half range sine and cosine series of some simple functions and ploting them. **12.** To find Cosine Fourier transforms. **13.** To find Sine Fourier transforms.		**56**

Open Elective Course

Year	II	**Course Code:** 21BSC4O4MAT4-B	**Credits**	03
Sem.	IV	**Course Title: Mathematical Finance**	**Hours**	42
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	
Course Outcomes		Course Learning Outcomes: This course will enable the students to • Understand how compute profit and loss, discount and Banker's discount. • Understand the concept of Linear equations and inequalities and their use in the solving the Linear Programming Problems. • Formulation of Transportation Problem and its application in routing problem.		
Unit No.		**Course Content**		**Hours**
Unit I		**Commercial Arithmetic:** Bill of exchange, Bill of discounting procedure. Basic formula related to profit, loss, discount and brokerage, Successive discount, True discount, Banker's discount.		**14**
Unit II		**Linear Programming:** Linear equations and inequalities- Rectangular coordinates, straight line, parallel and intersecting lines and linear inequalities, Introduction to linear programming, Mathematical formulation of LPP, Solution of a LPP by graphical method, special cases in graphical method		**14**
Unit III		**Transportation problem:** Introduction, Formulation of Transportation problem, Initial basic feasible solution, Steps in solving a transportation problem, optimality check, special cases in Transportation problem. The Travelling salesman Problem (Routing Problem).		**14**
Recommended Leaning Resources				
Print Resources		Reference Books: **1.** R S Aggarwal, Objective Arithmetic, S. Chand & Company Ltd. **2.** Mizrahi and Sullivan, Mathematics for Business and Social Sciences an Application approach. **3.** Qazi Zameeruddin, Vijay K Khanna, S K Bhambri, Business Mathematics-II Edition, Vikas Publishing House. **4.** S.Kalavathy, Operation Research, Fourth edition, Vikas publication house Pvt.Ltd. **5.** Sreenivasa Reddy M, Operations Research 2nd edition, Sanguine Technical publishers, Bangalore. **6.** S. D. Sharma, Operation Research		

Year	II	**Course Code:** 21BSC4O4MAT4-C	**Credits**	03
Sem.	IV	**Course Title: Mathematics for Social Sciences**	**Hours**	42

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	Course Learning Outcomes: This course will enable the students to • Understand the mathematical concept of sets and counting problems. • Understand the concept of Probability and its applications in social sciences. • Understand the concept of limits and continuity of functions and its applications in business and social sciences.

Unit No.	**Course Content**	**Hours**
Unit I	Sets, counting, permutations, combinations, counting problems, binomial theorem and problems thereon. Probability – Introduction, sample space and assignment of probabilities, properties of the probability of an event, probability of equally likely events, conditional probability, Baye's formula and examples thereon.	**14**
Unit II	Limit and continuity, Derivative- interpretation, derivative formulas, general derivatives for differentiation, composit functions, higher order derivatives and problems thereon.	**14**
Unit III	Applications of the derivative – Relative maxima and Relative minima, Absolute maximum and Absolute minimum, Applied problems, Concavity, Asymptotes, Marginal analysis, Models- Maximizing tax revenue, Otimal trade-in time, and minimizing inventory cost.	**14**

Recommended Leaning Resources

Print Resources	**REFERENCE BOOKS** **1.** Abe Mizrahi and Michael Sullivan, Mathematics for Business and Social Sciences and Applied Approach – Third Edition, Wieley. **2.** Carl P. Simon and Lawrence Blume, Mathematics for Economists, Viva Books Private Limited, New Delhi, 2015. **3.** L. Peccati, M. D'Amico and M. Cigola ,Maths for Social Sciences, , Springer.

SEMESTER – V

Year	III	**Course Code:**	**Credits**	04
Sem.	V	**Course Title: 5.1 Real Analysis-II and Complex Analysis**	**Hours**	60

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:02 hrs.

Course Outcomes	**Course Learning Outcomes**: The overall expectation from this course is that the student builds a basic understanding on Riemann integration and elementary complex analysis. The broader course outcomes are listed as follow. At the end of this course, the student will be able to: • Carry out certain computations such as computing upper and lower Riemann sums as well integrals. • Describe various criteria for Integrability of functions. • Exhibit certain properties of mathematical objects such as integrable functions, analytic functions, harmonic functions and soon. • ProvesomestatementsrelatedtoRiemannintegrationaswellasincomplexanalysis. • Carry out the existing algorithms to construct mathematical structures such as analytic functions. • Applies the gained knowledge to solve various other problems.

Unit No.	**Course Content**	**Hours**
	Real Analysis-II	
Unit I	**Riemann Integration:** Definition & examples for partition of an interval, refinement of a partition and common refinement. **Riemann Darboux Sums –** Upper and lower (Darboux) sums–definition, properties & problems. Riemann Integral–Upper and Lower integrals (definition & problems), Darboux's theorem and Criterion for Integrability, Integrability of sum, difference, product, quotient and modulus of integrable functions. **Integral as a limit of sum (Riemann sum)**–Problems. Integrability of continuous functions, monotonic functions, bounded function with finite number of discontinuity. Fundamental theorem of Calculus–related problems, change of variables, integration by parts, first and second mean value theorems of integral calculus	**15**
Unit II	**Improper Integral and Beta & Gamma functions:**. Improper integrals of the first, second and third kind with examples. Improper integral has the limit of the proper integral. Comparison test, Abel's test and Dirichlet's test for the convergence of the integral of a product of two functions. **Beta-Gamma Functions:** Definitions, Properties and examples, relations between beta and gamma functions, standard theorems, duplication formula and applications.	**15**
	Complex Analysis	
Unit III	**Complex numbers and functions of complex variables:** Complex numbers-Cartesian and polar form-geometrical representation – complex-Plane- Euler's formula -$e^{i\gamma}$=cosγ+*i*sinγ. Functions of a complex variable-limit, continuity and differentiability of a complex function. Analytic function, Cauchy-Riemann equations in Cartesian form conditions for analyticity, Harmonic function-standard properties of analytic functions-construction of analytic function when real or imaginary part is given-Milne Thomson method.	**15**

Unit IV	**Transformations and Complex integration**: Transformations: Definition – Jacobian of a transformation –Identity transformation –Reflection – Translation – Rotation – Stretching – Inversion-Linear transformation – Definitions-Bilineartrans formations –Cross- ratio of four points - Cross-ratio preserving property- Preservation of the family of straight lines and circles-Conformal mappings- Discussion of the transformations $w=z^2$,$w=\sin z$,$w=e^z$,$w=\frac{z+\bar{z}}{2}$. Complex integration–definition, Line integral, properties and problems. Cauchy's Integral theorem –proof using Green's theorem-direct consequences. Cauchy's Integral formula with proof-Cauchy's generalized formula for the derivatives with proof and applications for evaluation of simple line integrals.	**15**
Recommended Leaning Resources		
Print Resources	**References:** **1.** S.C. Malik, Real Analysis, New Age International (India) Pvt. Ltd. **2.** S.C.Malikand Savita Arora, Mathematical Analysis, 2nded. NewDelhi, India: New Age international (P) Ltd. **3.** Richard R Goldberg, Methods of Real Analysis, Oxford and IBH Publishing **4.** Ajit Kumrand S. Kumaresan-A Basic Coursein Real Analysis, Taylor and Francis Group. **5.** L.V.Ahlfors,ComplexAnalysis,3rd Edition, McGraw Hill Education **6.** Bruce P.Palka,IntroductiontotheTheoryofFunctionofaComplexVariable,Springer Serge Lang, Complex Analysis, Springer. **7.** Shanthinarayan, Theory of Functions of a Complex Variable, S. Chand Publishers. **8.** S. Ponnuswamy, Foundations of Complex Analysis, 2nd Edition, Alpha Science International Limited. **9.** R. V. Churchil & J. W. Brown, Complex Variables and Applications, 5th ed, McGraw Hill Companies.	

<table>
<tr><td>Year</td><td>III</td><td colspan="3">Course Code:</td><td>Credits</td><td>02</td></tr>
<tr><td>Sem.</td><td>V</td><td colspan="3">Course Title: 5.1 Practical’s on Real Analysis-II and Complex Analysis</td><td>Hours</td><td>60</td></tr>
<tr><td colspan="2">Course Pre-requisites, if any</td><td colspan="5">NA</td></tr>
<tr><td colspan="2">Formative Assessment Marks: 25</td><td colspan="2">Summative Assessment Marks: 25</td><td colspan="3">Duration of ESA:02 hrs.</td></tr>
<tr><td>Course Outcomes</td><td colspan="6">Course Learning Outcomes: This course will enable the students to:
• Learn Free and Open-Source Software (FOSS) tools for computer programming.
• Solve problem on Real Analysis and Complex Analysis studied in MAT DSCT 5.1 by using FOSS software’s.
• Acquire knowledge of applications of Real Analysis and Complex Analysis through FOSS.</td></tr>
<tr><td></td><td colspan="5">Course Content</td><td></td></tr>
<tr><td></td><td colspan="5">Practical/Lab Work to be performed in Computer Lab (FOSS) Suggested Software’s:Maxima/Scilab/Python/R.

Suggested Programs:
1. Program to check whether a given set of real numbers attains supremum or infimum.
2. Program to find upper and lower Riemann sums with respect to given partition.
3. Program to test Riemann Integrability.
4. Program to evaluate Riemann integral as a limit of sum.
5. Evaluation of $\Gamma(n)$) for n is integer and non-integer.
6. Evaluation of $\beta(m\ ,\ n)$ for $m\ > 0\ and\ n > 0$..
7. Program on verification of Cauchy –Riemann equations for analyticity.
8. Program to check whether a function is harmonic or not.
9. Program to construct analytic functions (through Milne–Thompson method)
10. Program to find Cross ratio of points and related aspects.
11. Program to find fixed points of bilinear transformations.
12. Program to verify De-Moivre’s theorem.</td><td>60</td></tr>
</table>

Year	III	**Course Code:**	**Credits**	04
Sem.	V	**Course Title: 5.2 Vector Calculus and Analytical Geometry**	**Hours**	60
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:02 hrs.	

Course Outcomes	**Course Learning Outcomes**: This course will enable the students to: • Get introduced to the fundamentals of vector differential and integral calculus. • Get familiar with the various differential operators and their properties. • Get acquainted with the various techniques of vector integration. • Learn the applications of vector calculus. • Recollect the fundamentals of Analytical Geometry in 3D. • Interpret the geometrical aspects of planes and lines in3D.	
Unit No.	**Course Content**	**Hours**
	Vector Calculus	
Unit I	**Vector Algebra:** Multiple product–scalar triple product, vector triple product, geometrical interpretation, related problems; vector function of a scalar variable–interpretation as a space curve, derivative, tangent, normal and binormal vectors to a space curve; Curvature and Torsion of a space curve - definitions, derivation and problems, Serret –Frenet formulae. **Scalar field -** Gradient of a scalar field, geometrical meaning, directional derivative, unit normal using surfaces- tangent plane and normal to the surface; Vector field –divergence and curl of a vector field, geometrical meaning, solenoidal and irrotational fields; Laplacian of a scalar field; Vector identities.	**15**
Unit II	**Vector Integration**: Definition and basic properties, vector line integral, surface integral and volume integral; **Green's theorem in the plane** – Proof and related problems, Direct consequences of the theorem; **Gauss' Divergence theorem** – Proof and related problems, Direct consequences of the theorem; **Stokes' theorem**–Proof and related problems, Direct consequences of the theorem.	**15**
	Analytical Geometry	
Unit III	Planes, Straight Lines and Spheres Planes: Distance of a pointfromaplane,Anglebetweentwoplanes,pairofplanes,Bisectorsofanglesbetweentwoplanes;Straight lines: Equations of straight lines, Distance of a point from a straight line, Distance between two straight lines, Distance between a straight line and a plane; Spheres: Different forms, Intersection of two spheres, Orthogonal intersection, Tangents and normal, Radical plane, Radical line, Coaxial system of spheres, Pole, Polar and Conjugacy.	**15**
Unit IV	Locus, Surfaces, Curves and Conicoids Space curves, Algebraic curves, Ruled surfaces, Some standard surfaces ,Classification of quadric surfaces, Cone, Cylinder, Central conicoids, Tangent plane, Normal, Polar planes, and Polar lines.	**15**

Recommended Leaning Resources	
Print Resources	**References:** **1.** Robert J. T. Bell (1994). An Elementary Treatise on Coordinate Geometry of Three Dimensions. Macmillan India Ltd. **2.** D.Chatterjee(2009). Analytical Geometry: Two and Three Dimensions. Narosa Publishing House. **3.** Shanthi Narayan and P. K. Mittal, Analytical Solid Geometry, S.Chand Publications. **4.** A.N.Das, Analytical Geometry of Two and Three Dimensions, New Central Book Agency Pvt. Ltd. **5.** M. D. Raisinghania, Vector Calculus, S Chand Co. Pvt.Ltd., 2013. **6.** M. Spiegel, Vector Analysis, 2nd Edition, Schaum's Outline Series, Mc-Graw Hill, Education, 2017. **7.** C. E. Weatherburn, Elementary Vector Analysis, Alpha edition ,2019. **8.** P. N. Wartikar and J. N. Wartikar, A Textbook of Applied Mathematics, Vol. II, Pune Vidyarthi Griha Prakashan, Pune, 2009. **9.** C. E. Weatherburn, Differential Geometry of Three Dimension, Khosla Publishing House, 2020. **10.** B. S. Grewal, Higher Engineering Mathematics, Khanna Publishers. **11.** G. B. Thomasand R. L. Finney, Introduction to Calculus and Analytical Geometry, Narosa Publishing House,2010.

Year	III	**Course Code:**	**Credits**	02
Sem.	V	**Course Title: 5.2 Practical's on Analytical Geometry and Vector Calculus**	**Hours**	60

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 25	Summative Assessment Marks: 25	Duration of ESA:02 hrs.

Course Outcomes	**Course Learning Outcomes**: This course will enable the students to: • Learn Free and Open-Source Software (FOSS) tools for computer programming. • Solve problem on Analytical Geometry and Vector Calculus studied in **MAT DSCT 5.2** by using FOSS software's.	
	Course Content	**Hours**
	Practical/Lab Work to be performed in Computer Lab (FOSS) **Suggested Software's**: Maxima/Scilab/Python/R. **Suggested Programs**: **1.** Program on multiple product of vectors–Scalar and Cross product. **2.** Program on vector differentiation and finding unit tangent. **3.** Program to find curvature and torsion of a space curve. **4.** Program to find the gradient and Laplacian of a scalar function, divergence and curl of a vector function. **5.** Program to demonstrate the physical interpretation of gradient, divergence and curl. **6.** Program to evaluate vector line integral. **7.** Program to evaluate a surface integral. **8.** Program to evaluate a volume integral. **9.** Program to verify Green's theorem. **10.** Program to find equation and plot sphere, cone and cylinder **11.** Program to find distance between a straight line and a plane. **12.** Program to construct and plot some standard surfaces.	**60**

SEMESTER – VI

Year	III	**Course Code:**		**Credits**	04
Sem.	VI	**Course Title: 6.1Linear Algebra**		**Hours**	60
Course Pre-requisites, if any		NA			
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:02 hrs.		
Course Outcomes		**Course Learning Outcomes**: The overall expectation from this course is that the student will build a basic understanding in few areas of linear algebra such as vectors spaces, linear transformations. Some broader course outcomes are listed as follows. At the end of this course, the student will be able to • Understand the concepts of Vector spaces, subspaces, bases dimension and their properties. • Become familiar with the concepts of Eigen values and Eigen vectors, linear transformations etc. • Prove various statements in the context of vectors spaces.			
Unit No.		**Course Content**		**Hours**	
Unit I		**Rings and integral domains:** Rings, Properties of rings, sub rings, ideals, principal and maximal ideals in commutative ring, quotient ring, homomorphism and isomorphism, and integral domains.		**15**	
Unit II		**Vector spaces**: Definition, examples and properties; Subspaces - Examples, criterion for a sub-set to be a subspace and some properties; Linear Combination-Linear span, Linear dependence and Linear independence, basic properties of linear dependence and independence, techniques of determining linear dependence and independence in various vector spaces and related problems; Basis and dimension - Co-ordinates, ordered basis, some basic properties of basis and dimension and subspace Spanned by given set of vectors; Quotient space. Dimension of quotient space (derivation in finite case); Sum and Direct sum of subspaces - Dimensions of sum and direct sum spaces (Derivation in finite case).		**15**	
Unit III		**Linear transformations**: Definition, examples, equivalent criteria, some basic properties and matrix representation and change of basis and effect on associated matrix, similar matrices; Rank - Nullity theorem - Null space, Range space, proof of rank nullity theorem and related problems.		**15**	

Unit IV	**Isomorphism, Eigen values and Diagonalization:** Homomorphism, Isomorphism and automorphism-Examples, order of automorphism and Fundamental theorem of homomorphism; Eigen values and Eigen vectors-Computation of Eigen values, algebraic multiplicity, some basic properties of Eigen values, determination of eigenvectors and Eigen space and geometric multiplicity. Diagonalizability of linear transformation - Meaning, condition based on algebraic and geometric multiplicity (mentioning) and related problems(Only verification of diagonalizability).	**15**
Recommended Leaning Resources		
Print Resources	**References:** **1.** I. N. Herstein, Topics in Algebra, 2nd Edition,Wiley. **2.** Stephen H. Friedberg, Arnold J. Insel & Lawrence E. Spence (2003), Linear Algebra (4th Edition), Printice- Hall of India Pvt. Ltd. **3.** F. M. Stewart, Introduction to Linear Algebra, Dover Publications. **4.** S .Kumaresan, LinearAlgebra, Prentice Hall India Learning Private Limited. **5.** Kenneth Hoffman & Ray Kunze (2015), Linear Algebra, 2ndEdition), Prentice Hall India Leaning Private Limited. **6.** Gilbert. Strang (2015), Linear Algebra and its applications, (2ndEdition), Elsevier. **7.** Vivek Sahai & Vikas Bist(2013), Linear Algebra (2nd Edition) Narosa Publishing. **8.** Serge Lang (2005), Introduction to Linear Algebra (2nd Edition), Springer India. **9.** T. K. Manicavasagam Pillaiand K S Narayanan, Modern Algebra Volume2.	

<table>
<tr><td>Year</td><td>III</td><td colspan="2">Course Code:</td><td>Credits</td><td>02</td></tr>
<tr><td>Sem.</td><td>VI</td><td colspan="2">Course Title: 6.1Practical’s on Linear Algebra</td><td>Hours</td><td>60</td></tr>
<tr><td colspan="2">Course Pre-requisites, if any</td><td colspan="4">NA</td></tr>
<tr><td colspan="2">Formative Assessment Marks: 25</td><td colspan="2">Summative Assessment Marks: 25</td><td colspan="2">Duration of ESA:02 hrs.</td></tr>
<tr><td>Course Outcomes</td><td colspan="5">Course Learning Outcomes: This course will enable the students to:
• Learn Free and Open-Source Software (FOSS) tools for computer programming.
• Solve problem on Linear Algebra studied in MAT DSCT 6.1 by using FOSS softwares.
• Acquire knowledge of applications of Linear Algebra through FOSS.</td></tr>
<tr><td></td><td colspan="4">Course Content</td><td>Hours</td></tr>
<tr><td></td><td colspan="4">Practical/Lab Work to be performed in Computer Lab (FOSS)
Suggested Software’s: Maxima/ Scilab /Python/R.
Suggested Programs:
1. Program to find whether given finite set is ring or not.
2. Programs on sub-rings, ideals.
3. Program to verify homomorphism of rings.
4. Program to verify isomorphism of rings.
5. Program on linear combination of vectors.
6. Program to verify linear dependence and independence.
7. Program to find basis and dimension of the subspaces.
8. Program to verify if a function is linear transformation or not.
9. Program to find the matrix of linear transformation.
10. Program to find the Eigen values and Eigen vectors of a given linear transformation.
11. Program on Rank–nullity theorem.
12. Program to verify if the given linear transformation is singular/non-singular.</td><td>60</td></tr>
</table>

Year	III	**Course Code:**	**Credits**	04
Sem.	VI	**Course Title: 6.2NumericalAnalysis**	**Hours**	60
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:02 hrs.	

Course Outcomes	**Course Learning Outcomes**: The overall expectation from this course is that the student will get equipped with certain numerical techniques for various computations such as finding roots, finding the integrals and derivatives, and finding solutions to differential equations. Some broader course outcomes are listed as follows. At the end of this course, the student will be able to • Describe various operators arising in numerical analysis such as difference operators, shift operators and so on. • Articulate the rationale behind various techniques of numerical analysis such as in finding roots, integrals and derivatives. • Reproduce the existing algorithms for various tasks as mentioned previously in numerical analysis. • Apply the rules of calculus and other areas of mathematics in justifying the techniques of numerical analysis. • Solve problems using suitable numerical technique. • Appreciate the profound applicability of techniques of numerical analysis in solving real life problems and also appreciate the way the techniques are modified to improve the accuracy.	
Unit No.	**Course Content**	**Hours**
Unit I	**Algebraic and Transcendental Equations:** Errors-Significant digits, absolute, relative, percentage errors, rounding off and truncation errors (meanings and related problems), general error formula(derivation of formula and problems based on it), error in series approximation: Taylor series approximations (problems only), Solutions to algebraic and transcendental equations- Bisection method, Regula-Falsi method, iterative method Newton-Raphson method and secant method (Plain discussion of the rationale behind techniques and problems on their applications).	**15**
Unit II	**System of Linear Algebraic Equations:** Direct Methods–Gauss elimination method, Gauss-Jordan elimination method and Tringularization method; Iterative methods – Jacobi method, Gauss-Jacobi method, Gauss- Seidal method, Successive- Over Relaxation method(SOR) method.	**15**
Unit III	**Polynomial Interpolations:** Finite differences. Forward and backward differences and shift operators: definitions, properties and problems; Polynomial interpolation-Newton-Gregory forward and backward interpolation formulae, Gauss's Forward and backward interpolation formulae, Lagrange interpolation polynomial, Newton's general interpolation formula (Discussion on setting up	**15**

	the polynomials, differences between them and problems on their applications).	
Unit IV	**Numerical Differentiation and Integration:** Formula for derivatives (till second order) based on Newton-Gregory forward and backward interpolations (Derivations and problems based on them). Numerical Integration-General quadrature formula, Trapezoidal rule, Simpson's 1/3rule, Simpson's 3/8 rule and Weddell's rule (derivations for only general quadrature formula, trapezoidal rule and Simpson's $1/3^{rd}$ rule and problems on the applications of all formulas).	**15**
Recommended Leaning Resources		
Print Resources	**References:** **1.** E. Isaacson and H. B. Keller, Analysis of Numerical methods, Dover Publications. **2.** S. S. Sastry, Introductory methods of Numerical Analysis, 5^{th} Edition, PHI Learning Private Limited. **3.** E Kreyszig, Advanced Engineering Mathematics, Wiley India Pvt. Limited **4.** B. S .Grewal, Numerical Methods for Scientists and Engineers, Khanna Publishers. **5.** M. K. Jain, S. R. K. Iyengar and R. K. Jain, Numerical Methods for Scientific and Engineering computation, 4^{th} Edition, New Age International **6.** H. C. Saxena, Finite Difference and Numerical Analysis, S. Chand Publishers. **7.** B. D. Gupta, Numerical Analysis, Konark Publishers Pvt. Ltd.	

Year	III	**Course Code:**	**Credits**	02
Sem.	VI	**Course Title: 6.2 Practical's on Numerical Analysis**	**Hours**	60

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 25	Summative Assessment Marks: 25	Duration of ESA:02 hrs.

Course Outcomes	**Course Learning Outcomes**: This course will enable the students to: • Learn Free and Open-Source Software(FOSS) tools for computer programming. • Solve problem on numerical Analysis studied in **MAT DSC T 6.2** by using FOSS software's. • Acquire knowledge of applications of numerical Analysis through FOSS.	
	Course Content	**Hours**
	Practical/Lab Work to be performed in Computer Lab (FOSS) **Suggested Software's**: Maxima /Scilab /Python/R. **Suggested Programs**: **1.** Program to find root of an equation using bisection and Regula - Falsi methods. **2.** Program to find root of an equation using Newton - Raphson and Secant methods. **3.** Program to solve system of algebraic equations using Gauss-elimination method. **4.** Program to solve system of algebraic equations using Gauss-Jordan method. **5.** Program to solve system of algebraic equation using Gauss-Jacobi method. **6.** Program to solve system of algebraic equation using Gauss-Seidel method. **7.** Program to solve the system of algebraic equations using SOR method **8.** Program to evaluate integral using Simpson's1/3 and 3/8 rules. **9.** Program to evaluate integral using Trapezoidal and Weddle rules. **10.** Program to find the sums of powers of successive natural numbers using Newton–Gregory technique. **11.** Program to find differentiation at specified point using Newton-Gregory interpolation method. **12.** Program to find the missing value of table using Lagrange method.	**60**

Internship for graduate Programme (As per UGC)

Course title	Internship Discipline specific
No. of contact hours	90
No. of credits	2
Method of evaluation	Presentation/Report of submission/Activity etc.,

- Internship shall be Discipline Specific of 90 hours (2 credits) with a duration 4-6 weeks.
- Internship may be full-time/part-time (full-time during semester holidays and part-time in the academic session).
- Internship mentor/supervisor shall avail work allotment during 6^{th} semester for a maximum of 20 hours.
- The student should submit the final internship report (90 hours of Internship) to the mentor for completion of the internship.
- The detailed guidelines and formats shall be formulated by the universities separately as prescribed in accordance to UGC guidelines.

RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS
as per the Choice Based Credit System (CBCS)
designed in accordance with
Learning Outcomes-Based Curriculum Framework (LOCF)
of National Education Policy (NEP) 2020
for

Bachelor of Science
(Computer Science)

w.e.f.

Academic Year 2021-22 and onwards

Board of Studies (UG) Committee

Bachelor of Science (Computer Science)Programme 2021-22

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PREAMBLE

Computer Science (CS) has been evolving as an important branch of science and technology in last two decade and it has carved out a space for itself like engineering. Computer Science spans theory and more application and it requires thinking both in abstract terms and in concrete terms.

The ever -evolving discipline of computer science has strong connections to other disciplines. Many problems in science, engineering, health care, business, and other areas can be solved effectively with computers, but finding a solution requires both computer science expertise and knowledge of the particular domain. Computer science has a wide range of specialties. These include Computer Architecture, Software Systems, Graphics, Artificial Intelligence, Mathematical and Statistical Analysis, Data Science, Computational Science, and Software Engineering.

Universities and other HEIs introduced programmes of computer science. Information Technology is growing rapidly. Increasing applications of computers in almost all areas of human endeavour has led to vibrant industries with concurrent rapid change in technology. Unlike other basic disciplines, developing core competency in this discipline that can be reasonably stable becomes a challenge.InIndia, it was initially introduced at the Master (postgraduate) level as MCA and M.Tech. Later on, engineering programmes such as B.Tech and B.E in Computer Science & Engineering and in Information Technology were introduced in various engineering College/Institutions to cater to the growing demand for trained engineering manpower in IT industries.Parallelly, BCA, BSc and MSc programmes with specialisation in Computer Science were introduced to train manpower in this highly demanding area.

BSc and BSc (Hons) are aimed at undergraduate level training facilitating multiple career paths. Students so graduated, can take up postgraduate programmes in CS(M.Sc)or MCA leading to research as well as R&D, can be employable at IT industries, or can pursue a teaching profession or can adopt a business management career. BSc and BSc (Hons) aims at laying a strong foundation of computer science at

an early stage of the career. There are several employment opportunities and after successful completion of BSc, graduating students can fetch employment directly in companies as programmer, Web Developer, Software Engineer, Network Administrator, Data Scientist, or AI/ML personnel.

The Program outcomes in BSc are aimed at allowing flexibility and innovation in design and development of course content, in method of imparting training, in teaching learning process and in assessment procedures of the learning outcomes. The emphasis in BSc courses, in outcome-based curriculum framework, help students learn solving problems, accomplishing IT tasks, and expressing creativity, both individually and collaboratively. The proposed framework will help Students learn programming techniques and the syntax of one or more programming languages.

All students must, therefore, have access to a computer with a modern programming language installed. The computer science framework does not prescribe a specific language. The teacher and students will decide which modern programming languages students will learn. More importantly, students will learn to adapt to changes in programming languages and learn new languages as they are developed.

The present Curriculum Framework for BSc degrees is intended to facilitate the students to achieve the following.

- To develop an understanding and knowledge of the basic theory of Computer Science and Information Technology with good foundation on theory, systems and applications such as algorithms, data structures, data handling, data communication and computation
- To develop the ability to use this knowledge to analyse new situations in the application domain
- To acquire necessary and state-of-the-art skills to take up industry challenges. The objectives and outcomes are carefully designed to suit to the above-mentioned purpose.
- The ability to synthesize the acquired knowledge, understanding and experience for a better and improved comprehension of the real-life problems

- To learn skills and tools like mathematics, statistics and electronics to find the solution, interpret the results and make predictions for the future developments
- To formulate, to model, to design solutions, procedure and to use software tools to solve real world problems and evaluate

PROGRAM OUTCOMES:

1. **Discipline knowledge:** Acquiring knowledge on basics of Computer Science and ability to apply to design principles in the development of solutions for problems of varying complexity
2. **Problem Solving**: Improved reasoning with strong mathematical ability to Identify, formulate and analyze problems related to computer science and exhibiting a sound knowledge on data structures and algorithms.
3. **Programming a computer**: Exhibiting strong skills required to program a computer for various issues and problems of day-to-day applications with thorough knowledge on programming languages of various levels.
4. **Application Systems Knowledge:** Possessing a sound knowledge on computer application software and ability to design and develop app for applicative problems.
5. **Communication:** Must have a reasonably good communication knowledge both in oral and writing.
6. **Ethics on Profession, Environment and Society:** Exhibiting professional ethics to maintain the integrality in a working environment and also have concern on societal impacts due to computer-based solutions for problems.
7. **Lifelong Learning:** Should become an independent learner. So, learn to learn ability.
8. **Motivation to take up Higher Studies:** Inspiration to continue educations towards advanced studies on Computer Science.

By the end of the program the students will be able to:

The Bachelor of Computer Science (BSc (Hons)) program enables students to attain following additional attributes besides the afore-mentioned attributes, by the time of graduation:

1. Apply standard Software Engineering practices and strategies in real -time software project development
2. Acquaint with the contemporary trends in industrial/research settings and thereby innovate novel solutions to existing problems
3. The ability to apply the knowledge and understanding noted above to the analysis of a given information handling problem.
4. The ability to work independently on a substantial software project and as an effective team member.

RANI CHANNAMMA UNIVERSITY

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Curricular and Credits Structure under Choice Based Credit System [CBCS] of Computer Science Major& One Minor Discipline Scheme for the Four Years Computer Science B.Sc. Undergraduate Honors Programmewith effect from 2021-22

SEMESTER-I											
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L1	21BSC1L1LK1	Kannada	40	60	100	4	-	-	3	2
	21BSC1L1LFK1	Functional Kannada								
L2	21BSC1L2LEN2	English	40	60	100	4	-	-	3	2
	21BSC1L2LHI2	Hindi								
	21BSC1L2LSN2	Sanskrit								
	21BSC1L2LTE2	Telugu								
	21BSC1L2LUR2	Urdu								
DSC1	21BSC1C1CS1L	Computer Fundamentals and Programming in C	40	60	100	4	-	-	4	2
	21BSC1C1CS1P	C Programming Lab	25	25	50	-	-	4	2	3
DSC1	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
SEC1	21BSC1SE1CS1	Digital Fluency	25	25	50	1	-	2	2	2
VBC1	21BSC1V1PE1	Physical Education- Yoga	25	-	25	-	-	2	1	-
VBC2	21BSC1V2HW1	Health & Wellness	25	-	25	-	-	2	1	-
OEC1	21BSC1O1CS1	C Programming Concepts	40	60	100	3	-	-	3	2
			Total Marks		**700**	**Semester Credits**			**25**	

SEMESTER-II										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L3	21BSC2L3LK2	Kannada	40	60	100	4	-	-	3	2
	21BSC2L3FKL2	Functional Kannada								
L4	21BSC2L4EN2	English	40	60	100	4	-	-	3	2
	21BSC2L4HI2	Hindi								
	21BSC2L4SN2	Sanskrit								
	21BSC2L4TE2	Telugu								
	21BSC2L4UR2	Urdu								
DSC2	21BSC2C2CS2L	Data Structures using C	40	60	100	4	-	-	4	2
	21BSC2C2CS2P	Data structures Lab	25	25	50	-	-	4	2	3
DSC2	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
AECC1	21BSC2AE1ES2	Environmental Studies	20	30	50	3	-	-	2	2
VBC3	21BSC2V3PE2	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC4	21BSC2V4NC1	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC2	21BSC2O2CS2	Web Designing	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	
Exit option with Certificate (with the completion of courses equal to a minimum of 48 credits)					**1400**				**50**	

SEMESTER-III										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L5	21BSC3L5LK3	Kannada	40	60	100	4	-	-	3	2
	21BSC3L5LFK3	Functional Kannada								
L6	21BSC3L6EN3	English	40	60	100	4	-	-	3	2
	21BSC3L6HI3	Hindi								
	21BSC3L6SN3	Sanskrit								
	21BSC3L6TE3	Telugu								
	21BSC3L6UR3	Urdu								
DSC3	21BSC3C3CS1L	Object Oriented Programming in JAVA	40	60	100	4	-	-	4	2
	21BSC3C3CS1P	JAVA Lab	25	25	50	-	-	4	2	3
DSC3	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
SEC2	21BSC3SE2ES2	Artificial Intelligence	25	25	50	1	-	2	2	2
VBC5	21BSC3V5PE3	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC6	21BSC3V6NC2	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC3	21BSC3O3CS5	R Programming	40	60	100	3	-	-	3	2
			Total Marks		**700**	**Semester Credits**			**25**	

SEMESTER-IV										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L7	21BSC4L7LK4	Kannada	40	60	100	4	-	-	3	2
	21BSC4L7LFK4	Functional Kannada								
L8	21BSC4L8EN4	English	40	60	100	4	-	-	3	2
	21BSC4L8HI4	Hindi								
	21BSC4L8SN4	Sanskrit								
	21BSC4L8TE4	Telugu								
	21BSC4L8UR4	Urdu								
DSC4	21BSC4C2CS2L	Database Management Systems	40	60	100	4	-	-	4	2
	21BSC4C2CS2P	DBMS Lab	25	25	50	-	-	4	2	3
DSC4	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
AECC2	21BSC4AE1CI2	Constitution of India	20	30	50	3	-	-	2	2
VBC7	21BSC4V5PE4	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC8	21BSC4V6NC3	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC4	21BSC4O3CS7	Multimedia & Animation	40	60	100	3	-	-	3	2
Total Marks					**700**	**Semester Credits**			**25**	
Exit option with Diploma in Science (with the completion of courses equal to a minimum of 96 credits)OR continue studies with Major and Minor					**2800**				**100**	

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Computer Science as Major Discipline										
DSC5	21BSC5C5CSMJ1L	Programming in PYTHON	40	60	100	3	-	-	3	2
	21BSC5C5CSMJ1P	PYTHON Programming lab	25	25	50	-	-	4	2	3
DSC6	21BSC5C5CSMJ2L	Computer Networks	40	60	100	3	-	-	3	2
	21BSC5C5CSMJ2P	Computer Networks Lab	25	25	50	-	-	4	2	3
DSC5	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	3
VC1	21BSC5VC1US	Unix & Shell Programming	40	60	100	3	-	-	3	2
	21BSC5VC1FD	Fundamentals of Data Science								
VBC9	21BSC5V5PE5	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC10	21BSC5V6NC4	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
SEC3	21BSC5SE3CS3	Cyber Security	25	25	50	1	-	2	2	2
		Total Marks			**650**	**Semester Credits**			**22**	

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
Computer Science as Major Discipline										
DSC7	21BSC6C6CSMJ1L	Internet Technologies	40	60	100	3	-	-	3	2
	21BSC6C6CSMJ1P	Internet Technology Lab	25	25	50	-	-	3	2	3
DSC8	21BSC6C6CSMJ2L	Operating System Concepts	40	60	100	3	-	-	3	2
	21BSC6C6CSMJ2P	C# Programming Lab	25	25	50	-	-	3	2	3
DSC6	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	3	2	3
VC2	21BSC6VC2HT	Health Care Technologies	40	60	100	3	-	-	3	2
	21BSC6VC2DM	Digital Marketing								
INT1	21BSC6 INT1L	Internship*	25	50	75	-	-	-	2	2
VBC1	21BSC6V5PE5	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC2	21BSC6V6NC4	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
SEC4	21BSC6SE4CS4	Professional Communication	25	25	50	1	-	2	2	2
Total Marks					**700**	**Semester Credits**			**24**	
Exit with Bachelor of Science Degree, B. Sc. (with the completion of courses equal to a minimum of 140 credits)or continue studies with the Major					**4175**	**Total Credits for BSC Program**			**146**	

*Internship between 5 th& 6th Semester with 3 to 4 weeks

Computer Science Subject as a Minor Discipline

SEMESTER-V									
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC5 As a Minor Subject	21BSC5C5CSMN1L	Programming in PYTHON	40	60	100	3	-	-	3	2
	21BSC5C5CSMN1P	PYTHON Programming lab	25	25	50	-	-	3	2	3

SEMESTER-VI									
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC6 As a Minor Subject	21BSC6C6CSMN1L	Internet Technologies	40	60	100	3	-	-	3	2
	21BSC6C6CSMN1P	Internet Technology Lab	25	25	50	-	-	3	2	3

Concept Note, Abbreviation Explanation and Coding:

Concept Note:

1. **CBCS** is a mode of learning in higher education which facilitates a student to have some freedom in selecting his/her own choices, across various disciplines for completing a UG/PG program.
2. A credit is a unit of study of a fixed duration. For the purpose of computation of workload as per UGC norms the following is mechanism be adopted in the University:
   One credit (01) = One Theory Lecture (L) period of one (1) hour.
   One credit (01) = One Tutorial (T) period of one (1) hour.
   One credit (01) = One practical (P) period of two (2) hours.
3. Course: paper/subject associated with AECC, DSC, DSEC, SEC, VBC, OEC, VC, IC and MIL
4. In case of **B.Sc**. **Once a candidate chose two courses/subjects of a particular two department in the beginning, he/she shall continue the same till the end of the degree, then there is no provision to change the course(s) and Department(s).**
5. A candidate shall choose **one of the Department's courses as major and other Department course as minor in fifth and sixth semester and major course will get continued in higher semester.**
6. Wherever there is a practical there will be no tutorial and vice-versa
7. A major subject is the subject that's the main focus of Core degree/concerned.
8. A minor is a secondary choice of subject that complements core major/ concerned.
9. Vocational course is a course that enables individual to acquire skills set that are required for a particular job.
10. Internship is a designated activity that carries some credits involving more than **25 days** of working in an organization (either in same organization or outside) under the guidance of an identified mentor. Internship shall be an integral part of the curriculum.
11. **OEC: For non- computer science students. Computer Science students have to opt for OEC from departments other than major and minor disciplines.**

Abbreviation Explanations:

1. AECC: Ability Enhancement Compulsory Course.
2. DSC: Discipline Specific Core Course.
3. DSEC: Discipline Specific Elective Course.
4. SEC: Skill Enhancement Course.
5. VBC: Value Based Course.
6. OEC: Open/Generic Elective Course
7. VC: Vocational Course.
8. IC: Internship Course
9. L1: Language One
10. L2: MIL
11. L= Lecture; T= Tutorial; P=Practical.
12. MIL= Modern Indian Language; English or Hindi or Telugu or Sanskrit or Urdu

Program Coding:

1. Code 21: Year of Implementation
2. Code BSC: BSC Program under the faculty of Applied Science of the University
3. Code 1: First Semester of the Program, (2 to 6 represent higher semesters)
4. Code AE: AECC, (C for DSC, S for SEC, V for VBC and O for OEC)
5. Code 1: First "AECC" Course in semester, similarly in remaining semester for such other courses
6. Code LK: Language Kannada, similarly Language English, Language Hindi, Language Telugu, Language Sanskrit, &Language Urdu
7. Code 1: Course in that semester.
8. CS: Computer Science

ASSESSMENT METHODS

Evaluation Scheme for Internal Assessment:

Theory:

Assessment Criteria	40 marks
1st Internal Assessment Test for30 marks 1 hr after 8 weeks and 2nd Internal Assessment Test for 30 marks 1 hr after 15 weeks . Average of two tests should be considered.	30
Assignment	10
Total	**40**

Assessment Criteria	25 marks
1st Internal Assessment Test for20 marks 1hr after 8 weeks and 2nd Internal Assessment Test for 20 marks 1hr after 15 weeks. Average of two tests should be considered.	20
Assignment	05
Total	**25**

Practical:

Assessment Criteria	25 marks
Semester End Internal Assessment Test for 20 marks 2 hrs	20
Journal (Practical Record)	05
Total	**25**

Question Paper Pattern:

RANI CHANNAMMA UNIVERSITY
Department of Computer Science

BSc(Computer Science)

Sub: Code: Maximum Marks: 60

a. Answer any Six Questions from Question 1 b. Answer any Three each Questions from Question 2,3,4 and 5

Q.No.1.	Answer any Six Questions (Atlest Two question from Each Unit) a. b. c. d, e. f. g. h.	2X6=12
Q.No.2.	(Should cover Entire Unit-I) a. b. c. d.	4X3=12
Q.No.3.	(Should cover Entire Unit-II) a. b. c. d.	4X3=12
Q.No.4.	(Should cover Entire Unit-III) a. b. c. d.	4X3=12
Q.No.5.	(Should cover Entire Unit-IV) a. b. c. d.	4X3=12

COURSE-WISE SYLLABUS

Semester I

Year	I	**Course Code:**21BSC1C1CS1L	**Credits**	04
Sem.	1	**Course Title:** Computer Fundamentals and Programming in C	**Hours**	52

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	After completing this course satisfactorily, a student will be able to: • Confidently operate Desktop Computers to carry out computational tasks • Understand working of Hardware and Software and the importance of operating systems • Understand programming languages, number systems, peripheral devices, networking, multimedia and internet concepts • Read, understand and trace the execution of programs written in C language • Write the C code for a given problem • Perform input and output operations using programs in C • Write programs that perform operations on arrays	
Unit No.	**Course Content**	**Hours**
Unit I	**Fundamentals of Computers**: Introduction to Computers - Computer Definition, Characteristics of Computers, Evolution and History of Computers, Types of Computers, Basic Organisation of a Digital Computer; Number Systems – different types, conversion from one number system to another; Computer Codes – BCD, Gray Code, ASCII and Unicode; Boolean Algebra – Boolean Operators with Truth Tables; Types of Software – System Software and Utility Software; Computer Languages - Machine Level, Assembly Level & High Level Languages, Translator Programs – Assembler, Interpreter and Compiler; Planning a Computer Program - Algorithm, Flowchart andPseudo code with Examples. **Introduction to C Programming**: Over View of C; History and Features of C; Structure of a C Program with Examples; Creating and Executing a C Program; Compilation process in C.	13
Unit II	**C Programming Basic Concepts**: C Character Set; C tokens - keywords, identifiers, constants, and variables; Data types; Declaration & initialization of variables; Symbolic constants. **Input and output with C**: Formatted I/O functions - printf and scanf, control stings and escapesequences, output specifications with printf functions; Unformatted I/O functions to read and display single character and a string - getchar, putchar, gets and	13

	puts functions. **C Operators & Expressions**: Arithmetic operators; Relational operators; Logical operators; Assignment operators; Increment & Decrement operators; Bitwise operators; Conditional operator; Special operators; Operator Precedence and Associatively; Evaluation of arithmeticexpressions; Type conversion.	
Unit III	**Control Structures**: Decision making Statements - Simple if, if_else, nested if_else, else_ifladder,Switch-case, goto, break & continue statements; Looping Statements - Entry controlled and Exit controlled statements, while, do-while, for loops, Nested loops. **Arrays**: One Dimensional arrays - Declaration, Initialization and Memory representation; Two Dimensional arrays - Declaration, Initialization and Memory representation. **Strings**: Declaring & Initializing string variables; String handling functions - *strlen, strcmp, strcpy and strcat;* Character handling functions - *toascii, toupper, tolower, isalpha, isnumeric*etc.	13
Unit IV	**Pointers in C:** Understanding pointers - Declaring and initializing pointers, accessing address and value of variables using pointers; Pointers and Arrays; Pointer Arithmetic; Advantages and disadvantages of using pointers; **User Defined Functions:** Need for user defined functions; Format of C user defined functions; Components of user defined functions - return type, name, parameter list, function body, return statement and function call; Categories of user defined functions - With and without parameters and return type. **User defined data types:** Structures - Structure Definition, Advantages of Structure, declaring structure variables, accessing structure members, Structure members initialization, comparing structure variables, Array of Structures; Unions - Union definition; difference between Structures and Unions.	13
Recommended Leaning Resources		
Print Resources	**Text Books** 1. Pradeep K. Sinha and PritiSinha: Computer Fundamentals (Sixth Edition), BPBPublication 2. E. Balgurusamy: Programming in ANSI C(TMH) **References** 1. Kamthane: Programming with ANSI and TURBO C (PearsonEducation) 2. V. Rajaraman: Programming in C (PHI –EEE) 3. S. ByronGottfried: Programming with C(TMH) 4. Kernighan &Ritche: The C Programming Language(PHI) 5. YashwantKanitkar: Let usC	

Year	I	**Course Code:** 21BSC1C1CS1P	**Credits**	02
Sem.	I	**Course Title:**C Programming Lab	**Hours**	45
Course Pre-requisites, if any:		Knowledge of Programming		
Formative Assessment Marks: 25		Summative Assessment Marks: 25	Duration of ESA: 03 hrs.	

Practice Labs

1. The following activities be carried out/ discussed in the lab during the initial period of the semester.
    1. Basic Computer Proficiency
        a. Familiarization of Computer Hardware Parts
        b. Basic Computer Operations and Maintenance.
        c. Do's and Don'ts, Safety Guidelines in Computer Lab
    2. Familiarization of Basic Software – Operating System, Word Processors, Internet Browsers, Integrated Development Environment (IDE) with Examples.
    3. Type Program Code, Debug and Compile basic programs covering C Programming fundamentals discussed during theory classes.

Part A:

1. Write a C Program to read radius of a circle and to find area and circumference
2. Write a C Program to read three numbers and find the biggest of three
3. Write a C Program to demonstrate library functions in *math.h*
4. Write a C Program to check for prime
5. Write a C Program to generate n primes
6. Write a C Program to read a number, find the sum of the digits, reverse the number and check it for palindrome
7. Write a C Program to read numbers from keyboard continuously till the user presses 999 and to find the sum of only positive numbers
8. Write a C Program to read percentage of marks and to display appropriate message (Demonstration of else-ifladder)
9. Write a C Program to find the roots of quadratic equation (demonstration of switch-case statement)
10. Write a C program to read marks scored by n students and find the average of marks (Demonstration of single dimensional array
11. Write a C Program to remove Duplicate Element in a single dimensionalArray
12. Program to perform addition and subtraction ofMatrices

PART B:

1. Write a C Program to find the length of a string without using built in function
2. Write a C Program to demonstrate string functions.
3. Write a C Program to demonstrate pointers in C
4. Write a C Program to check a number for prime by defining *isprime( )*function
5. Write a C Program to read, display and to find the trace of a square matrix
6. Write a C Program to read, display and add two m x n matrices using functions

	7. Write a C Program to read, display and multiply two m x n matrices using functions 8. Write a C Program to read a string and to find the number of alphabets, digits, vowels, consonants, spaces and special characters. 9. Write a C Program to Reverse a String using Pointer 10. Write a C Program to Swap Two Numbers using Pointers 11. Write a C Program to demonstrate student structure to read & display records of n students. 12. Write a C Program to demonstrate the difference between structure &union.

Note: Student has to execute a minimum of 10 programs in each part to complete the Lab course

Evaluation Scheme for Lab Examination

Assessment Criteria		**Marks**
Activity – 1 from Part A	Write up on the activity/ task	3
	Demonstration of the activity/ task	07
Activity-2 from Part B	Write up on the activity/ task	3
	Demonstration of the activity/ task	07
Viva based on Lab Activities		05
Total		**25**

OPEN-ELECTIVE SYLLABUS :

Year	I	**Course Code:** 21BSC1O1CS1	**Credits**	03
Sem.	1	**Course Title:** C Programming Concepts	**Hours**	40

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA:.02 hrs.

Course Outcomes	At the end of the course the student should be able to: 1. Read, understand and trace the execution of programs written in C language 2. Write the C code for a given problem 3. Perform input and output operations using programs in C 4. Write programs that perform operations on arrays 5. Write user defined functions to perform a task

Unit No.	**Course Content**	**Hours**
Unit I	**Introduction to C Programming:** Overview of C; History and Features of C; Structure of a C Program with Examples; Creating and Executing a C Program; Compilation process in C. **C Programming Basic Concepts:** C Character Set; C tokens - keywords, identifiers, constants, and variables; Data types; Declaration & initialization of variables; Symbolic constants.	10
Unit II	**Input and output with C:** Formatted I/O functions – *printf*and*scanf,* control stings and escape sequences, output specifications with *printf*functions; Unformatted I/O functions to read and display single character and a string - *getchar*, *putchar*, *gets* and *puts* functions **C Operators & Expressions:** Arithmetic operators; Relational operators; Logical operators; Assignment operators; Increment & Decrement operators; Bitwise operators; Conditional operator; Special operators; Operator Precedence and Associatively; Evaluation of arithmetic expressions; Type conversion. **Control Structures:** Decision making Statements - S*imple if, if_else*, *nested if_else, else_if ladder, Switch Case*, *goto, break* &*continue* statements	10
Unit III	Looping Statements - Entry controlled and exit controlled statements, *while, do-while, for* loops, Nested loops. **Derived data types in C:** Arrays: One Dimensional arrays - Declaration, Initialization and Memory representation; Two Dimensional arrays - Declaration, Initialization and Memory representation. **Strings:** Declaring & Initializing string variables; String handling functions - *strlen, strcmp, strcpy and strcat;* Character handling functions - *toascii, toupper, tolower, isalpha, isnumericetc*	10

Unit IV	**User Defined Functions:** Need for user defined functions; Format of C user defined functions; Components of user defined functions - return type, name, parameter list, function body, return statement and function call; Categories of user defined functions - With and without parameters and return type.	10
Recommended Leaning Resources		
Print Resources	**Text Books:** 1. C: The Complete Reference, By HerbertSchildt. 2. C Programming Language, By Brain W.Kernighan 3. Kernighan & Ritchie: The C Programming Language(PHI) **References** 1. E. Balaguruswamy: Programming in ANSI C(TMH) 2. Kamthane: Programming with ANSI and TURBO C (PearsonEducation) 3. V. Rajaraman: Programming in C (PHI –EEE) 4. S. Byron Gottfried: Programming with C(TMH) 5. YashwantKanitkar: Let usC	

Semester: II

Year	I	**Course Code:** 21BSC2C2CS2L	**Credits**	04
Sem.	2	**Course Title:** Data Structures using C	**Hours**	52

Course Pre-requisites, if any	NA	
Formative Assessment Marks: 40	Summative Assessment Marks: 60	Duration of ESA: 02 hrs.

Course Outcomes	After completing this course satisfactorily, a student will be able to: • Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used byalgorithms • Describe common applications for arrays, records, linked structures, stacks, queues, trees, andgraphs • Write programs that use arrays, records, linked structures, stacks, queues, trees, andgraphs • Demonstrate different methods for traversingtrees • Compare alternative implementations of data structures with respect toperformance • Describe the concept of recursion, give examples of itsuse • Discuss the computational efficiency of the principal algorithms for sorting andsearching	
Unit No.	**Course Content**	**Hours**
Unit I	Introduction to data structures: Definition; Types of data structures - Primitive & Non-primitive, Linear and Non-linear; Operations on data structures.Algorithm Specification, Performance Analysis, Performance Measurement Recursion: Definition; Types of recursions; Recursion Technique Examples - Fibonacci numbers,GCD, Binomial coefficient ${}^{n}C_{r}$, Towers of Hanoi; Comparison between iterative and recursive functions.Arrays: Basic Concepts – Definition, Declaration, Initialization, Operations on arrays; Types of arrays; Arrays as abstract data types (ADT); Representation of Linear Arrays in memory;	13
Unit II	Traversinglinear arrays;Insertinganddeletingelements;Sorting– Selectionsort,Bubblesort,Quick sort, Selection sort, Insertion sort; Searching - Sequential Search, Binary search; Iterative and Recursive searching; Stacks:BasicConcepts– DefinitionandRepresentationofstacks;Operationsonstacks;Applications of stacks; Infix, postfix and prefix notations; Conversion from infix	13

	to postfix using stack; Evaluation of postfix expression using stack;	
Unit III	Queues: Basic Concepts – Definition and Representation of queues; Types of queues - Simple queues, Circular queues, Double ended queues, Priority queues; Operations on Simple queues;Dynamic memory allocation: Static & Dynamic memory allocation; Memory allocation and de- allocation functions - malloc, calloc, reallocandfree.Linked list: Basic Concepts – Definition and Representation of linked list, Types of linked lists - Singly linked list, Doubly liked list, Header liked list, Circular linked list; Representation of Linked list in Memory; Operations on Singly linked lists – Traversing, Searching, Insertion, Deletion; Memory allocation; Garbage collection	13
UnitIV	Trees: Definition; Tree terminologies –node, root node, parent node, ancestors of a node, siblings, terminal & non-terminal nodes, degree of a node, level, edge, path, depth; Binary tree: Type of binary trees - strict binary tree, complete binary tree, binary search tree and heap tree; Array representation of binary tree. Traversal of binary tree; *preorder, inorder*and*Postorder*traversal; Reconstruction of a binary tree when any two of the traversals are given.	13
Recommended Leaning Resources		
Print Resources	**Reference Books:** 1. Ellis Horowitz and SartajSahni: Fundamentals of Data Structures 2. Tanenbaum: Data structures using C (Pearson Education) 3. Kamathane: Introduction to Data structures (Pearson Education) 4. Y. Kanitkar: Data Structures Using C(BPB) 5. Kottur: Data Structure Using C 6. Padma Reddy: Data Structure Using C 7. Sudipa Mukherjee: Data Structures using C – 1000 Problems and Solutions (McGraw Hill Education,2007)	

Year	I	**Course Code:** 21BSC2C2CS2P	**Credits**	02
Sem.	I	**Course Title:**Data Structure Lab	**Hours**	45
Course Pre-requisites, if any:		Knowledge of Programming		
Formative Assessment Marks: 25		Summative Assessment Marks: 25	Duration of ESA: 03 hrs.	

Part A:

1. Write a C Program to find GCD using recursive function
2. Write a C Program to display Pascal Triangle using binomial function
3. Write a C Program to generate n Fibonacci numbers using recursive function.
4. Write a C Program to implement Towers of Hanoi.
5. Write a C Program to implement dynamic array, find smallest and largest element of the array.
6. Write a C Program to create two files to store even and odd numbers.
7. Write a C Program to create a file to store student records.
8. Write a C Program to read the names of cities and arrange them alphabetically.
9. Write a C Program to sort the given list using selection sort technique.
10. Write a C Program to sort the given list using bubble sort technique.

PART B:

1. Write a C Program to sort the given list using insertion sort technique.
2. Write a C Program to sort the given list using quick sort technique.
3. Write a C Program to sort the given list using merge sort technique.
4. Write a C Program to search an element using linear search technique.
5. Write a C Program to search an element using recursive binary search technique.
6. Write a C Program to implement Stack.
7. Write a C Program to convert an infix expression to postfix.
8. Write a C Program to implement simple queue.
9. Write a C Program to implement linear linked list.
10. Write a C Program to display traversal of a tree.

Evaluation Scheme for Lab Examination

Assessment Criteria		**Marks**
Activity – 1 from Part A	Write up on the activity/ task	3
	Demonstration of the activity/ task	07
Activity-2 from Part B	Write up on the activity/ task	3
	Demonstration of the activity/ task	07
Viva based on Lab Activities		05
Total		**25**

OPEN-ELECTIVE SYLLABUS:

Year	I	**Course Code:** 21BSC2O2CS2	**Credits**	03
Sem.	II	**Course Title:** Web Designing	**Hours**	40
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA:.02 hrs.	
Course Outcomes	At the end of the course the student should be able to: 1. Read, understand and trace the execution of programs 2. Write the code for a given problem 3. Perform input and output operations using programs 4. Write user defined functions to perform a task			

Unit No.	**Course Content**	**Hours**
Unit I	History of Internet, The World Wide Web, Web Browser, Web Server, URL, Working of Web, Web Page, Types of Web Pages, Web Content, Websites, Home Pages, Building Website, Website building tools; Web graphics design, basic tips for graphics design, Web Designing tools: Gimp-image resize, crop, edit background, save with different file types. Introduction to web programming: what is web programming? , web programming languages.	10
Unit II	Introduction to XHTML- Basic Syntax, Standard structure, Basic text markup, Images, Hypertext, Links, Lists, Tables, Forms-<form>,<input>,<label>,<select>,<textarea> tags and action buttons(submit and reset). CSS- Introduction, Levels of style sheets, Selector forms, Property value forms, Font properties, List properties, Color, Alignment of text, The box model, Background images, The and tags.	10
Unit III	JavaScript: Object orientation and JavaScript; General syntactic characteristics; Primitives, operations, and expressions; Screen output and keyboard input; Control statements; Object creation and modification; Arrays; Functions; Constructor; Pattern matching using regular expressions; Errorsin scripts; Examples.	10
Unit IV	Introduction to XML, Syntax of XML , XML document structure, Displaying raw XML documents, Displaying XML documents with CSS,XSLT Stylesheets and Displaying XML documents with XSLT. Web Design: Concepts of effective web design, Web design issues including Browser, Bandwidth and Cache, Display resolution, Look and Feel of the Website, Page Layout and linking, User centric design, Sitemap, Planning and publishing website, Designing effective navigation	10

Recommended Leaning Resources	
Print Resources	**Text Books:** **1.** Robert W. Sebestra, "Programming the World Wide Web", 7th Edition /4th edition Addison Wesley Publication,2013. **References:** 1. Developing Web Applications, Ralph Moseley and M. T. Savaliya, Wiley-India 2. Web Technologies, Black Book, dreamtech Press 3. HTML 5, Black Book, dreamtech Press 4. Web Design, Joel Sklar, Cengage Learning 5. Developing Web Applications in PHP and AJAX, Harwani, McGrawHill 6. Internet and World Wide Web How to program, P.J. Deitel& H.M. Deitel, Pearson

Rani Channamma University Belagavi

Vidyasangama, NH-04, Bhutaramanahatti, Belagavi – 591 156

Bachelor of Science (B.Sc.) in Computer Science

Syllabus for V and VI Semester

(as per National Education Policy – 2020)

2023-24 onwards

RANI CHANNAMMA UNIVERSITY

Vidyasangama, NH-04, Bhutaramanahatti, Belagavi – 591 156

SYLLABUS

Bachelor of Science (B.Sc.) in Computer Science

(as per National Education Policy – 2020)

Submitted by

Dr. Parashuram Bannigidad
Chairperson BoS (UG) – Rani Channamma University, Belagavi

Members of Board of Studies

1. Dr. Vijayalaxmi M. Belagumpi — Member
   Assistant Professor,
   Dept. of Computer Science,
   GFGC Vijayapur
2. Dr. Bhagirathi Halalli — Member
   Assistant Professor,
   Dept. of Computer Science,
   GFGC Raibag
3. Dr. Basavaraj K Galagali — Member
   Assistant Professor,
   Coordinator of BCA
   BLDEA'S Commerce, BHS
   Arts and TGP Science
   College, Jamakhandi

Curriculum Structure for B.Sc. (Computer Science) V and VI Sem Program of RCUB as per NEP 2020 w.e.f. 2023-24

SEMESTER-V										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC5	21BSC5CSMJ1L	Programming in PYTHON	40	60	100	4	-	-	4	2
	21BSC5CSMJ1P	PYTHON Programming lab	25	25	50	-	-	4	2	3
DSC6	21BSC5CSMJ2L	Computer Networks	40	60	100	4	-	-	4	2
	21BSC5CSMJ2P	Computer Networks Lab	25	25	50	-	-	4	2	3
DSC5	Another Department Subject	Another Department Course Title	40	60	100	4	-	-	4	2
	Another Department Subject Practical	Another Department Course Title lab	25	25	50	-	-	4	2	3
DSC6	Another Department Subject	Another Department Course Title	40	60	100	4	-	-	4	2
	Another Department Subject Practical	Another Department Course Title lab	25	25	50	-	-	4	2	3
SEC4	21BSC6SE4CS3	Cyber Security	20	30	50	2	-	2	3	1h.30min
Total Marks					**650**	**Semester Credits**			**27**	

Curriculum Structure for B.Sc. (Computer Science) VI Sem Program of RCUB as per NEP 2020 w.e.f. 2023-24

SEMESTER-VI										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
DSC7	21BSC6CSMJ1L	Web Technologies	40	60	100	4	-	-	4	2
	21BSC6CSMJ1P	Web Technology lab	25	25	50	-	-	4	2	3
DSC8	21BSC6CSMJ2L	Statistical Computing & R Programming	40	60	100	4	-	-	4	2
	21BSC6CSMJ2P	R Programming Lab	25	25	50	-	-	4	2	3
DSC7	Another Department Subject	Another Department Course Title	40	60	100	4	-	-	4	2
	Another Department Subject Practical	Another Department Course Title lab	25	25	50	-	-	4	2	3
DSC8	Another Department Subject	Another Department Course Title	40	60	100	4	-	-	4	2
	Another Department Subject Practical	Another Department Course Title lab	25	25	50	-	-	4	2	3
Proj 1	21BSC6SE4CS1	Project	25	25	50				2	2
Total Marks					**650**	**Semester Credits**			**26**	
Students Exiting the programme after 3-years will be awarded UG degree in Disciplines A and B as double majors upon securing 136 credits and satisfying the minimum credit requirements under each category of courses prescribed										

Syllabus for BSc V Semester

Semester: V

Program Name	**B.Sc.**		Semester	**V**
Course Title	**Programming in Python (Theory)**			
Course Code:	**DSC5**		No. of Credits	**04**
Contact hours	**52 Hours**		Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**		Summative Assessment Marks	**60**

Course Pre-requisite(s): None

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1	Setup Python to develop simple applications
CO2	Understand the basic concepts in Python Programming
CO3	Learn how to write, debug and execute Python programs
CO4	Understand and demonstrate the use of advanced data types such as tuples, dictionaries and lists, Tuples and Sets
CO5	Design solutions for problems using object-oriented concepts in Python
CO6	Use and apply the different Python Libraries for GUI Interface, Data Analysis and Data Visualisation.
C07	Extend the knowledge of python programming to build successful career in software development.

Unit	Contents	52 Hrs
Unit I	**Introduction**: Introduction, Overview, Features and Applications of Python; Python Versions; Getting Started With Python; Python Command Line mode and Python IDEs; Indentation; Comments: **Python Basics:** Identifiers; Keywords; Variables; Data Types; Operators; Precedence and Association; Statements and Expressions; **Python Control Flow:** Types of Control Flow; Control Flow Statements- if, else, elif, while loop, break, continue statements, for loop Statement; range () and exit () functions.	12
Unit II	**Functions:** Introduction; Types of Functions; Built- in Functions- Console Input and Console Output, Type Conversions; Python Libraries; Importing Libraries with Examples. User Defined Functions-Parameters, arguments, function calls, return statement, Scope and Lifetime of Variables in Functions, Writing Python Scripts using functions. **Strings:** Creating and Storing Strings; Accessing Sting Characters; the str() function; Operations on Strings- Concatenation, Comparison, Slicing and Joining, Traversing; Format Specifiers; Escape Sequences; Raw and Unicode Strings; Python String Methods.	10

Unit III	**Lists:** Creating Lists; Built-in Operations on Lists; Built-in Functions on Lists; Implementation of Stacks and Queues using Lists; Nested Lists. **Dictionaries:** Creating Dictionaries; Operations on Dictionaries; Built-in Functions on Dictionaries; Dictionary Methods; Populating and Traversing Dictionaries. **Tuples and Sets:** Creating Tuples; Operations on Tuples; Built-in Functions on Tuples; Tuple Methods; Creating Sets; Operations on Sets; Built-in Functions on Sets; Set Methods.	10
Unit IV	**Exception Handling:** Types of Errors; Exceptions; Exception Handling using try, except and finally. **File Handling:** File Types; Operations on Files– Create, Open, Read, Append and Write, Close Files; File Names and Paths; Format Operator. **Object Oriented Programming:** Classes and Objects; Creating Classes and Objects; Constructor Method; Classes with Multiple Objects; Objects as Arguments; Objects as Return Values; Inheritance- Single and Multiple Inheritance, Multilevel and Multipath Inheritance; Encapsulation- Definition, Private Instance Variables; Polymorphism- Definition, Operator Overloading.	10
Unit V	**GU Interface:** The Tkinter Module-; Widgets-Button, Canvas, Check button, entry, frame, label, List Box, Menu Button, Radio Button, Message, Scale, Scrollbar, Text, Spin Box, Message Box, Label Frame, Paned Window ; Layout Management- pack, grid and place. **Python SQLite:** The SQLite3 module; SQLite Methods- connect, cursor, execute, close; Connect to Database; Create Table; Operations on Tables- Insert, Select, Update. Delete and Drop Records.	10

Pedagogy: Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

References	
1	**Introduction to Computing and Problem Solving Using Python**, E Balaguruswamy, McGrawHill, First Edition
2	**Think Python How to Think Like a Computer Scientist,** Allen Downey et al., 2nd Edition, 2015, Green Tea Press. Freely available online @ https://www.greenteapress.com/thinkpython/thinkCSpy.pdf
3	**Introduction to Python Programming**, Gowrishankar S et al.,2019, CRC Press
4	**Python Data Analytics**: Data Analysis and Science Using Pandas, matplotlib, and the Python Programming Language, Fabio Nelli, 2015, Apress®
5	**Advance Core Python Programming**, Meenu Kohli, 2021, BPB Publications
6	**Core PYTHON Applications Programming**, Wesley J. Chun, 3rd Edition, 2012, Prentice Hall
7	**Automate the Boring Stuff**, Al Sweigart, 2015, No Starch Press, Inc.
8	**Data Structures and Program Design Using Python**, D Malhotra et al., 2021, Mercury Learning and Information LLC
9	http://www.ibiblio.org/g2swap/byteofpython/read/
10	https://docs.python.org/3/tutorial/index.html

Course Title	**Python Programming Lab (Practical)**	Practical Credits	**02**
Course Code	**DSC5-Lab**	Contact Hours	**04** **Hours/week**
Formative Assessment	**25 Marks**	Summative Assessment	**25 Marks**

Practical Content

Part-A

1. Write a Python function to calculate the factorial of a number
2. Write a Python to generate Fibonacci Sequence
3. Write a Python program to get the sum of digits of a non-negative integer.
4. Write a Python program to create a module Calculation.py that contains functions to perform basic arithmetic operations.
5. Write a python program to reverse a string without using built-in functions.
6. Write a python program to generate random numbers.
7. Write a python program to display Multiplication Tables
8. Demonstrate importing the math module and perform any five math functions.
9. Write a Python class named Circle constructed by a radius and two methods which will compute the area and the perimeter of a circle.
10. Write a Python class named Rectangle constructed by a length and width and a method which will compute the area and perimeter of rectangle.

Part-B

1. Demonstrate usage of basic regular expression with match (), search (), findall (), sub () and split ().
2. Find the largest and smallest element in the list
3. Demonstrate use of Dictionaries to store and retrieve contact information.
4. Create SQLite Database and Write a Python program to demonstrate modification of an existing table data from SQLite Database
5. Write a python program that prompts the user for a number and handles a “ValueError”
6. Inherit a class Box that contains additional method volume. Override the perimeter method to compute perimeter of a Box.
7. Write a Python program to read a file line by line store it into an array.
8. Write a python program to create a class representing a basic bank account class with deposit and withdrawal methods.
9. Design Student Registration form using any 5 widgets using Tkinter Module.
10. Write a python program to create a GUI interface for temperature converter using Tkinter

Program Name	**B.Sc.**	Semester	**V**
Course Title	**Computer Networks (Theory)s**		
Course Code:	**DSC6**	No. of Credits	**04**
Contact hours	**52 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Pre-requisite(s):

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1	Define various data communication components in networking.
CO2	Describe networking with reference to different types of models and topologies.
CO3	Understand the need for Network and various layers of OSI and TCP/IP reference model.
CO4	Explain various Data Communications media.
CO5	Describe the physical layer functions and components
CO6	Identify the different types of network topologies and Switching methods.
CO7	Describe various Data link Layer Protocols.
CO8	Identify the different types of network devices and their functions within a network.
CO9	Analyze and Interpret various Data Kink Layer and Transport Layer protocols.
CO10	Explain different application layer protocols.

Unit	Contents	52 Hrs
UNIT I	**Introduction:** Computer Network: Definition, Goals, Structure; Broadcast and Point-To-Point Networks; Network Topology and their various Types; Types of Network, Network software, Design issues for the layers, Connection-oriented vs. Connectionless service, Applications of Computer network, Protocols and Standards, The OSI Reference Model, The TCP/IP Protocol suite, Comparison between OSI and TCP/IP Reference model.	12
UNIT II	**Physical Layer:** Functions of Physical Layer**,** Analog signals, Digital signals, Transmission Impairment, Data Rate Limits, and Performance. Data Transmission Media: Guided Transmission Media, Magnetic Media, Twisted Pairs, Coaxial Cable, Power Lines, Fiber Optics, Wireless Transmission, Electromagnetic Spectrum, Radio Transmission, Microwave Transmission, Infrared Transmission, Light Transmission, Digital Modulation and Multiplexing, Public Switched Telephone Networks. Switching: Circuit switching, Message switching & Packet switching	10
UNIT III	**Data Link Layer:** Functions of Data Link Layer, Data Link Control: Framing, Flow and Error Control, Error Detection and Correction, High-Level Data Link Control (HDLC) & point — to — Point protocol (PPP), Channel Allocation Problem, Multiple Access: Radom Access (ALOHA, CSMA, CSMA/CD, CSMA/CA), Controlled Access(Reservation, Polling, Token Passing), Channelization(FDMA, TDMA, CDMA),	10

UNIT IV	**Wired LAN:** Ethernet Standards and FDDI, Wireless LAN: IEEE 802.1 Ix and Bluetooth Standards. **Transport Layer:** Functions of Transport Layer, Elements of Transport Protocols: Addressing, Establishing and Releasing Connection, Flow Control & Buffering, Error Control, Multiplexing & De-multiplexing, Crash Recovery,	10
UNIT V	**User Datagram Protocol (UDP):** User Datagram, UDP Operations, Uses of UDP, RPC, Principles of Reliable Data Transfer: Building a Reliable Data Transfer Protocol, Pipelined Reliable Data Transfer Protocol, Go Back-N(GBN), Selective Repeat (SR). **Application layer :** Functions of Application layer, Application Layer Protocols: DNS, DHCP, WWW, HTTP, HTTPs, TELNET, FTP, SMTP, POP, IIMAP	10

Pedagogy: Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

References	
1	Andrew S Tanenbaum, David. J. Wetherall, –Computer Networks‖, Pearson Education, 5th Edition,
2	Behrouz A. Forouzan, "Data Communications and Networking", Tata McGraw-Hill, Fourth Edition
3	Kurose and Ross, Computer Networking- A Top-Down approach, Pearson, 5th edition
4	William Stallings, Data and Computer Communications, 7th Edition,PHI.
4	http://highered.mheducation.com/sites/0072967757/index.html
7	Larry L. Peterson, Bruce S. Davie, –Computer Networks: A Systems Approach‖, Morgan Kaufmann Publishers, Fifth Edition, 2011.
8	Brijendrasingh, Data Communication and Computer Networks,PHI.

Course Title	**Computer Networks Laboratory (Practical)**	Practical Credits	**02**
Course Code	**DSC6 Lab**	Contact Hours	**04 Hours/week**
Formative Assessment	**25 Marks**	Summative Assessment	**25 Marks**

Practical Content

Part A:

1. Prepare hardware and software specification for basic computer system and Networking.
2. Study of different types of Network cables and practically implement the cross-wired cable and straight through cable using clamping tool.
3. Identifying the networking devices on a network.
4. Configure the IP address of the computer.
5. Create a basic network and share file and folders.
6. Study of basic network command and Network configuration commands.
7. Installation process of any open source network simulation software.

Part B:

1. Implement connecting two nodes using network simulator.
2. Implement connecting three nodes considering one node as a central node using network simulator. Implement a network to connect three nodes considering one node as a central node using network simulator
3. Implement bus topology using network simulator.
4. Implement star topology using network simulator.
5. Implement ring topology using network simulator.
6. Demonstrate the use of wireless LAN using network simulator.
7. Implement FTP using TCP bulk transfer using network simulator.

Links for open source simulation software:

- NS3 software: https://www.nsnam.org/releases/ns-3-30/download/
- Packet Tracer Software: https://www.netacad.com/courses/packet-tracer
- GNS3 software: https://www.gns3.com/

Syllabus for B. Sc VI Semester

Program Name	**B.Sc.**	Semester	**VI**
Course Title	**Web Technologies (Theory)**		
Course Code:	**DSC8**	No. of Credits	**04**
Contact hours	**52 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Pre-requisite(s): Basic Knowledge About Programming and Internet and Web Browsing

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

- Understand basics of Internet technology
- Use of HTML in designing static web pages.
- Use of CSS in designing attractive web pages
- Use of Java Script in designing dynamic web pages.
- Students are able design a own website at the end of the course.

Unit	Contents	52 Hrs
UNIT I	**Fundamentals of Web**: Internet, WWW, Web Browsers, Web Protocols and Web Servers, URLs, MIME, HTTP, Security, the Web Programmers Toolbox. **HTML5 and XHTML:** Origins and evolution of HTML5 and XHTML, Basic syntax, Standard XHTML document structure, Basic Text Markup, HTML5 Page Layout and Navigation, Hypertext Links, Lists, Tables, Forms, Frames in HTML5 and XHTML, Syntactic differences between HTML5 and XHTML, Images, audio and video.	12
UNIT II	**Introduction to XML:** Introduction; Syntax; Document structure; Document Type Definitions (DTD); XSLT style sheets; XML Processors; Web services. **Cascading Style Sheets:** Introduction, Levels of style sheets, Style specification formats, Selector forms, Property value forms, Font properties, List properties, Color, Alignment of text, The Box model, Background images, The and tags.	10
UNIT III	**Introduction to Java Script:** Overview of JavaScript; Object orientation and JavaScript; General syntactic characteristics; Primitives, Operations, and expressions; Screen output and keyboard input; Control statements; Object creation and Modification; Arrays; Functions; Constructor; Pattern matching using expressions; Errors in scripts; Examples.	10
UNIT IV	**Java Script and HTML Documents:** The JavaScript execution environment; The Document Object Model; Element access in JavaScript; Events and event handling; Handling events from the Body elements, Button elements, Text box and Password elements; The DOM 2 event model; The navigator object; DOM tree traversal and modification. Dynamic Documents with JavaScript	10
UNIT V	**Dynamic Documents with JavaScript:** Introduction to dynamic documents; Positioning elements; Moving elements; Element visibility; Changing colors and fonts; Dynamic content; Stacking elements; Locating the mouse cursor; Reacting to a mouse click; Slow movement of elements; Dragging and dropping elements.	10

Pedagogy: Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

References	
1.	Robert W Sebesta, "Programming the World Wide Web", 4th Edition, Pearson Education, 2008.
2	M.Deitel, P.J.Deitel, A.B.Goldberg, "Internet & World Wide Web How to program", 3rd Edition, Pearson Education / PHI, 2004.
3	Chris Bates, "Web Programming Building Internet Applications", 3rd Edition, Wiley India, 2006.
4	Xue Bai et al, "The Web Warrior Guide to Web Programming", Thomson, 2003
5	Sklar, "The Web Warrior Guide to Web Design Technologies", 1st Edition, Cengage Learning India.
6	Internet and World Wide Web – How to program, Dietel and Nieto, Pearson.

Program Name	**B.Sc.**	Semester	**VI**
Course Title	**Web Technology Lab**		
Course Code:	**DSC 8- Lab**	No. of Credits	**02**
Contact hours	**04 Hours per week**	Duration of SEA/Exam	**3 hours**
Formative Assessment Marks	**25**	Summative Assessment Marks	**25**

Part A

1. Design web pages for your college containing college name and Logo, departments list using href, list tags.
2. Create a class timetable using table tag.
3. Write a HTML code to design Student registrations form for your college Admission
4. Design Web Pages with includes Multi-Media data (Image, Audio, Video, GIFs etc)
5. Create a web page using frame.
6. Write code in HTML to develop a webpage having two frames that divide the webpage intotwo equal rows and then divide the row into equal columns fill each frame with a different background color.
7. Write CSS code to Use Inline CSS to format your ID Card.
8. Using HTML, CSS create display a text called –Hello India !‖ on top of an image of India- Map using an overlay.

Part B

1. JavaScript Program to perform Basic Arithmetic operations.
2. JavaScript Program to implement all string operations.
3. JavaScript Program to Check Prime Number.
4. JavaScript Program to implement Java script Object Concept
5. JavaScript Program to Create Array and inserting Data into Array
6. JavaScript Program to Validate an Email Address.
7. Create a form for Student information. Write JavaScript code to find Total, Average, Result and Grade.
8. Write a program for implementing XML document for Employee Details

Program Name	**B.Sc.**	Semester	**VI**
Course Title	**Statistical Computing & R Programming (Theory)**		
Course Code:	**DSC-8**	No. of Credits	**04**
Contact hours	**52 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Pre-requisite(s): Basic Knowledge About Programming and Web browsers	
Course Outcomes (COs): After the successful completion of the course, the student will be able to	
CO1	Explore fundamentals of statistical analysis in R environment.
CO2	Describe key terminologies, concepts and techniques employed in Statistical Analysis.
CO3	Define Calculate, Implement Probability and Probability Distributions to solve a wide variety of problems.
CO4	Conduct and interpret a variety of Hypothesis Tests to aid Decision Making.
CO5	Understand, Analyze, and Interpret Correlation Probability and Regression to analyse the underlying relationships between different variables.

Contents	**52 Hrs**
UNIT-I: Introduction to R: Overview and History of R, R Console Input and Evaluation, R Objects and Attributes, Data Types – Vectors, Lists, Matrices, Arrays, Factors, String and Data Frame, Variables and Constants, Variable scope, Getting User Input and Output, R-Operators.	12
UNIT-II: R-Controls Structures: Decision Making in R-if, if-else, if-else ladder, switch statement. Loops in R-repeat, while, for; Loop Control Statements-Break, next; R-functions-Definition, function calls, lazy evaluation of a function, return, multiple returns, recursive functions	10
UNIT-III: Classes and Objects: Class Definition, Creating objects from constructors, Methods and generic functions, Creating Own Methods for S3-class, S4-Class and Reference Class, Error handling in R, Packages in R-Programming.	10
UNIT-IV: Exploratory Data Analysis: R-statistics-Mean, median, mode, variance, standard deviation, Descriptive analysis, Linear Regression, Normal Distribution, Binomial Distribution, Poisson distribution,	10
UNIT-V: Data Analysis and Visualization with R: T-Tests , ANOVA Test, Covariance and Correlation, Hypothesis Testing, Pie-Charts, Bar charts, Boxplots, Histograms, Line Graphs, Scatter Plots	10

Preferred Text Books	
1	Tilman M. Davies, “The book of R: A first course in programming and statistics”, San Francisco, 2016.
2	Vishwas R. Pawgi, “Statistical computing using R software”, Nirali prakashan publisher, e1-edition, 2022.
3	Daniel Bell-R-Programming A step by step guide for absolute guide
4	https://www.youtube.com/watch?v=KlsYCECWEWE https://www.geeksforgeeks.org/r-tutorial/ https://www.tutorialspoint.com/r/index.htm

References	
1	Introductory Statistics with R (Statistics and Computing) Dalgaard, Peter (Author) English (Publication Language) 267 Pages - 02/10/2004 (Publication Date) - Springer (Publisher) Read more at: https://examupdates.in/statistics-with-r-programming-notes/
2	Statistics: An Introduction using R Crawley, Michael J. (Author) English (Publication Language) 342 Pages - 03/11/2005 (Publication Date) - Wiley–Blackwell (Publisher) Read more at: https://examupdates.in/statistics-with-r-programming-notes/
3	A Handbook of Statistical Analyses using R RC Press Hothorn, Torsten (Author) English (Publication Language) 304 Pages - 06/25/2014 (Publication Date) - Chapman and Hall/CRC (Publisher) Read more at: https://examupdates.in/statistics-with-r-programming-notes/
4	A First Course in Statistical Programming with R Braun, W. John (Author) English (Publication Language) 230 Pages - 07/18/2016 (Publication Date) - Cambridge University Press (Publisher) Read more at: https://examupdates.in/statistics-with-r-programming-notes
5	Statistical Analysis with R For Dummies Schmuller, Joseph (Author) English (Publication Language) 464 Pages - 05/16/2017 (Publication Date) - For Dummies (Publisher) Read more at: https://examupdates.in/statistics-with-r-programming-notes

Program Name	**B.Sc.**	Semester	**VI**
Course Title	**R Programming Lab**		
Course Code:	**DSC 8-Lab**	No. of Credits	**02**
Contact hours	**04 Hours per week**	Duration of SEA/Exam	**3 hours**
Formative Assessment Marks	**25**	Summative Assessment Marks	**25**

PART A

1. Write a R program to find Area and Circumference of Circle
2. Write an R program Illustrate with if-else statement and how does it operate on vectors of variable length.
3. Write an R program Illustrate with for loop and stop on condition, to print the error message.
4. Write an R Program to find Factorial of given number.
5. Write an R Program to append a value to given empty vector .
6. Implementation of Vectors data objects operations.
7. Implementation of matrix, arrays and factors objects operations.
8. Write an R Program to Find Mean, Mode & Median.

PART B

1. Write an R Program to implement T-Test.
2. Write an R Program Compute mean values for vector aggregates defined by factors tapply and sapply.
3. Write an R Program to find Unique element of a given string and unique value from vector.
4. Write a R program to demonstrate Binomial Distribution.
5. Write a R program to demonstrate Normal Distribution.
6. Write an R Program Illustrate Reading & Writing Files.
7. Write a R program for simple bar plot for 5 subject marks
8. Implementation of Data visualization using ggplot.

Program Name	**B.Sc.**	Semester	**VI**
Course Title	**Project Work**		
Course Code:	**Proj 1**	No. of Credits	**02**
Contact hours	**02 Hour per week**	Duration of SEA/Exam	**3 hours**

Project Work Guidelines for B. Sc Graduate Programme

1. Students are expected to work out a real life project in some industry/research and development laboratories/educational institutions/software companies, it is suggested that the project is to be chosen which should have some direct relevance in day-to-day activities of the candidates in his/her institution. However, it is not mandatory for a student to work on a real life project. The student can formulate a project problem with the help of Guide.
2. Project mentor/supervisor shall avail work allotment during 6th semester is 2 hour per week and Maximum 20 hours in a semester.
3. The student should submit the final project report to the college through the mentor for completion of the project work.

Formative Assessment for Practical	
Assessment Occasion/ type	**Marks**
Practical Test	20
Journal	05
Total	**25 Marks**
Formative Assessment as per NEP guidelines are compulsory	

Evaluation Scheme for Lab Examination

Assessment Criteria		Marks
Program – 1 from Part A	Writing the Program	03
	Execution and Formatting	07
Program -2 from Part B	Writing the Program	03
	Execution and Formatting	07
Viva Voice		05

	Formative Assessment for Theory	
Components	**Assessment Occasion/ type**	**Marks**
C1	Test	10
	Seminar/Activity	10
C2	Test	10
	Assignment/Projects/Quiz	10
	Total	**40 Marks**

Summative Assessment for Theory

Semester End Exam Question Paper Pattern

Duration of the examination: 2hour **Max. Marks:60**

Section A

Answer any TEN from the following, each carries 2 marks: **[10X2=20]**

1. ----------
2. ----------
3. ----------
4. ----------
5. ----------
6. ----------
7. ----------
8. ----------
9. ----------
10. ----------
11. ----------
12. ----------

Section B

Answer any FOUR from the following questions each carries 5 marks.

[4X5=20]

13. ----------
14. ----------
15. ----------
16. ----------
17. ----------

Section C

Answer any two from the following questions each carries 10 marks.

(The Question may have consist two sub-questions)

[2X10=20]

18. ----------
19. ----------
20. ----------

Rani Channamma University Belagavi

Vidyasangama, NH-04, Bhutaramanahatti, Belagavi – 591 156

Bachelor of Science (B.Sc.) in Computer Science

Syllabus for III and IV Semester

(as per National Education Policy – 2020)

2022-23 onwards

RANI CHANNAMMA UNIVERSITY

Vidyasangama, NH-04, Bhutaramanahatti, Belagavi – 591 156

SYLLABUS

Bachelor of Science (B.Sc.) in Computer Science

(as per National Education Policy – 2020)

Submitted by

Dr. Parashuram Bannigidad
Chairperson BoS (UG) – Rani Channamma University, Belagavi

Members of Board of Studies

1. Dr. Vijayalaxmi M Belagumpi — Member
   Assistant Professor,
   Dept. of Computer Science,
   GFGC Vijayapur
2. Dr. Bhagirathi Halalli — Member
   Assistant Professor,
   Dept. of Computer Science,
   GFGC Raibag

Curriculum Structure for B.Sc. (Computer Science) III SEM Program of RCUB as per NEP 2020 w.e.f. 2022-23

SEMESTER-III										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L5	21BSC3L5LK3	Kannada	40	60	100	4	-	-	3	2
	21BSC3L5LFK3	Functional Kannada								
L6	21BSC3L6EN3	English	40	60	100	4	-	-	3	2
	21BSC3L6HI3	Hindi								
	21BSC3L6SN3	Sanskrit								
	21BSC3L6TE3	Telugu								
	21BSC3L6UR3	Urdu								
DSC3	21BSC3C3CS1L	Object Oriented Programming in JAVA	40	60	100	4	-	-	4	2
	21BSC3C3CS1P	JAVA Lab	25	25	50	-	-	4	2	3
DSC3	Another Department Code	Another Department Course Title with lab	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
AECC2	21BSC4AE1CI2	Constitution of India	20	30	50	1	-	2	2	1hr30min
VBC5	21BSC3V5PE3	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC6	21BSC3V6NC2	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC3	21BSC3O3CS5	Python Programming Concepts	40	60	100	3	-	-	3	2
			Total Marks		**700**	**Semester Credits**			**25**	

Curriculum Structure for B.Sc. (Computer Science) IV SEM Program of RCUB as per NEP 2020 w.e.f. 2022-23

SEMESTER-IV										
Category	**Course code**	**Title of the Paper**	**Marks**			**Teaching hours/week**			**Credit**	**Duration of exams (Hrs)**
			IA	**SEE**	**Total**	**L**	**T**	**P**		
L7	21BSC4L7LK4	Kannada	40	60	100	4	-	-	3	2
	21BSC4L7LFK4	Functional Kannada								
L8	21BSC4L8EN4	English	40	60	100	4	-	-	3	2
	21BSC4L8HI4	Hindi								
	21BSC4L8SN4	Sanskrit								
	21BSC4L8TE4	Telugu								
	21BSC4L8UR4	Urdu								
DSC4	21BSC4C2CS2L	Database Management Systems	40	60	100	4	-	-	4	2
	21BSC4C2CS2P	DBMS Lab	25	25	50	-	-	4	2	3
DSC4	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
SEC2	21BSC3SE2ES2	Artificial Intelligence	20	30	50	3	-	-	2	1hr30min
VBC7	21BSC4V5PE4	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC8	21BSC4V6NC3	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC4	21BSC4O3CS7	Financial Education and Investment Awareness	20	30	50	3	-	-	2	1hr30min
				Total Marks	**650**			**Semester Credits**	**24**	
Exit option with Diploma in Science (with the completion of courses equal to a minimum of 96 credits) OR continue studies with Major and Minor					**2750**				**99**	

Syllabus for BSc III and IV Semesters

Subject: Computer Science

Sem	Discipline Specific Core Courses(DSC)	Hour / Week	
		Theory	Lab
III	**DSC-3:** Object Oriented Programming Concepts and Programming in JAVA	**4**	-
	DSC-3 Lab: JAVA Lab	-	**4**
	OEC: Python Programming Concepts	**3**	**-**
IV	**DSC-4:** Database Management Systems	**4**	-
	DSC-4 Lab: DBMS Lab	-	**4**

Syllabus for BSc III Semester

Course Title: **Object Oriented Programming Concepts and Programming in Java**	Course code: 21BSC3C3CS1L
Total Contact Hours: 52	Course Credits: 04
Formative Assessment or IA Marks: 40	Duration of SEE/Exam: 02 Hours
Summative Assessment Marks: 60	

Course Outcomes (COs):

At the end of the course, students will be able to:

- Explain the object-oriented concepts and JAVA.
- Write JAVA programs using OOP concepts like Abstraction, Encapsulation, Inheritance and Polymorphism.
- Implement Classes and multithreading using JAVA.
- Demonstrate the basic principles of creating Java applications with GUI.

DSC3: Object Oriented Programming Concepts and Programming in Java

Unit	Description	Hours
1	**Introduction to Java:** Basics of Java programming, Data types, Variables, Operators, Control structures including selection, Looping, Java methods, Overloading, Math class, Arrays in java.	09
2	**Objects and Classes:** Basics of objects and classes in java, Constructors, Finalizer, Visibility modifiers, Methods and objects, Inbuilt classes like String, Character, String Buffer, File, this reference.	10
3	**Inheritance and Polymorphism:** Inheritance in java, Super and sub class, Overriding, Object class, Polymorphism, Dynamic binding, Generic programming, Casting objects, Instance of operator, Abstract class, Interface in java, Package in java, UTIL package.	09
4	**Event and GUI programming:** Event handling in java, Event types, Mouse and key events, GUI Basics, Panels, Frames, Layout Managers: Flow Layout, Border Layout, Grid Layout, GUI components like Buttons, Check Boxes, Radio Buttons, Labels, Text Fields, Text Areas, Combo Boxes, Lists, Scroll Bars, Sliders, Windows, Menus, Dialog Box, Applet and its life cycle, Introduction to swing, Exceptional handling mechanism.	12
5	**I/O programming:** Text and Binary I/O, Binary I/O classes, Object I/O, Random Access Files. Multithreading in java: Thread life cycle and methods, Runnable interface, Thread synchronization, Exception handling with try catch-finally, Collections in java, Introduction to JavaBeans and Network Programming	12

References:

1. Programming with Java, By E Balagurusamy – A Primer, 4th Edition, McGraw Hill Publication.
2. Core Java Volume I – Fundamentals, By Cay S. Horstmann, Prentice Hall.
3. Object Oriented Programming with Java: Somashekara M.T., Guru, D.S., Manjunatha K.S, 1st Edition, PHI Learning 2017.
4. Java 2 - The Complete Reference, Herbert Schildt, 5th Edition, McGraw Hill Publication, 2017.
5. Java - The Complete Reference, Herbert Schildt, 7th Edition, McGraw Hill Publication, 2017.

Year	II	**Course Code:** 21BSC3C3CS1P	**Credits**	02
Sem.	III	**Course Title: JAVA LAB**	**Hours**	40
Course Pre-requisites, ifany:		Knowledge of Programming		
Formative Assessment Marks: 25		Summative Assessment Marks: 25	Duration of ESA: 03 hrs.	

Practice Labs

1. Program to print the following triangle of numbers

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

2. Program to simple java application, to print the message,"Welcome to java"
3. Program to display the month of a year. Months of the yearshould be held in an array.
4. Program to find the area of rectangle.
5. program to demonstrate a division by zero exception
6. Program to create a user defined exception say Pay Out ofBounds.

Part A: Programming Lab – Java Fundamentals – OOPS inJAVA

1. Program to assign two integer values to X and Y. Using the "if"statement the output of the program should display a message whether X is greater than Y.
2. Program to list the factorial of the numbers 1 to 10. Tocalculate the factorial value, use while loop. (Hint: Fact of 4 = 4*3*2*1)
3. Program to find the area and circumference of the circle by accepting the radius from the user.
4. Program to add two integers and two float numbers. When no arguments are supplied, give a default value to calculate the sum. Use function overloading.
   Program to perform mathematical operations. Create a class called AddSub with methods to add and subtract. Create another class called MulDiv that extends from AddSub class to use the member data of the super class. MulDiv should have methods to multiply and divide A main function should access the methods and perform the mathematical operations.
6. Program with class variable that is available for all instancesof a class. Use static variable declaration. Observe the changes that occur in the object"s member variable values.
7. Program to create a student class with following attributes; Enrollment No: Name, Mark of sub1, Mark of sub2, mark ofsub3, Total Marks. Total of the three marks must becalculated only when the student passes in all three subjects.The passing mark for each subject is 50. If a candidate fails inany one of the subjects his total mark must be declared aszero. Using this condition write a constructor for this class.Write separate functions for accepting and displaying studentdetails. In the main

method create an array of three studentobjects and display the details.

8. Write a program to demonstrate multiple inheritance and useof Implementing Interfaces
9. Illustrate creation of thread by

   a) Extending Thread class. b) Implementing RunnableInterfaces
10. Write a program to demonstrate multiple inheritance and use of implementing Interfaces.

PART B: Exception Handling & GUI Programming

1. Program to catch Negative Array Size Exception. This exception is caused when the array size is initialized to negative values.
2. Program to demonstrate exception handling with try, catch and finally.
3. Program which create and displays a message on the window
4. Program to draw several shapes in the created window
5. Programto create a 4×4 grid and fills it in with 15 buttons, each labeled with its index.
6. Program which creates a frame with two buttons father and mother. When we click the father button the name of the father, his age and designation must appear. When we click mother button similar details of mother also appear.
7. Create a frame which displays your personal details with respect to a button click
8. Program to create a window with Text Fields and Buttons. The"ADD" button adds the two integers and display the result. The "CLEAR" button shall clear all the text fields.
9. Program to create a window, when we press M or m, the window displays “Good morning”, A or a, the window display’s Good Afternoon”, E or e, the window displays “Good Evening”, N or n, the window displays “Hello”.
10. Demonstrate the various mouse handling events using suitable example.

Evaluation Scheme for Java Lab Examination

Assessment Criteria		Marks
Program – 1 from Part A	Writing the Program	03
	Execution and Formatting	07
Program -2 from Part B	Writing the Program	03
	Execution and Formatting	07
Viva Voice		05

Open Elective for III Semester

Course Code: 21BSC3O3CS5 Course Title: **Python Programming Concepts**	Course Credits: 3 (3L+0T+0P)
Semester: III	Duration of SEE: 02 Hour
Total Contact Hours: 42	Summative Assessment Marks : 60 Marks Formative AssessmentMarks: 40 Marks

Course Outcomes (COs):

- Explain the fundamentals of Computers.
- Explain the basic concepts of Python Programming.
- Demonstrate proficiency in the handling of loops and the creation of functions.
- Identify the methods to create and store strings.

Unit I Fundamentals of Computers 10 Hrs

Introduction to Computers - Computer Definition, Characteristics of Computers, Evolution and History of Computers, Types of Computers, Basic Organization of a Digital Computer; Number Systems – different types, conversion from one number system to another; Computer Codes – BCD, Gray Code, ASCII and Unicode; Boolean Algebra – Boolean Operators with Truth Tables; Types of Software – System Software and Utility Software; Computer Languages - Machine Level, Assembly Level & High Level Languages, Translator Programs – Assembler, Interpreter and Compiler; Planning a Computer Program - Algorithm, Flowchart and Pseudo code with Examples.

Unit II Python Basics 10 Hrs

Introduction to Features and Applications of Python; Python Versions; Installation of Python; Python Command Line mode and Python IDEs; Simple Python Program. Identifiers; Keywords; Statements and Expressions; Variables; Operators; Precedence and Association; Data Types; Indentation; Comments; Built-in Functions- Console Input and Console Output, Type Conversions; Python Libraries; Importing Libraries with Examples; Illustrative programs.

Unit III 08 Hrs

Python Control Flow: Types of Control Flow; Control Flow Statements- if, else, elif, while loop, break, continue statements, for loop Statement; range () and exit () functions; Illustrativeprograms.

Unit IV 08 Hrs

Python Functions: Types of Functions; Function Definition- Syntax, Function Calling, Passing Parameters/arguments, the return statement; Default Parameters; Command line Arguments; Key Word Arguments; Illustrative programs.

Unit V **06 Hrs**

Strings: Creating and Storing Strings; Accessing Sting Characters; the str() function; Operations on Strings- Concatenation, Comparison, Slicing and Joining, Traversing; Format Specifiers; Escape Sequences; Raw and Unicode Strings; Python String Methods; Illustrative programs.

References

1. Computer Fundamentals (BPB), P. K. Sinha & Priti Sinha
2. Think Python How to Think Like a Computer Scientist, Allen Downey et al., 2nd Edition, Green Tea Press. Freely available online 2015. @https://www.greenteapress.com/thinkpython/thinkCSpy.pdf
3. Introduction to Python Programming, Gowrishankar S et al., CRC Press, 2019.
4. http://www.ibiblio.org/g2swap/byteofpython/read/
5. http://scipy-lectures.org/intro/language/python_language.html
6. https://docs.python.org/3/tutorial/index.html

Syllabus for BSc IV Semester

Course Title: **Database Management System**	Course code: 21BSC4C2CS2L
Total Contact Hours: 52	Course Credits: 04
Formative Assessment or IA Marks: 40	Duration of SEE/Exam: 02 Hours
Summative Assessment Marks: 60	

Course Outcomes (COs):

At the end of the course, students will be able to:

- Explain the various database concepts and the need for database systems.
- Identify and define database objects, enforce integrity constraints on a database using DBMS.
- Demonstrate a Data model and Schemas in RDBMS.
- Identify entities and relationships and draw ER diagram for a given real-world problem.
- Convert an ER diagram to a database schema and deduce it to the desired normal form.
- Formulate queries in Relational Algebra, Structured Query Language (SQL) for database manipulation.
- Explain the transaction processing and concurrency control techniques.

DSC7: Database Management System (DBMS)

Unit	Description	Hours
1	**Database Architecture:** Introduction to Database system applications. Characteristics and Purpose of database approach. People associated with Database system. Data models. Database schema. Database architecture. Data independence. Database languages, interfaces, and classification of DBMS.	10
2	**E-R Model:** Entity-Relationship modeling: E – R Model Concepts: Entity, Entity types, Entity sets, Attributes, Types of attributes, key attribute, and domain of an attribute. Relationships between the entities. Relationship types, roles and structural constraints, degree and cardinality ratio of a relationship. Weak entity types, E -R diagram.	10
3	**Relational Data Model:** Relational model concepts. Characteristics of relations. Relational model constraints: Domain constrains, key constraints, primary & foreign key constraints, integrity constraints and null values. Relational Algebra: Basic Relational Algebra operations. Set theoretical	12

	operations on relations. JOIN operations Aggregate Functions and Grouping. Nested Sub Queries-Views. Introduction to PL/SQL & programming of above operations in PL/SQL	
4	**Data Normalization:** Anomalies in relational database design. Decomposition. Functional dependencies. Normalization. First normal form, Second normal form, Third normal form. Boyce-Codd normal form.	09
5	**Query Processing Transaction Management:** Introduction Transaction Processing. Single user & multiuser systems. Transactions: read & write operations. Need of concurrency control: The lost update problem, Dirty read problem. Types of failures. Transaction states. Desirable properties (ACID properties) of Transactions. Concurrency Control Techniques: Locks and Time stamp Ordering. Deadlock & Starvation.	11

References:

1. Fundamentals of Database Systems, Ramez Elamassri, Shankant B. Navathe, 7th Edition, Pearson, 2015
2. An Introduction to Database Systems, Bipin Desai, Galgotia Publications, 2010.
3. Introduction to Database System, C J Date, Pearson, 1999.
4. Database Systems Concepts, Abraham Silberschatz, Henry Korth, S.Sudarshan, 6th Edition, McGraw Hill, 2010.
5. Database Management Systems, Raghu Rama Krishnan and Johannes Gehrke, 3rd Edition, McGraw Hill, 2002

Year	II	**Course Code:** 21BSC4C2CS2P	**Credits**	02
Sem.	III	**Course Title: DBMS LAB**	**Hours**	40
Course Pre-requisites, ifany:		Knowledge of Programming		
Formative Assessment Marks: 25		Summative Assessment Marks: 25	Duration of ESA: 03 hrs.	
		Practical: CO: Student would be able to create tables, execute queries and PL/SQL programs. 1. Execute a single line query and group functions. 2. Execute DDL Commands. 3. Execute DML Commands 4. Execute DCL and TCL Commands. 5. Implement the Nested Queries. 6. Implement Join operations in SQL 7. Create views for a particular table 8. Implement Locks for a particular table 9. Write PL/SQL procedure for an application using exception handling. 10. Write PL/SQL procedure for an application using cursors. 11. Write a PL/SQL procedure for an application using functions 12. Write a PL/SQL procedure for an application using package		

Evaluation Scheme for DBMS Lab Examination

Assessment Criteria		Marks
Program – 1 from Part A	Writing the Program	03
	Execution and Formatting	07
Program -2 from Part B	Writing the Program	03
	Execution and Formatting	07
Viva Voice		05

Semester End Exam Question Paper Pattern

Duration of the examination: 2hour **Max. Marks:60**

Section A

Answer any TEN from the following, each carries 2 marks: [10X2=20]

1. ----------
2. ----------
3. ----------
4. ----------
5. ----------
6. ----------
7. ----------
8. ----------
9. ----------
10. ----------
11. ----------
12. ----------

Section B

Answer any FOUR from the following questions each carries 5 marks.

[4X5=20]

13. ----------
14. ----------
15. ----------
16. ----------
17. ----------

Section C

Answer Any two from the following questions each carries 10 marks.

(The Question may consist two sub-questions)

[2X10=20]

18. ----------
19. ----------
20. ----------

Theory Paper IA 40 Marks distribution

	C1	C2	Total Marks
First IA	Test-1: 15marks	Assignment/Activity-1: 05Marks	**20**
Second IA	Test-2: 15marks	Assignment/Activity-2 : 05Marks	**20**
	30	**10**	**40**

Theory Paper IA 20 Marks distribution

	C1	C2	Total Marks
First IA	Test-1: 10 marks	---	**10**
Second IA	Test-2: 5marks	Assignment/Activity-2 : 05	**10**
	15	**05**	**20**

RANI CHANNAMMA UNIVERSITY
(**RCU**)

SCHOOL OF BASIC SCIENCES

Department of Chemistry

for

M.Sc. degree in CHEMISTRY

REGULATIONS
&
SCHEME OF EXAMINATION

As per
CHOICE BASED CREDIT SYSTEM (CBCS)

With effect from Academic Year 2020-21
[Approved in the BOS meeting held on 15-11-2019]

Submitted by
Prof. J. Manjanna
Chairman, Dept of Chemistry &
Chairman, BOS in Chemistry, RCU, Belagavi.

RANI CHANNAMMA UNIVERSITY
DEPARTMENT OF CHEMISTRY
[SCHOOL OF BASIC SCIENCES]

Regulations & Scheme of Examination
for
M.Sc. Degree in Chemistry
as per under CBCS
(Effective from the Academic Year 2020-21)

1.0 Title of the Course

The course shall be called **M.Sc. in CHEMISTRY**.

1.1 Duration of the course: The M.Sc. degree course is of two years duration, spread over four semesters each of four months duration.

1.2 Eligibility for Admission: The Bachelor's degree in Science or equivalent degree with Chemistry as one of the subject. The candidate should have obtained at least 40% of marks in optional subjects as well as in aggregate. Relaxation in respect of SC/ST/Cat -I etc. will be followed as per prevailing rules of the university.

1.3. Admission & Seat Matrix: The rules for admission & Seat matrix are as per university notification from time to time.

1.4. Admission to other semesters: students are allowed to take admissions to successive semesters under carry over benefit (COB) facility.

2.0 Attendance: Every student must have at least 75% attendance in each paper (Theory & Practical) in each semester. Shortage of attendance will be dealt with as per the university rules from time to time.

3.0 Medium of instruction: The medium of instruction shall be English.

4.0 Course Structure:

There shall be *Three* category of Papers namely, Hard Core (Theory), Soft core (Practicals) and Open Elective (Theory) Papers for M.Sc. in Chemistry.

In the 1st semester, there shall be 4 hardcore theory papers of 4 credits in each paper and 1 hardcore paper of 2 credits and 3 practicals each of 2 credits.

In 2nd semester, there shall be 3 hardcore theory papers of 4 credits in each paper and 1 hardcore paper of 2 credits and 3 practicals each of 2 credits & one Open Elective paper with 4 credits.

In 3rd semester, there shall be 3 hardcore theory papers of 4 credits in each paper and 1 hardcore paper of 2 credits and 3 practicals each of 2 credits & one Open Elective paper with 4 credits.

In the 4th semester, there shall be 3 hardcore theory papers of 4 credits in each paper and 1 hardcore paper of 2 credits and 3 practicals each of 2 credits & one **Project** with 4 credits.

Syllabus for Each paper of 4 Credits shall have four Units of 16 h each & Each paper of 2 Credits shall have two Units of 16 h each.

Project work of 4th semester shall be allocated during the 3rd semester itself so that it can be planned well in advance for effective execution under the supervision of Internal and/or External Guide. The Project team shall not exceed *Three* students for a given Topic of study.

5.0 Scheme of Evaluation:

5.1 There shall be an examination at the end of each Semester.

5.2 The duration of Examination of Theory paper carrying 80 marks is 3 h & duration of Examination of Theory paper carrying 40 marks is 2 h.

Duration of Exam for Practicals (Lab) is 4 h and number of students per batch should not exceed 15.

The IA marks of Theory papers are based on average of two IA Tests per Paper per semester as well as Attendance, Seminar and Assignments (if any). The weightage of marks for these components may be distributed accordingly.

The IA marks of Practical paper are based on one IA Tests per Paper per semester.

At least one seminar per Year should be assigned for each student as per the convenience.

5.3 The Theory and Practical Examinations of all the semesters shall be evaluated through single / double valuation by an Internal / External examiner as per the guidelines of RCU.

5.4 Project: The project report shall be evaluated for 80 marks by one Internal and one External examiner based on the *Dissertation* & Oral presentation.

IA marks of 20 allocated for Project work must be earned from ***Industrial visit/ Technical / Study tour*** of minimum 2 days to be undertaken during the 2nd Yr M.Sc. course. Such a visit/ tour (within India) must be endorsed by the Chairman, Dept. of Chemistry (Principal of Affiliated College). The financial support (partial/full) to the enrolled students and Faculty members accompanying the team may be reimbursed by the University/ Affiliated College, as per the norms.

In case the student cannot undertake ***Industrial visit/ Technical / Study tour*** due to health issues or unavoidable circumstances, IA marks shall be based on the presentation of the work in a seminar.

6.0 Pattern of question paper: 80 (Exam) + 20 (IA)
Question paper contains five questions. Question 1 is compulsory. It shall contain 10 objective type questions carrying 2 marks each, drawn from all the four units. Questions 2, 3, 4 and 5 should be drawn from each Unit for 16 marks each (sub questions a, b and c or d carry 5, 5 and 6 marks).

7.0 Maximum period for the completion of M.Sc. Degree Progrmme: There shall be fully carry over system from First to Fourth semesters. Maximum number of years for a student to complete the degree is as specified by the University from time to time.

8.0 The General Regulations Governing Post Graduate Programmes under CBCS and Regulation Governing Post Graduate Programmes in the School of Basic Sciences under CBCS of Rani Channamma University, Belagavi are applicable to this course for all the matters not covered under this.

Course structure of M.Sc. degree in CHEMISTRY @ RCU

Subjects	Paper	Teaching h/ week	Duration of Exam, h	Marks			Credits
				IA	Exam	Total	
1st Semester							
Hard Core	4 T	4 × 4 = 16	4 × 3 h	4 × 20	4 × 80	4 × 100	4 × 4 = 16
	1 T	1 × 2 = 2	1 × 2 h	1 × 10	1 × 40	1 × 50	1 × 2 = 2
Soft Core	3 P	3 × 4 = 12	3 × 4 h	3 × 10	3 × 40	3 × 50	3 × 2 = 6
Total		30	28 h	120	480	600	**24**
2nd & 3rd Semester							
Hard Core	3 T	3 × 4 = 12	3 × 3 h	3 × 20	3 × 80	3 × 100	3 × 4 = 12
	1 T	1 × 2 = 2	1 × 2 h	1 × 10	1 × 40	1 × 50	1 × 2 = 2
Soft Core	3 P	3 × 4 = 12	3 × 4 h	3 × 10	3 × 40	3 × 50	3 × 2 = 6
OEC	1 T	1 × 4 = 4	1 × 3 h	1 × 20	1 × 80	1 ×100	1 × 4 = 4
Total		30	28 h	120	480	600	**24**
4th Semester							
Hard Core	3 T	3 × 4 = 12	3 × 3 h	3 × 20	3 × 80	3 × 100	3 × 4 = 12
	1 T	1 × 2 = 2	1 × 2 h	1 × 10	1 × 40	1 × 50	1 × 2 = 2
Soft Core	3 P	3 × 4 = 12	3 × 4 h	3 × 10	3 × 40	3 × 50	3 × 2 = 6
Project	1 Pr	1 × 4 = 4	1 × 3 h	**1×20***	1 × 80	1 ×100	1 × 4 = 4
Total		30	28 h	120	480	600	**24**
Grand Total		120	112	480	1920	2400	**96**

T - Theory, P- Practical/ **Pr**oject, OEC-Open Elective

* For earning IA marks of Project work, please refer to Section 5.4 in the regulation.

Details of Course structure of M.Sc. degree in CHEMISTRY @ RCU

Papers details		Teaching h/ week	Duration of Exam, h	Marks			Credits
				Exam	IA	Total	
1st semester							
Hard Core	CHIT 1.1: Inorganic Chemistry-I	4	3	80	20	100	4
	CHOT-1.2: Organic Chemistry-I	4	3	80	20	100	4
	CHPT-1.3: Physical Chemistry-I	4	3	80	20	100	4
	CHGT-1.4: Spectroscopy-I	2	2	40	10	50	2
	CHES-1.5: Analytical Chemistry	4	3	80	20	100	4
Soft core	CHIPr -1.6: Inorganic Chemistry Practicals-I	4	4	40	10	50	2
	CHOPr-1.7: Organic Chemistry Practicals-I	4	4	40	10	50	2
	CHPPr -1.8: Physical Chemistry Practicals-I	4	4	40	10	50	2
Total		30	28	480	120	**600**	**24**
2nd semester							
Hard Core	CHIT-2.1 : Inorganic Chemistry –II	4	3	80	20	100	4
	CHOT-2.2 : Organic Chemistry- II	4	3	80	20	100	4
	CHPT- 2.3: Physical Chemistry-II	4	3	80	20	100	4
	CHGT- 2.4: Spectroscopy-II	2	2	40	10	50	2
OEC	CHEG- 2.5: Open elective	4	3	80	20	100	4
Soft core	CHIPr-2.6 : Inorganic Chemistry Practicals-II	4	4	40	10	50	2
	CHOPr- 2.7 : Organic Chemistry Practicals-II	4	4	40	10	50	2
	CHPPr- 2.8 : Physical Chemistry Practicals-II	4	4	40	10	50	2
Total		30	28	480	120	**600**	**24**

Details of Course structure of M.Sc. degree in CHEMISTRY @ RCU

Papers details		Teaching h/ week	Duration of Exam, h	Marks			Credits
				Exam	IA	Total	
3rd semester							
Hard Core	CHIT- 3.1: Inorganic Chemistry-III	4	3	80	20	100	4
	CHOT- 3.2: Organic Chemistry- III	4	3	80	20	100	4
	CHPT- 3.3: Physical Chemistry-III	4	3	80	20	100	4
	CHGT- 3.4: Spectroscopy-III	2	2	40	10	50	2
OEC	CHEG- 3.5: Open elective	4	3	80	20	100	4
Soft core	CHIPr- 3.6: Inorganic Chemistry Practicals-III	4	4	40	10	50	2
	CHOPr- 3.7 : Organic Chemistry Practicals-III	4	4	40	10	50	2
	CHPPr -3.8: Physical Chemistry Practicals-III	4	4	40	10	50	2
Total		30	28	480	120	**600**	**24**
4th semester							
Hard Core	CHIT- 4.1: Inorganic Chemistry-IV	4	3	80	20	100	4
	CHOT- 4.2: Organic Chemistry-IV	4	3	80	20	100	4
	CHPT- 4.3: Physical Chemistry-IV	4	3	80	20	100	4
	CHGT- 4.4: Spectroscopy-IV	2	2	40	10	50	2
Project	CHGP 4.5: Project /Dissertation	4		80	20	100	4
Soft core	CHIPr -4.6: Inorganic Chemistry Practicals-IV	4	4	40	10	50	2
	CHOPr -4.7: Organic Chemistry Practicals-IV	4	4	40	10	50	2
	CHPPr 4.8: Physical Chemistry Practicals-IV	4	4	40	10	50	2
Total		34	28	480	120	**600**	**24**
Grand Total		120	112	1920	480	**2400**	**96**

T : Theory, Pr : Practical, P: Project, EG : Elective General, ES : Elective Special

RANI CHANNAMMA UNIVERSITY

Syllabus of M.Sc. degree in CHEMISTRY
@
Dept. of CHEMISTRY

FIRST SEMESTER

CHIT-1.1 : INORGANIC CHEMISTRY-I
Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT–I **16 h**
CHEMICAL BONDING
Ionic Bonding
Formation, conditions for the formation of ionic compounds, lattice energy, Born-Lande's equation, calculation of lattice energy from Born-Lande's equation (problems should be solved), conclusions from Born-Lande equation, Born-Haber cycle and its applications (problems should be solved), Kapustinskii equation, factors affecting the lattice energy, properties of ionic substances, Covalent character in predominantly ionic bonds, polarizing power, factors governing the degree of polarization, Fajan's rules in predicting the melting and boiling points and solubility of some compounds.
Energetics of solubility of ionic salts in polar solvents, solvation energy, relative effects of ionic radii on lattice energy and ion-solvation energy, relative solubility of ionic compounds (alkali metal halides and silver halides, sulphates and hydroxides of alkaline earth metals).

Covalent bonding:
Valence bond theory: hybridization of atomic orbitals, Examples for compound having different hybridization (*sp*, sp^2, sp^3, dsp^2, sp^3d, sp^3d^2).
VSEPR theory: Predicting molecular geometries, Bent's rule of hybridization, illustration of Bent's rule with respect to CH_3F, PCl_3F_2), limitations of VSEPR theory.

Molecular orbital theory: Symmetry and overlap, molecular orbital diagrams of diatomic homo nuclear molecules/ions (up to second period elements), hetero-nuclear molecules/ions (HCl, LiF, CO, NO, NO^+ and triatomic molecules–linear (CO_2) and angular (NO_2). Magnetic properties of the molecules/ions based on the MOT, stability of molecules or ions based on bond order. Walsh diagrams for XH_2 species.
Metallic bonding: Characteristics of metallic states, electron sea model, V. B. approach, band theory (MOT).

Self study: Review of different types of chemical bonds with suitable examples.

Skill component: Determine the bond energy and calculate the lattice energies and discuss their application.

UNIT–II **16 h**

CHEMISTRY OF NON-TRANSITION ELEMENTS-I

Electron deficient compounds: Classification of boranes, nomenclature of boranes.**:** Synthesis, structure and properties **of** B_2H_6, B_3H_9, B_4H_{10}, B_5H_9, B_5H_{11} and B_6H_{10}.

Polyhedral skeletal electron pair counting using Wade's rules (*styx* numbers): classification of boron clusters using electron pair count.

Carboranes: Classification, Nomenclature, Synthesis of closocarboranes (C_2B_{10} H_{12}). Structural aspect of closo-$C_2B_{10}H_{12}$.

Metalloborane: Synthesis and structural aspects of $[B_{11}H_{11}AlCH_3]^{2-}$, $[Fe(CO)_3B_4H_8]$ and [2-$CpCoB_4H_8$].

Metallocarboranes: Synthesis of $[(C_2B_9H_{11})_2Fe]^{2-}$, $[C_2B_9H_{11}FeCp]^-$ and $[Co(C_2B_9H_{11})_2]^-$, Structure and Bonding in $[Co(C_2B_9H_{11})_2]^-$

Borazines: Synthesis, reactivity and, structure and bonding.

Electron Rich Compounds: Compounds of Noble gases, Preparation and structure and bonding in Xenon compounds (XeF_2, XeF_4, XeF_6, $XeOF_4$, XeO_2F_2, XeO_3, XeO_4) based on VBT and VSEPR.

Self study: Electron deficient compound other than Boran and Lewis acids.

Skill component: Demonstration on the handling of redox sensitive and air/moisture sensitive materials.

UNIT–III **16 h**

COORDINATION CHEMISTRY AND METAL CLUSTERS

Coordination chemistry: Coordination numbers (1 to 7) and their geometries, geometrical isomerism in square planar and octahedral complexes, optical isomerism in octahedral complexes.

Bonding theories: Review of VBT, EAN and their limitations, Spectrochemical series (Irwin-William series), Crystal Field Theory, splitting of d-orbitals in octahedral, tetrahedral, square planar, trigonal bipyramidal and square pyramid geometries, Jahn-Teller distortion in co-ordination compounds. Factors affecting the CFSE values.

Limitations of CFT, evidences for metal ligand orbital overlap, Molecular Orbital Theory with sigma (σ) bonding applied to octahedral, tetrahedral and square plannar complexes. MO-Theory with ıı(pi)–bonding applied to octahedral complexes.

Metal Clusters

Dinuclear compounds: Quadrapole bonding, calculation of M-M bond order and structural aspects and magnetic properties of $Re_2Cl_8^{2}$.

Trinuclear clusters: Bond order, magnetic properties and structural aspects of Re_3Cl_9.

Self study: Basics of Coordination Chemistry (Review of VBT, EAN and their limitations).
Skill component: Methods to Identify cis- & trans- as well as L- & D-isomerism.

UNIT–IV **16 h**

Pi (π) ACID METAL COMPLEXES AND ACID-BASE CHEMISTRY

Metal Carbonyls: Different binding modes of CO, pi (π) acidity of CO, back bonding, synergic effect, mononuclear carbonyls, low nuclearity carbonyl clusters and high nuclearity carbonyl clusters, application of 18 electron rule to metal carbonyls.
Structural features of $[Co_2(CO)_8]$, $[Co_4(CO)_{12}]$ and $[Fe_3(CO)_{12}]$.
Preparation and structural aspects of $Ni(CO)_4$, $Fe(CO)_5$ and $Co_2(CO)_8$ by direct reaction of metals, $V(CO)_6$, and $Mn_2(CO)_{10}$ by reductive carbonylation.
Metal Nitrosyls: Coordinating behavior of NO, NO as a bridging ligand, factors favoring linear and bent M-N-O linkage, synthesis of nirosyl complexes (brown ring complex).
Dinitrogen Complexes: Reason for poor coordinating behavior of N_2 compared to its isoelectronic species, binding modes of N_2, preparation of Ru and Mo dinitrogen complexes.
Acid-Base Chemistry: Bronsted-Lowry concept, Lux-Flood theory, solvent-system definition, Lewis theory, Usanovich concept, Hammett acidity function (superacids), HSAB theory.
Self study: structural features of $Ni(CO)_4$, $Fe(CO)_5$ and $Co_2(CO)_8$
Skill component: Preparation of one metal nitogen compound and its characterization.

REFERENCE BOOKS:

01. Fundamental concepts of Inorganic Chemistry by A. K. Das, CBS ,volume 1 to 7.
02. *Concise* inorganic Chemistry 5th Edition J.D. Lee Oxford University Press(OUP), wiley India 2008.
03. Inorganic Chemistry: Principles, structure and reactivity, 1997, J. E. Huheey, E.A.Keiter , R.L.Keiter, O.K.Medhi 4th Edition, Pearson Education, Dorling kindersley (India) Pvt. Ltd. 20th impression 2014.
04. Inorganic Chemistry, C. E. Housecroft and A. G. Sharpe, , 3rd edition.
05. Inorganic Chemistry by Keith F. Purcell, John C. Kotz, New Delhi India , 2010.
06. Inorganic Chemistry – A unified approach by W. W. Porterfield 2nd edition , academic press- An imprint of Elsevier , reprint 2013.
07. Advanced Inorganic Chemistry by F. Albert Cotton, Geoffrey Wilkinson, Carlos A. Murillo, Manfred Bochmann, 6th Edition, John Wiley , New Delhi, Reprint 2015.

08. Inorganic Chemistry by Gary L. Miessler, Donald A. Tarr, 3rd Edition, Pearson Education, Dorling kindersley (India) Pvt. Ltd. 21st impression 2015.
09. Chemistry of the Elements by N N Greenwood and A. Earnshaw ,2nd Edition school of chemistry University of Leeds , 1st published by Pergamon press plc 1984, Reprinted 2001, 2002, 2003(twice),2005.

CHIPr -1.6 **INORGANIC CHEMISTRY PRACTICALS-I**

Duration: 4 h/ week & Total: 64 h **Credits : 2**

Part A. Ore Analysis:

01. Haematite: Iron by volumetric (potassium dichromate and Ceric ammonium sulphate) method and by colorimetric method
02. Pyrolusite: Determination of manganese dioxide in pyrolusite using permanganate titration
03. Estimation of calcium and magnesium carbonates in dolomite using EDTA titration, and gravimetric analysis of insoluble residue.

Part B. Alloy Analysis :

04. Quantitative analysis of Copper-Nickel in alloy /mixture:
05. Copper volumetrically using KIO_3.
06. Nickel gravimetrically using DMG
07. Quantitative analysis of Copper-Zinc in alloy/mixture:
    i. Copper gravimetrically as Cu(I) thiocyanate.
    ii. Zinc by volumetrically by EDTA method

Part C. Determination of COD and BOD of polluted water.

REFERENCE Books:

1. Vogel's Textbook of Quantitative chemical analysis, - J Mendham, R.C. Denney, J.D. Barnes M.J.K. Thomas, peason education, india. 3rd, 4th , 5th and 6th edition.2008
2. Vogel's Quantitative Inorganic analysis , 7th edition G. Svehla , B.Sivasankar, pearson education, India.
3. Practical Inorganic Chemistry, - K. Somashekara Rao, Chennupati Venkata Suresh.BPS books,2019.
4. Principles of Inorganic Chemistry,- Puri, Sharma, Khalia.Mlestone publishers & distributors, 2014.

CHOT-1.2 : ORGANIC CHEMISTRY-I

Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT-I **16 h**

BASIC CONCEPTS AND REACTION MECHANISM

Concept of hybridization: sp^3, sp^2, sp – with examples.
Electronic effects: Inductive, electronic, resonance and hyperconjugation.
Classification of organic reagents and reactions.
Reactive Intermediates: carbocations, carbanions, free radicals, carbenes, nitrenes, and arynes- their formation, stability, structure and reactions.
Organic acid and bases: Effect of substituents with examples
Reaction Mechanism: Classification, determination of reaction mechanism by kinetic and non-kinetic-methods.
Kinetic Method: Mechanistic implications from rate laws, the transition state theory, ambiguities ininterpreting kinetic data, solvent effect, ionic effect, isotopic effect, solvent isotopic effect, substituent effect, steric effect, linear free energy relationships–Hammett equation and Taft treatment.
Non-kinetic methods: Energy profile diagram, identification of products, testing possible intermediates, trapping of intermediates, cross over experiments, isotopic labeling, stereochemical studies, limitations.

Self study (SS): Basic of atom, molecules, hybridization, ionization energy, electron affinity, electronegativity, delocalization, Bohr theory, Aufbau principle, steric effect, rate of reaction, activation energy, isotopes, stereochemistry.

Skill components: Free radical- ESR spectra of some of the molecule analysed. Carbocation- isolated compound list and analysis.

UNIT-II **16 h**

ADDITION AND ELIMINATION REACTIONS

Addition reactions: Types of addition reactions, mechanism and stereochemistry of addition, effect of substrates and solvents during addition. Addition to Carbon-Carbon double bond-addition of hydrogen halide(Markonikov's rule), bromine. Addition to carbon-hetero multiple bonds (C=O)-Introduction, structure and reactivity, HCN, bisulphate, Grignard reagent, hydride, amino compounds, alcohols and thiols.
Elimination reactions: Introduction, types of elimination-E_1, E_2, E_{1CB} mechanisms, orientation during elimination reactions-Saytzeff and Hoffmann rules, pyrolytic eliminations, Chugave, Cope eliminations, Hoffmann degradation and dehalogenation of vicinal di halides, substitution v/s elimination with suitable example.

Self study (SS): Basics of saturated and unsaturated compounds, Markonikov's and anti-Markovnikov's rule, electrophiles and nucleophiles, geminal and vicinal compounds, difference between addition and elimination reactions.

Skill components: Analyse some addition and elimination product by FT-IR , UV-vis and NMR spectra available from open access/recorded.

UNIT-III **16 h**

SUBSTITUTION REACTIONS

Aromatic electrophilic substitution reactions: General mechanism of electrophilic substitution in aromatic systems using examples of nitration, halogenations, sulphonation and Friedal Craft alkylation and acylation.

Orientation effect of disubstitution in aromatic systems with suitable examples.

Nucleophilic substitution at saturated carbon: Mechanism of S_N1, S_N2, S_Ni reactions–effect of solvent, substrate and leaving group, neighboring group participation, substitution at vinylic and allylic carbon.

Aromatic nucleophilic substitution reactions: Substitution of hydrogen, substitution other than hydrogen, S_NAr reactions, S_N1, S_N2 and benzyne mechanism, Bucherer reaction.

Self study(SC): Basics of Aromaticity, electrophiles and nucleophiles, electron withdrawing and electron releasing groups and their examples, difference between solute and solvents, vinylic and allylic groups, acids and bases, saturated and unsaturated carbons, stereochemistry (retension & inversion), rate of reaction and activation energy.

Skill components(SC): SN^1, & SN^2 products may be analyzed by polarimeter method and record and analyzed nitration and halogenation products using UV-Vis and FT-IR.

UNIT-IV **16 h**

STEREOCHEMISTRY

Optical isomerism: Concepts of chirality-symmetry elements and cause for optical activity, chiral structures, relative configuration- Fischer's DL notation, threo and erythro nomenclature , absolute configurations- R, S nomenclature.

Molecular presentation: Sawhorse, Newman, Fischer and fly wedge formulae, enantiomers, epimers, anomers, recemic mixtures, resolution of racemic mixtures- Mechanical, biochemical and chemical method.

New methods of asymmetric synthesis: using optically active reagents, optically active substrates and optically active catalysts with suitable examples.

Enantio selective synthesis and diastereo selective synthesis.

Conformational analysis: Simple acyclic systems (butane, 1,2-dichloroethane) and cyclic systems(chair and boat forms of cyclohexane), effect of conformation on reactivity in acyclic and cyclic systems with suitable examples, stereoisomerism in biphenyls, allenes, and spirans.

Geometrical isomerism: Cis-trans, E-Z and syn-anti notations for geometrical isomers, geometrical isomerism in substituted alkenes, oximes, monocyclic and fused and bridge ring system, determination of configuration of geometrical isomers-physical and chemical methods.

Self study(SS):Basics of stereochemistry, classification, Isomerism, optical activity, chiral compounds, priority order, cis-trans, dextro-levo, oxidizing and reducing agents, plane of polarization.
Skill components(SC): Students need to create suitable model for R & S configuration by stick & ball method. Dextro & leavo rotation of some samples record/analyzed by suitable data.

REFERENCE BOOKS:

01. Organic reaction mechanisms- V.K. Ahluwalia, R.K. Parashar, 4rt Edition, Narosa Publishing House, New Delhi, Chennai, Mumbai, Kolkata 2011.
02. Organic chemistry , Jonathan clyden, Nick Greeves and Stuart warren. 2nd edition , Oxford university press , UK 2014.
03. Organic reaction and their mechanisms- P.S. Kalsi, 2nd Edition, New Age International Pvt. Ltd., New Delhi, 2007.
04. Organic chemistry- R.T. Morrison, R.N. Boyd, 6th Edition, Pearson India 2017.
05. Solomons *Organic chemistry- T.W.Graham solomons, Craig B*. Fryhle, Scott A.Snyder, golden edition, Wiley . Reprint 2017.
06. Solomons and Fryhles Organic chemistry 10th Stereochemistry of Organic compounds, E. L. Eliel, S. H. Wilen and L. N. Mander, John Wiley & Sons, 1994.
07. Stereochemistry of Organic compounds- Principles and applications, Nasipuri, D, Revised 2nd Edition, New Age International Pvt. Ltd., New Delhi, 2009.
08. Advanced organic chemistry, Jerry March, 4th Edition, Wiley India Pvt. Ltd., New Delhi, 2008.
09. P. J. Garratt in Comprehensive organic chemistry, D. Barton and W. D. Ollis, 1st Edn. Pergamon Press, Oxford, 1979.
10. Organic photochemistry, J. M. Coxon and B. Halton, 1st Edn, Cambridge Univ. Press, London, 1974.
11. Molecular reactions and photochemistry, C. H. Deputy and D. S. Chapman, 1st Edn. Prentice-hall India, New Delhi, 1972.
12. Organic Chemistry,volume 1, New age, S.M. Mukherji, S.P.Singh, R.P.Kapoor, R.Dass.

CHOPr-1.7: ORGANIC CHEMISTRY PRACTICAL-I

Duration: 4 h/ week & Total: 64 h **Credits : 2**

TWO STEP PREPARATIONS

01. Preparation of acetanilide from aniline
02. Preparation of p-bromoacetanilide from acetanilide
03. Preparation of hydrolysis of p-bromoacetanilide to p-bromoaniline
04. Preparation of p-nitroacetanilide from acetanilide
05. Preparation of hydrolysis of p-nitroacetanilide to p-nitroaniline
06. Preparation of bezoic acid from benzaldehyde
07. Preparation of 2-hydroxynaphthaldehye from 2-naphthol
08. Preparation of 2,4,6 tribromo benzene from aniline
09. Preparation of phenylazo-β-naphthol
10. Preparation of 1-phenyl-3-methyl-pyrazolone

NOTE : Two preparations are to be given for Practical Examinations.

REFERENCE BOOKS:

01. Vogel's Text Book of Practical Organic Chemistry, Brian S , Furniss, Anthony j. Hannaford, 5th Edition, Pearson India, 2005.
02. Practical Organic Chemistry F.G. Mann, B.C Saunders, Fourth edition, Pearson India,2011.
03. Systematic Laboratory Experiments in Organic Chemistry Arun Sethi, New Age International, 2003.
04. Comprehensive Practical Organic Chemistry: Qualitative Analysis Ahluwalia V.K. Sunitha Dhingra, First edition, Orient Longman, 2004
05. Practical Organic Chemistry: Qualitative Analysis Bhutani S.P. Chhikara A, First edition, ANE books-new Delhi, 2009
06. Laboratory techniques in Organic chemistry-V.K. Ahluwalia , Pooja Bhagat & Renu Aggarwal, I.K. International Publishing House Pvt.Ltd.
07. Laboratory Manual of Organic Chemistry Raj K. Bansal. 5th edition, New Age international publishers, 2008.

CHPT-1.3 : PHYSICAL CHEMISTRY-I

Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT–I **16 h**

QUANTUM CHEMISTRY-I

A brief resume and comparative studies of classical and quantum mechanical phenomenon, Summarization of the results of some experiments (black body radiation, Plank quantum theory, term symbols), Photoelectric and Compton effects. Davison and Germer experiment, Franck-Hertz experiment, Young's double slit experiment. Derivation of Bohr's principle of quantization of angular momentum of electron from de-Broglie's relationship, consequences of de-Broglie equation, de-Broglie concept (To be derived). Uncertainty principle, mathematical expression for uncertainty principle. Postulates of quantum mechanics, operators, algebra of operators, ψ properties. Hamiltonian operators and their properties, Schrödinger's equation (with respect to space and time time). Physical significance of and characteristics of wave function, eigen function and eigen values, probability distribution function, normalization of ψ, orthogonality of ψ boundary valued condition. Application of equation to one dimension box.

Self Study: Basic study about quantum and classical chemistry, study postulates of quantum chemistry, learning linear algebra.

Skill Component: Installation and operating DFT Software.

UNIT-II **16 h**

THERMODYNAMICS-I

Review of basic principles of thermodynamics (I and II laws of thermodynamics, concept of free energy and entropy, combined form of first and second laws of thermodynamics. Entropy change during spontaneous process. Helmholtz and Gibbs free energies. Thermodynamic criteria of equilibrium and spontaneity. Variation of free energy with temperature and pressure. Third law of thermodynamics-calculation of absolute entropies. Real gases and fugacity, Variation of fugacity with temperature and pressure. Thermodynamics of dilute solutions: Raoult's law, Henry's law. Ideal and non-ideal solutions: Liquid-liquid solutions, liquid-solid solutions, multicomponent systems and excess thermodynamic properties. Maxwell's relation (to be derived). Thermodynamic equations of equipartition of energy, Classius-Clapeyron equation (to be derived) and its application. Entropy of vaporization. Vant-Hoff's equation, integrated form of van't Hoff's equation. (problems to be solved).

Self Study: Study terms used in chemical thermodynamics, standard units of measurement of length, weight, time and capacity, zeroth law thermodynamics.

Skill Component: Temperature dependent chemical reactions, explaining state and path functions.

UNIT–III **16 h**

ELECTROCHEMISTRY –I

Arrhenius theory of strong and weak electrolytes and its limitations, theory of ionic conductance in solutions, ionic atmosphere, relaxation and electrophoretic effects, Debye-Huckel theory of strong electrolytes, Debey-Huckel-Onsagar equation(derivation) and Debey-Huckel limiting law(derivation), quantitative and qualitative treatment of Debye-Huckel limiting law, Onsagar activity co-efficient, mean ionic strength (Debey-Huckel limiting law). A brief survey of Helmholtz-Perrin, Gouy-Chapman and Stern electrical double layer (No Derivation). Liquid junction potential and its determination. Fundamentals of batteries, classification of batteries, battery characteristics, primary batteries, dry cell, alkaline MnO_2 batteries and other batteries, secondary batteries-lead acid, alkaline storage batteries and fuel cells types and applications.

Self Study: Redox reactions, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's law, electrolysis and law of electrolysis (Elementary idea)

Skill Component: Cyclic Voltammetric Study of ferrocyanide/ferricyanide Redox couple.

UNIT–IV **16 h**

POLYMER AND DENDRIMER CHEMISTRY: Basic concepts: Monomers, polymers and degree of polymerization, general classification of polymers, homopolymers, copolymers, terpolymers. Polymer molecular weight: Number average and weight average molecular weights, polydispersity and molecular weight distribution in polymers. Viscoelastic behavior of polymers (Stress Strain curve). Addition polymers and condensation polymers, comparison between thermoplastics and thermosetting polymers. Transition in Polymers: Definition of glass transition temperature (Tg) and flow temperature (Tf) and melting temperature (Tm). Thermal behavior of amorphous and crystalline polymers, factors affecting Tg. Plasticizers, properties and their effect on Tg of PVC. Comparison of Tg and Tm, Tg of copolymers and polymer blends, relation between Tg and Tm. Preparation, properties and commercial importance: polyethylene, polystyrene, polyvinyl chloride, poly sulphone, polyurethances, polyisoprenes. Metallocene catalysis polymerization (Ziegler-Natta polymerization). Methods of polymer fabrications, Fabrication of shaped polymer objects, Spinning industrial polymers. **Dendrimers and hyper-branched polymers:** Introduction to dendrimers, methods of preparation, common properties and applications. Synthesis of polyamidoamines using devergent route and dendratic polyether macromolecules using convergent route.

Self Study: Study of polymers in everyday life. Physical and Chemical properties of Polymers.

Skill Component: Visiting polymer industries around Belgaum

REFERENCE BOOKS:

01. Physical chemistry –Moore,Orient Longman, 5th edition, Longman publishing group(January 1, 1998).

02. Principle of polymer science, by Bhahadur and N.V Sastry, 2nd addition Alpha science international, 2005.
03. An introduction to Chemical Thermodynamics –R. P.Rastogi and R.R.Misra, Vikas, Delhi, 1978.
04. Thermodynamics, Statistical Thermodynamics and Kinetics- Thomas Engel and Phillip Reid, 3rd edition, Pearson publication.
05. An introduction to Electrochemistry – Samuel Glastone, Read books Ltd, 2011.
06. Electrochemistry principles and applications – D. R Crow, 4th edition, CRC Press (30 September 1994).
07. Modern electrochemistry Vol. I and II, by J.O.M. Bockris and A.K.N. Reddy, Pentium Press, New York (1970).
08. Industrial Electrochemistry–D. Pletcher and F.C. Walsh, Chapman, II Edition, 1984
09. Molecular Quantum Mechanics – Peter Atkins and Ronald Friedman, 5th edition, Oxford university press (11 May 2012).
10. Quantum Chemistry- Anintroduction- W Kauzmann, Academic Press Inc,(1st December 1957).
11. Quantum Chemistry-R.K. Prasad, 2nd Edition, New Age Int-2001

CHPPr-1.8 PHYSICAL CHEMISTRY PRACTICALS-I

Duration: 4 h/ week & Total: 64 h **Credits : 2**

1. **Conductometry**
   - **a.** Acid mixture versus NaOH
   - **b.** Weak acid with salt versus NaOH
   - **c.** Strong acid with salt versus NaOH
   - **d.** To determine the acidic and basic dissociation constant of an amino acid and determination of isoelectric point by pH metry.
   - **e.** Determine the equivalent conductance at infinite dilution for acetic acid by applying Kohlrausch's law of independent migration of ions.
2. **Potentiometry**
   1. $K_2Cr_2O_7$ versus FAS
   2. Acid mixture versus NaOH
   3. $KMnO_4$ versus FAS
   4. Determination of dissociation constant of H_3PO_4 using potentiometric method.
   5. Determination of pKa value of phosphoric acid by pH meter.

REFERENCE BOOKS:

1. Advanced Physico-Chemical Experiments–J.Rose,John Wiley, Newyork(1964).
2. Practical Physical Chemistry –B. Viswanathan, P.S.Raghvan, MV Learning publisher.
3. Advance Practical Physical Chemistry – J.B.Yadav, 30th edition, Krishna prakashan media.
4. Experiments in Chemistry –D.V. Jahagirdar, Himalaya Publishing House, Bombay, (1994).
5. Experimental Physical Chemistry –Das. R.C. and Behera B, Tata Mc Graw Hill

CHGT-1.4 SPECTROSCOPY-I

Teaching: 2 h/ week & Credits : 2 **Total: 32 h**

UNIT–I **16 h**

MICROWAVE and RAMAN SPECTROSCOPY

Electromagnetic radiation: Interaction of radiation with matter-absorption, emission, reflection, refraction, transmission, dispersion, polarization, interference and scattering, natural line width and broadening (Doppler effect), Heisenberg uncertainity and intensity of spectral lines, regions of electromagnetic spectrum and their corresponding energies: rotational, vibrational and electronic transitions and their energy levels.

Microwave spectroscopy: Diatomic molecules**-r**igid and non rigid rotatormodel(No derivation), rotational quantum number and the selection rule, effect of isotopic substitution on rotation spectra, relative intensities of the spectral lines, classification of polyatomic molecules based on moment of inertia-linear, symmetric top, asymmetric top and spherical molecules, rotation spectra of polyatomic molecules(CO_2, CH_3F and BCl_3), moment of inertia expression for linear tri-atomic molecules, experimental techniques-microwave spectrometer, applications-principles of determination of bond length and moment of inertia from rotational spectra and determination of dipole moments.

Raman spectroscopy: Introduction, Raman and Rayleigh scattering, Stokes and anti-Stokeslines, polarization of Raman lines, depolarization factor, polarizability ellipsoid, theories of Raman spectra-classical and quantum theory, comparison of Raman and IR spectra, rule of mutual exclusion principle, advantages of Raman spectra.

Self study(SS): Basic of emission, reflection, refraction, transmission, dispersion, polarization, scattering, Doppler effect, Heisenberg uncertainity,diatomic molecules**,** isotopes, polyatomic molecules, moment of inertia, tri-atomic molecules, bond length anddipole moments. Basic of Raman Theory, polarisability

Skill component (SC): Raman spectral studies of any two compounds.

UNIT–II **16 h**

UV-VISIBLE and INFRARED SPECTROSCOPY

UV-visible spectroscopy: Types of transitions and their theoretical interpretation, Beer's law, Lambert's law, Beer's-Lambert's law, limitations, chromophores, auxochromes, effect of substituents on the position of λmax, prediction of λmax for polyenes, α,β-unsaturated aldehydes and ketones (Woodward- Fisher rules), aromatic systems and their derivatives. basic components of instrumentation-single and double beam designs, applications-analysis of binary mixtures, measurement of dissociation constants of acids and bases.

IR spectroscopy: Vibration of diatomic molecules, vibrational energy curves for simpleharmonic oscillator, effects of anharmonic oscillation, vibration-rotation spectra of carbon monoxide(No derivation), expressions for fundamental and overtone frequencies, vibrations of polyatomic molecules–The number of degrees of

freedom of vibration, , modes of vibration(CO_2 and H_2O), fundamental, overtone, combination, hot bands, Fermi resonance, force constant and its significance, theoretical group frequency, intensity of absorption band and types of absorptions, identification of functional groups- alkanes, alkenes, aromatics, carboxylic acids, carbonyl compounds(aldehydes and ketones, esters), amides and amines, fingerprint region, vibrational coupling, hydrogen bonding, steric effect and ring strain.

Self study(SS): Basic of Self study(SS): Basic of Beer's law, Lambert's law, Beer's-Lambert's law, chromophores, auxochromes, binary mixtures, IR spectroscopy, Quantum theory of IR spectroscopy and Polarity of bond.
Skill component (SC): Selected organic compounds may record UV-vis absorption of benzophenone, benzaldehyde and substituted compounds. And student need to study, how to calculate molar extinction co-efficient (ε), λ_{max} and concentration of some of the molecules/proteins.
Selected six organic compounds may record FT-IR and analysed complete spectrum of stretching and bending.

REFERENCE BOOKS:

1. Introduction to Spectroscopy. Pavia, Lampman , Kriz, Vyvyan 5th edition, cengage learning India private limited ,2015.
2. Spectroscopy of organic compounds – P. S. Kalasi, 6 th edition New age international publishers. Reprint 2005.
3. Modern spectroscopy by J.Michael Hollas , published by John Wiley& sons, Ltd. 2004.
4. Elementory Organic spectroscopy – Principles and applications– by Y.R.Sharma, publishers- S.Chand & company PVT.LTD. New Delhi , revised edition 2013.
5. Organic Spectroscopy, William Kemp, 3rd edition, Palgrave, reprinted 2008.
6. Organic Spectroscopy, 1nd edition– Jag Mohan, Narosa Publishing House
7. Vibration Spectroscopy Theory and Applications, D. N. Satyanarayana, New age International(P) Limited publishers New Delhi, reprint 2005. .
8. Fundamentals of Molecular Spectroscopy, C. N. Banwell and E. M. McCash. 4th edition, Tata McGraw-Hill, India, New Delhi, 2017.
9. Application of absorption spectroscopy of organic compounds, John R. Dyer, prentice- Hall of India Pvt.Ltd. 2007.
10. Introduction to Molecular Spectroscopy, G. M. Barrow, McGraw-Hill, New York
11. Physical methods in inorganic chemistry – R. Drago, 2 nd edition , Saunders college pub. 1992.
12. Instrumental methods for chemists – Gurdeep Chatwal, Himalaya publication house , 2012.
13. Applications of IR and Raman spectroscopy to coordination and organometallic compounds, K. Nakamoto, 2008.

CHES-1.5: ANALYTICAL CHEMISTRY

Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT-I **16 h**

DATA ANALYSIS

Classification of analytical methods: Types of instrumental analysis, analytical methods on the basis of simple size. Errors, types of errors, determinate and indeterminate errors, accuracy and precision. Distribution of random errors, frequency distributions normal error curves. Statistical treatment of finet samples, measure central tendency -mean, medium, range, average deviation, relative average deviation, standard deviation and variance. Students' confidence interval of the mean. Testing for significance, comparison of two means and two standard deviations. Criteria for rejection of an observation-Q test, control chart, propagation of errors, significant figures. Least square methods of deriving calibration of plots. Principles of sampling the sampling step. Methods for sampling solid, liquid and gaseous samples. Effect of sampling uncertainties. Sampling hazards, need for quality assurance: ISO 9000 series of quality of system.

Self study(SS): Basics of analytical errors, accuracy, precision and sampling method.

Skill components(SC): Students should able to identify the errors occurred during the volumetric (Ore/ Alloy) analysis by laboratory method.

UNIT–II **16 h**

CHROMATOGRAPHY

Introduction, Principles, classifications, fundamentals of chromatography (Partition coefficient, Retardation factor, retention volumes), Dynamics of chromatography (Efficiency, zone spreading, eddy diffusion) chromatograms, retention time and column efficiency, plate theory and rate theory, Van-Deemeters equation, column resolution, factors influencing resolution.

THIN LAYER CHROMATOGRAPHY

Introduction, stationary and mobile phase systems, Rf value calculation, various technique of developments, visualization and applications.

ION EXCHANGE CHROMATOGRAPHY

Introduction, principle, classification of ion exchange resins, mechanism of ion exchange,synthesis of ion exchange resins (cation and anion), characteristics of ion exchange resins (size, capacity, cross linking and swelling and resistance) applicationsin analytical and metal separations.

HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

Introduction, principles, instrumentation, mobile phase, stationary phase, types of column, various detectors used, and applications.

Self study(SS): Basic fundamentals of chromatography, TLC, HPLC and ion exchange chromatography.

Skill components(SC): Prepare the TLC plates , analyse the mixtures , identify and check the purity of compound.

UNIT–III **16 h**

SEPERATION TECHNIQUES and THERMAL METHODS OF ANALYSIS

Solvent Extraction: Definition, types, principle and efficiency of extraction, sequence of extraction process, factors affecting extraction-pH, oxidation state, modifiers, synergistic, masking and salting out agents, techniques-batch and continuous extraction, applications, Separation of lanthanides.

Electrophoresis: Introduction, types and techniques of electrophoresis, factor affecting migration of ions, continuous electrophoresis, thin layer electrophoresis, moving boundary electrophoresis, zone electrophoresis, and Curtain electrophoresis, reverse osmosis electro dialysis, capillary electrophoresis and applications.

Thermal Methods of Analysis: Introduction, thermogravimetric analysis (TGA), types of thermogravimetric analysis, principle and method, automatic thermogravimetric analysis, instrumentation, types of recording thermobalances, sample holders, factors influencing thermograms and applications, isothermal analysis, Differential Thermal Analysis (DTA), principle of working, theory and instrumentation, simultaneous DTA-TGA curves, factors affecting results and applications. Differential Scanning Colorimetry(DSC), principle of working, theory, instrumentation and applications. Types of titrations and gravimetric analysis.

Self study(SS): Basics of extraction, electrophoresis, TGA, DTA, DSC.

Skill components(SC): Students should do the binary mixture separation by using separation technique(Solvent extraction).

UNIT–IV **16 h**

ELECTROANALYTICAL TECHNIQUES

Introduction, electrochemical cells, faradic and non-faradic current, mass transfer in cells, galvanic and electrolytic cells, anodes and cathodes, liquid junction potential, schematic representation of cells.

Polarography: Theory, principle and applications classical polarography, dropping mercury electrode, polarogram, polarographic measurements, polarographic current, Ilkovic equation, current and concentration relationship, half wave potential, oxygen interference- advantages and limitations. Qualitative and quantitative analysis. Derivative polarography.

Amperometry and Coulometry at controlled potential and at constant current.

Cyclic voltametry - basic principles, instrumentation and applications, stripping voltammetry and its applications including Electro -organic synthesis.

Electrogravimetry - theory, electrode reactions, over-voltage, characteristics of a good deposit, completeness of deposition, Determination of copper and nickel in Cu-Ni alloy.

Self study(SS): Basics of electrochemical cells, galvanic and electrolytic cells, polarography, Qualitative and quantitative analysis.
Skill components(SC): Students need to do the chemical analysis of the given reducible / oxidizable substances using polarogram.

REFERENCE BOOKS:

01. Principle of Quantitative Chemical Analysis – Robert de levie, International edition (1997) McGraw Hill Co.
02. Quantitative Analysis- Day and Underwood, Prinitce Hall Indian, Pvt Ltd 6thedition (1993).
03. Vogel's Textbook of quantitative chemical analysis- Revised by G.H.jaffery, J. Bassett, J. Mendhm and R.C. Denney ELBS 5thedition (1998).
04. Quantitative Chemical Analysis: D.C Harris W.M. Freeman and Co, NY, USA, Ed, (1995).
05. Physical Methods in Inorganic Chemistry- R. Drago, Affiliated to East west Pvt, (1968).
06. Introduction to chromatography- theory and practice-V.K. Srivastava and K.K.Srivastava, S. chand Company Ltd., IV Ed (1991).
07. Basic Concepts of analytical Chemistry- S.M Khopkar, New Age Intentional Publishers, IIEd.,(1998).
08. Analytical chromatography- G.R Chatwal, Himalaya Publishing House, VII Ed., (1998).
09. Principles of Instrumental Analysis, D.A. Skoog, E.J. Holler, T.A. Nieman, 5th Edition, Thomson Aisa Pvt. Ltd., Singapore, 2004.
10. Fundamentals of Analytical Chemistry, D.A. Skoog, D.M. West, E.J. Holler, S.R. Crouch, 8th Edition, Thomson Aisa Pvt. Ltd., Singapore, 2004.
11. Introduction to Chromatography- Theory and Practice**,** V.K. Srivatsan and K.K. Srivatsan, S. Chand Company Ltd. 4th Edition (1991).
12. Analytical Chemistry – Theory and Practice,, R.M. Verma, 3rd Edition, CBS Publishers ,New Delhi, India, 2012.

M.Sc. in CHEMISTRY @ RCU
SECOND SEMESTER

CHIT-2.1: INORGANIC CHEMISTRY-II

Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT–I 16 h

SYMMETRY AND GROUP THEORY

Molecular symmetry: Symmetry elements and symmetry operations, rotation axis, rules for orientation of molecules, plane of symmetry, rotation-reflection axis, centre of symmetry and identity element of symmetry, products of symmetry operations, general relations among symmetry elements and symmetry operations.

Group theory: Concept of a group, definition of a point group, procedure for classification of molecules into point groups, subgroups, Schoenflies and Hermann-Maugin symbols for point groups, multiplication tables for the symmetry operations of simple molecules, matrix notation for the symmetry elements and for geometric transformations, class of a group and similarity transformation.

Representation of groups: Reducible and irreducible representations, Great Orthogonality theorem and its consequences, labeling of irreducible representations, group theory and hybrid orbitals to form bonds, character tables (Cs, Ci, C2, C2v and C3v).

Applications of group theory: Applications of group theory to crystal field theory, bonding in octahedral and tetrahedral complexes, symmetry and dipole moments, symmetry and optical activity.

Self study: Finding the symmetry elements in compounds with higher CN (> 6)
Skill component: Construct the ball and stick model of any chairal compound and deduce the representations.

UNIT–II 16 h

COORDINATION CHEMISTRY-REACTIONS, KINETICS AND MECHANISMS

Types of mechanisms in substitution reactions-dissociation, interchange and association.

Metal-ligand equilibria step-wise and overall stability/formation constant, factors affecting stability of metal complexes. Determination of stability constant by spectrophotometric (Job's) method.

Reactions and kinetics of substitution in square planar complexes: Trans effect, substitution reactions. Rate law and mechanism of nucleophilic substitution in square planar complexes, thermodynamic and kinetic stability.

Reactions and kinetics of substitution in octahedral complexes: Ligand field effects and reaction rates, mechanism of substitution in octahedral complexes, reaction rates influenced by acid and base, mechanism of redox reactions-outer sphere and inner sphere mechanisms. Marcus theory, photochemistry of metal complexes-types of photochemical reactions, photo-substitution and photo-redox reactions and excited

state outer sphere electron transfer reactions (solar energy conversion), complimentary and non-complimentary reactions.

Self study: Fundamental of Solar cell and its reaction mechanism.
Skill component: Find the rate law of substitution reaction using UV-Vis spectrophotometer.

UNIT–III **16 h**

SOLID STATE AND STRUCTURAL CHEMISTRY

Types of solids, close packing of identical solid spheres, tetrahedral and octahedral voids, packing fraction, radius ratio.

Crystallographic systems: Bravias lattices, Miller indices, external features of crystals.

Structures of selected crystals: normal and inverse spinels, hexagonal structures, pervoskites.

Defects in solids: Point defects (stoichiometric and non-stoichiometric), line defects and plane defects, stacking faults and grain boundaries.

Structural transformation of solids

Solid solutions : Hume – Rothery rules, substitutional solid solutions and interstitial solid solutions, solid solution mechanism.

Alloy systems: Phase diagram and their features with respect to alloys - two and three component systems, copper–zinc system, steels with reference to iron-carbon systems.

Self study: X-ray diffraction technique for powder sample and single crystal.
Skill component: Indexing of XRD pattern of a cubic system.

UNIT–IV **16 h**

NUCLEAR CHEMISTRY

Radioactivity, nuclear reactions, nuclear power reactors–radioactivity, determination of half life, radioactive decay kinetics, parent-daughter decay-growth relationships, secular and transient equilibria, nuclear reactions, spallation, nuclear fission and fusion, types of nuclear power reactors, basic features and components of a nuclear power reactor, safety measures, an introduction to breeder reactors, applications of radioisotopes-synthesis of various useful radioisotopes, physico-chemical and analytical applications-isotope dilution method, activation analysis, radiometric titration and ^{14}C dating, medical, agricultural and industrial applications of isotopes.

RADIATION CHEMISTRY

Interaction of matter with radiation, radiation dosimetry-units and measurement of chemical dosimeters (Fricke and ceric sulphate dosimeters), radiation chemistry of water, a brief introduction to radiolysis of liquids and solids, industrial applications of radiation chemistry (radiation polymerization, food irradiation and radiation synthesis).

Health and Safety Aspects: Biological effects of radiation, hazards in radiochemical work, radiation protection, decontamination procedures, permissible exposure doses, nuclear waste management including waste storage and disposal procedures.

Self study: Safety measures from radiation field
Skill component: Measuring the radioactivity present in standard sample using GM counter OR construct the Fricke dosimeter and measure the absorbed radiation.

REFERENCE BOOKS:

01. Symmetry and Spectroscopy of Molecules by K. Veera Reddy, New Age International(P) Ltd.
02. Chemical Applications of Group Theory by F. A. Cotton, 3rd Edition, John Wiley & Sons.
03. Group theory and its Chemical Applications by P. K. Bhattacharya Himalaya publishing house.
04. Inorganic Chemistry: Principles, structure and reactivity, by J. E. Huheey, Ellen Keiter, Richard A Keiter and Okhil K Medhi, 4th edition, Pearson publication.
05. Inorganic Chemistry, by C. E. Housecroft and A. G. Sharpe, 4th edition Pearson publication.
06. Inorganic Chemistry by Keith F. Purcel and John C. Kotz, Saunders, 1977.
07. Concepts and Models of Inorganic chemistry by Bodie Douglass, John Alexander and Darl Mcdaniel, 3rd edition, John Wiley and Sons.
08. Inorganic Chemistry by Gary L Miessler and Donald A Tarr, 3rd Edition, Pearson Publication.
09. Introduction to Solids by Leonid Azaroff, 33rd reprint edition, McGraw Hill Education Pvt Ltd.
10. Solid State Chemistry and its Applications by Anthony R. West, John Wiley and Sons.
11. Solid State Chemistry: An Introduction by Lesley E. Smart and Elaine A. Moore, 3rd edition, CRC Press(24 June 2005).
12. Fundamental concepts of Inorganic Chemistry by A. K. Das, volume 1 to 7.
13. Essentials of Nuclear Chemistry by H.J. Arnikar, Eastern Wiley (1990).
14. Nuclear Chemistry by U.N. Dash, Sultan Chand and Sons (1991).
15. Nuclear Chemistry by Friedlander and Kennedy, John Wiley and Sons (1987)

CHIPr-2.6: INORGANIC CHEMISTRY PRACTICAL-II

Duration: 4 h/ week & Total: 64 h **Credits : 2**

Part A. Qualitative analysis:

Qualitative analysis of at least FIVE ternary mixtures containing one rare cation and one interfering anion.

Part B. Preparation of complexes:

01. $K_3[Al(C_2O_4)_3]$ $3H_2O$ & $[Cu(thiourea)_3]_2$ SO_4. H_2O
02. Estimation of Copper in tristhiourea copper (I) sulphate by Iodometric method

REFERENCES:

1. Practical Inorganic Chemistry by Shikha Gulati, JL Sharma and Shagun Manocha, CBS Publication.
2. Vogel's Qualitative Analysis, Seventh edition, by Svehla G, Pearson India.
3. Inorganic qualitative analysis in the Laboratory, 1st edition, by Clyde Metz, Academic Press.
4. W. L. Jolly, Modern Inorganic Chemistry, McGraw, Hill Co., 1984.
5. M. Day and J. Selbin, Theoretical Inorganic Chemistry, 2nd edition, Von. Nostrand, 1980.
6. H. J. Emeleus and J. J. Anderson, Modern Aspects of Inorganic Chemistry, Von. Nostrand, 1962.

CHOT-2.2: ORGANIC CHEMISTRY-II

Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT-I **16 h**

NAMED REACTIONS

C-C bond forming reactions: Aldol condensation, Dickmann condensation, Stobbe condensation, Micheal addition, Perkin reaction, Reimer-Tiemann reaction, Reformtsky reaction, Wittig reaction, Mannich reaction, Shapario reaction.

C-N bond forming reactions: Chichibabin reaction, Barton reaction, Hofmann-Loffler-Freytag reaction, Stork enamine reaction.

C-O bond forming reactions: Sharpless asymmetric epoxidation, Bayer-Villeger reaction.

C-Cl bond forming reaction: Hell-Volhard-Zelinski reaction.

Self study(SS): Basic of reaction mechanisms, addition, substitution and rearrangement reactions. Stereochemistry.

Skill components:Aldol condensation, Michel addition & HVZ reaction products are analyzed by spectroscopic (FT-IR, UV-Vis and NMR spectroscopy) available from online sources.

UNIT-II **16 h**

OXIDATION AND REDUCTION REACTIONS

Oxidation reactions: Introduction,Oxidation reactions examples and applications of chromium series-$K_2Cr_2O_7$, PDC, PCC, Sorret and Jones reagents. Manganese compounds-$KMnO_4$, MnO_2.

Oxidation reactions involving ozone, peracids, lead tetraacetatate, periodic acid, osmanium tetroxide, selenium dioxide, Oppenauer oxidation.

Reduction reactions: Introduction, Catalytic hydrogenation-both heterogeneous (examples Nickel and palladium) and homogeneous, metal hydride reductions (NaBH4 and LiAlH4), reduction with dissolved metal, diimide reduction, Clemmensen, Wolf Kishner, Meerwin-Varley-Ponndorf reduction, Leukart reaction and reductions with diborane.

Self study(SS):Basics of oxidation and reduction, calculation of oxidation number, oxidizing and reducing agents with examples.

Skill components(SC):Oxidizing and reducing agents are identified with model reaction (two examples), and monitor reaction using TLC, UV-Vis and FT-IR.

UNIT –III **16 h**

REARRANGEMENT REACTIONS

Classification and general mechanistic treatment of nucleophilic, electrophilic and free radical rearrangements.

Rearrangement reactions involving migration to electron deficient carbon: Wolf, Wagner-Meerwein, Pinacol-pinacolone and Benzil-benzilic acid rearrangement.

Rearrangement reactions involving migration to electron rich carbon: Favorskii, Sommlet-Houser, Naber and Steven rearrangement.
Rearrangement reactions involving migration to electron deficient nitrogen: Hoffmann, Lossen, Curtius, Schmidt, Beckmann rearrangement.
Rearrangement reactions involving migration to electron deficient oxygen: Dakin, Bayer- Villiger and Hydroperoxide rearrangement.

Self study: Basics of rearrangement, nucleophiles, electrophiles and free radicals with examples, migration and rearrangement of atoms, electron rich and electron deficient atoms.
Skill components(SC):Students need to give one nucleophilic, electrophilic & free radical rearrangement reactions with suitable examples, analyzereactants and products using spectral data (record/online source).

UNIT-IV **16 h**

HETEROCYCLIC COMPOUNDS

Nomenclature of heterocyclic compounds-Hantz-Wiedamann system.
Synthesis and reactions of
3-Membered heterocyclic compounds – aziridines, azirines, oxiranes, oxirenes and thiiranes.
4-Membered heterocyclic compounds with one and two hetero atoms – azitidines, oxetanes and thietanes
6-Membered heterocyclic compounds with one and two hetero atoms – pyridine, pyrimidine, quinoline.
7-Membered heterocyclic compounds – azepines, oxepines, thiepines.

Self study(SS): Basics of heterocyclic compounds, nomenclature and examples, aromatic, non-aromatic and anti-aromatic compounds.
Skill components(SC):List out each heterocyclic ring contain drug molecule (one each) and give its biological applications with mechanism/mode of action.

REFERENCE BOOKS:

01. Understanding organic reaction mechanisms, A. Jacob, Cambridge Univ. Press, 1997.
02. Introduction to organic chemistry A. Streitweiser, Jr and C. H. Heathcock, Macmillan, 1985.
03. Physical and mechanistic organic chemistry, R.A.Y. Jones, 1st Edn. Cambridge Univ. Press, 1979.
04. Mechanisms of molecular migrations, Vols I and II, B. S. Thiagarajan, 1st Edn. Pergamon Press, Oxford, 1979.
05. P. J. Garratt in Comprehensive organic chemistry, D. Barton and W. D. Ollis, 1st Edn. Pergamon Press, Oxford, 1979.
06. Radicals in organic synthesis, B. Giese, Pergamon Press, 1986.

07. Stereoelectronic effects in organic chemistry, P. Deslongchamps, 1st Edn. Pergamon Press, 1983.
08. Organic photochemistry, J. M. Coxon and B. Halton, 1st Edn, Cambridge Univ. Press, London, 1974.
09. Molecular reactions and photochemistry, C. H. Deputy and D. S. Chapman, 1st Edn. Prentice-hall India, New Delhi, 1972.
10. Stereochemistry of carbon compounds, E. L. Eliel, S. H. Wilen and L. N. Mander, John Wiley & Sons, 1994.
11. Stereochemistry, Potapov, MIR, Moscow, 1984.
12. Stereochemistry, D Nasipuri, New Age Int, 1999.
13. Advanced organic chemistry, J. March, 4th Edn. John Wiley, 2008.
14. Organic Chemistry, R. E. Ireland Prentice-Hall India, New Delhi, 1975.
15. Some modern methods of Organic Synthesis, W. Caruthers, Cambridge Uni. Press London, 2nd Edn. 1998.
16. Stereochemistry of organic compounds- Principle and applications, D. Nasipuri, 2nd Edn., New Age International Publishers, 2001.

CHOPr-2.7: ORGANIC CHEMISTRY PRACTICAL-II

Duration: 4 h/ week & Total: 64 h **Credits : 2**

PART-A
ANALYSIS OF BINARY ORGANIC MIXTURE
Systematic qualitative analysis of binary mixture (solid+solid, solid+ liquid)
Chemical equations to be discussed for all tests.

PART-B
Fractional crystallization: Separation of mixture of naphthalene and biphenyl.
Fractional distillation: Separation of Mixture of benzene and toluene.
Thin layer chromatography: Separation of plant pigments.
Column chromatography: Separation of mixture of O & P-nitroanilines.

NOTE: Only experiments in PART-A are to be given in Practical Examination.

REFERENCES

01. Vogel's Text Book of Practical Organic Chemistry, 5th Edition by Brian S.Furniss, Antony J. Hannaford, Peter W.G. Smith and Austin R. Tatchell, John Wiley & Sons, New York.
02. Advanced Practical Organic Chemistry by N.K. Vishnoi, Vikas, Publishing House, 1979.
03. A Handbook of Organic Analysis Qualitative and Quantitative, 4th Edition by Hans Thacher Clarke, CBS Publishers.
04. Advance Practical Organic Chemistry by O.P. Agrawal, Krishnna Prakashan Media (P) Ltd, 2014.
05. Practical Organic Chemistry 4th Edition, by F G Mann and B C Saunders, Pearson India.

CHPT-2.3: PHYSICAL CHEMISTRY-II

Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT-I **16 h**

QUANTUM CHEMISTRY-II

One dimensional simple harmonic oscillator in classical mechanics and quantum mechanics, wave functions of the harmonic oscillators, the applications of Schrödinger's equations to the H atom derivation (separation of R, θ, φ equations and their solutions). Quantum number and their characteristics. Approximate methods in quantum mechanics, variations method, linear and non linear variation functions, application to the He atom, ant symmetric and asymmetric exclusion principle, Slater's determination wave functions, Morse Potential Curve, terms symbols and spectroscopic status. Hydrogen like wave functions, angular and radial wave functions and its application to hydrogen atom, general equation and general determination, application of variation method to hydrogen molecule, ion and normal and degenerate states, Orbital diagram need for variation methods. Perturbation theory, first and second order perturbation theory and its application to linear harmonic oscillator.

Self study (SS): Study history of quantum mechanics, overview of Electronic structure of the molecule, VBT, MOT and Density functional theory.

Skill Component (SC): Brief explanation and experimental results on Density Functional Theory (DFT).

UNIT-II **6 h**

STATISTICAL THERMODYNAMICS-II

Statistical thermodynamics: Introduction to statistical thermodynamics, energy states, quantum mechanical and statistical aspects, unit cells, microscopic state and macroscopic state, phase space, system, assembly and ensemble, use of ensemble, microcononical ensemble, canonical ensemble, probability, thermodynamic probability, molecular basis of residual entropy.

Classical statistics, Sterling's approximation, Maxwell Boltzmann distribution law and its applications. Bose-Einstein statistics, Fermi-direc statistics and their comparisons. Derive the relationship between entropy and thermodynamic probability, partition function, thermodynamic functions in terms of partition function (energy, heat capacity, entropy, Gibb's free energy, enthalpy Helmholtz free energy). Evaluation of different types of partition function. i) Translational partition function. Ii) Rotational partition function for diatomic molecule iii) vibrational partition function for diatomic molecule ,electronic partition function iv) nuclear partition function, separation of partition function, residual entropy (problems to be solved).

Self study(SS): Principles of Mechanics and ensembles, Fundamental postulates of Statistical thermodynamics and Applications.

Skill Component(SC): Plotting of radial wave functions using origin software

UNIT-III **16 h**

CHEMICAL KINETICS: Complex reactions: Kinetics of parallel, consecutive and reversible reactions. Chain reactions: Branched chain reactions, general rate expression, Auto catalytic reactions (Hydrogen-Oxygen reaction), oscillatory reactions and explosion limits. Theories of reaction rates: Collision theory and its limitations, Activated complex theory (postulates -derivation) and its applications to reactions in solution. Energy of activation, other activation parameters - determinations and their significance. Lindemann theory, Hinshelwood's theory of unimolecular reactions. Potential energy surfaces: Features and construction, theoretical calculations of Ea.

Reactions in solution: Ionic reactions - salt effects, effect of dielectric constant (single and double sphere models). Effect of pressure, volume and entropy change on the rates of reactions. Cage effect with an example. Fast reactions- Introduction, study of fast reactions by continuous and stopped flow techniques, relaxation methods (T-jump and P-jump methods), flash photolysis, pulse and shock tube methods.

Self study(SS): Study of rate of reaction(Average and instantaneous), Factors effecting rate of reaction.

Skill Component: Kinetics Studies of the Bleaching of Food Dyes.

UNIT-IV **16 h**

PHOTOCHEMISTRY AND PHOTODEGRADATION

PHOTOCHEMISTRY: Electronic transitions in molecules, The Franck-Condon principle, electronically excited molecules - singlet and triplet states. Life times of excited states of atoms and molecules. Quantum yield and its determination. Actinometry – ferrioxalate, uranyl oxalate, MGL and Reinekke's salt actinometers.

A review of laws of photochemistry –Grottus-Draper law, Beer-Lambert law, Stark-Einstein law. Photo physical processes – kinetics of unimolecular reactions, experiments in photochemistry, photo properties - fluorescence, phosphorescence, chemiluminescence. Delayed fluorescence – E-type and P-type. State diagrams, Stern-Volmer equation (to be derived), lasers in photochemical kinetic studies, photo electrochemistry, solar energy conversion and storage.

Photochemical processes – types of photochemical reactions – electron transfer, photo dissociation, oxidation and isomerization reactions with examples. Photosensitization. Flash photolysis.

PHOTODEGRADATION: Photocatalyst – ZnO, TiO_2, solar cells, principle, application of ZnO/TiO_2 in the photo degradation of dyes (IC), pesticides (DDT) and in industrial effluents. Nature of dyes used in Dye-sensitized solar cells.

Self study (SS): Mechanistic background of photochemistry, Chemistry of Electronically excited states.

Skill Component: Degradation of Methylene blue using ZnO or TiO_2 nano semiconductors.

REFERENCE BOOKS:

01. Statistical themodynamics by B.C. Meclelland, Chapman and Hall, London (1973).

02. Text book of Physical Chemistry by Samuel Glasstone, MacMillan Indian Ltd., 2nd edition, (1974).
03. Thermodynamics by Rajaram and Kunakose, East West, Nagin Cx,Dehli,1986.
04. An introduction to Chemical Thermodynamics by R.P.Rastogi and S.S.Misra,Vikash,Delhi,1978.
05. Introductory Quantum Mechanics by Atkins, Claredon, Oxford publication.
06. Quantum chemistry by Kauzman, Academic Press,1957.
07. Quantum chemistry by R.K.Prasad ,2nd Edition, New Age Int-2000.
08. Physical chemistry by Atkins, ELRS 1982.
09. Physical chemistry by Moore, Orient Longman,1972.
10. Quantum Chemistry by Eyring, Walter and Kimball, John Wiley and Sons, Inc., New York.
11. Theoretical Chemistry by S. Glasstone, East West Press, New Delhi, (1973).
12. Modern Molecular Photochemistry by Turro, N.J. (1991), Sausalito, University Science.
13. Photochemistry by Wayne, C.E., Wayne, R.P. (1996), Oxford University Press.

CHPPr-2.8: PHYSICAL CHEMISTRY PRACTICALS-II

Duration: 4 h/ week & Total: 64 h **Credits : 2**

Chemical Kinetics

a. Determine the specific reaction rate of potassium persulphate-iodide reaction by initial rate method.
b. Study the kinetics of the iodination of acetone in the presence of acid by initial rate method.
c. Study the acid catalyzed inversion of cane sugar and find out: (i) the order with respect to sucrose, (ii)the rate constant, (iii)compare kinetically strength of two acids(HCL and H_2SO_4).
d. Study of kinetics of autocatalytic reaction between KMnO4 versus oxalic acid.
e. Evaluation of Arrehenius parameter for the reaction between $K_2S_2O_8$ versus KI (first order)

pH metery:

a. Determination of degree of hydrolysis of aniline hydrochloride at room temperature and calculation of dissociation constant of the base by pH meter.
b. Determination of pH of acetic acid with sodium acetate buffer by pH meter.
c. Determination of pH of formic acid with sodium formate buffer by pH meter.

Colorimetric:

a. Determination of dissociation constant of a given indicator by colorimetric method.
b. Verification of Beers lamberts law by colarimetric method and calculation of molar extinction co-efficient (molar absorption co-efficient)
c. To construct the calibration curve Fe^{2+}-KCNS and Cu^{2+}-NH_3 systems and estimate the amount of respective salt present in a given solution by colarimetrically

REFERENCE BOOKS:

1 Selected Experiments in Physical Chemistry by D. A. Jenkins, G. R. H. Jones, and Joseph Lionel Latham, Butterworths (1964) publisher.
2 Experiments in Physical Chemistry by David P. Shoemaker, Carl W. Garland, Joseph W. Nibler, McGraw-Hill Inc.,US; 5th Revised edition edition (1 October 1988)
3 Advanced Physico-Chemical Experiments by J.Rose, John Wiley, & Sons New York (1964).
4 Experimental Inorganic/Physical Chemistry, 1st Edition by Mounir A. Malati, Woodhead Publishing house 1999.
5 Quantitative Chemical Analysis, 7th edition by Daniel C. Harris, W. H. Freeman; (May 19, 2006).
6 Spectrophotometric determination of elements by Zygmunt Marczenko, E. Horwood, 1976.
7 Spectrophotometric determination of elements by Ellis Horwood Series in Analytical Chemistry, Prentice Hall Europe (a Pearson Education company); First Edition edition (February 1, 1976)

CHGT-2.4: SPECTROSCOPY-II

Teaching: 2 h/ week & Credits : 2 **Total: 32 h**

UNIT–I **16 h**

NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY

Magnetic properties of nuclei (magnetic moment, g factor, nuclear spin), effectof external magnetic field on spinning nuclei, Larmor precessional frequency, resonance conditions, population of nuclear magnetic energy levels, relaxation processes, relaxation time, line width and other factors affecting line width.

Chemical shift, reference standards employed in NMR, factors influencing chemical shift-electronegativity(shielding and deshielding), anisotropic effect, vander Walls deshielding, effect of restricted rotation, H-bonding.

Nature of protons bonded to carbon and other nuclei, Proon integrals, spin-spin coupling-coupling constant, types of coupling, Karplus equations-variation of coupling constants with dihedral angle.

Instrumentation-Frequency sweep instruments, field sweep instruments and pulsed FT-NMR instruments, Chemical equivalence and magnetic equivalence, proton exchange reactions.

First order spectra, non first order spectra, simplification of complex spectra-increasing magneticfield strength, double resonance, deuterium exchange reactions, and lanthanide shift reagents. Nuclear Overhauser Effect (NOE), variable temperature probe.

^{13}C-NMR Spectroscopy: Comparison of ^{1}H-NMR and ^{13}C-NMR, proton decoupling or noise decoupling or broad band decoupling, chemical shift positions of carbon atoms in organic molecules.

Two dimensional NMR Spectroscopy: COSY, NOESY, DEPT Spectra and MRI.

Self study (SS): Basic of spectroscopy, Electromagnetic radiation, nuclear spin, NMR solvent, theory of NMR.

Skill component (SC): Download NMR spectra of simple molecules: C_2H_5OH, CH_3-CO-CH_3, C_6H_6, CH_3OH and $CH_3CH_2CH_2OH$, analyse ^{1}H, ^{13}C and 2D NMR data.

UNIT–II **16 h**

MASS SPECTROMETRY

Introduction, basic theory, instrumentation-single focusing, double focusing, quadrupole mass filter, TOF instruments. Methods of generation of positively charged ions-electron impact ionization, chemical ionization, fast atom bombardment(FAB), matrix assisted laser desorption ionization.

Resolving power, base peak, molecular ion peak, meta stable peak, isotopic peaks-calculation of percentage intensity of (m+1) and (m+2) peaks.Exact molecular mass, molecular formula, hydrogen deficiency index, preliminary analysis of structure.

Modes of fragmentation- fragmentation rules, McLafferty rearrangement, retro Diels-Alder reaction, ortho effect, fragmentation of following class of organic compounds – alkanes, alkenes, alcohols, aldehydes, ketones, carboxylic acids, amino compounds.

Combined applications of spectroscopic techniques

Combined applications of IR, UV-Visible, ^{1}H NMR, ^{13}C NMR and Mass spectrometry in the structural elucidation of organic compounds.
01. Structure analysis when spectral data of the organic compound is given
02. Structure analysis when spectra of organic compound are given

Self study (SS): Origin of mass spectrometry, ionization, principle, types of detector.
Skill component (SC): Download some six simple different functional group contain compounds and analyse fragmentation pattern and justify how this help for structure elucidation of new compounds.

REFERENCE BOOKS:

01. Fundamentals of Molecular Spectroscopy, C. N. Banwell and E. M. McCash. 4th edition, Tata McGraw-Hill, New Delhi.
02. Introduction to Molecular Spectroscopy by G. M. Barrow, McGraw-Hill, New York.
03. Introduction to Spectroscopy by Pavia, Lampman and Kriz, 3rd edition, Thomson.
04. Spectroscopy by B. P. Straughan and S. Walker, John Wiley & Sons Inc., New York, Vol. 1 & 2, 1976.
05. Vibration Spectroscopy Theory and Applications by D. N. Satyanarayana, New age International, New Delhi.
06. Organic Spectroscopy by William Kemp, 3rd edition, Palgrava, 1991.
07. Optical Method of Analysis by E. D. Olsen, McGraw Hill Inc, 1975.
08. Spectroscopy of organic compounds by P. S. Kalasi, Wiley Eastern Ltd, India 1993.
09. Introduction to instrumental analysis by R. D. Braun, McGraw Hill Book company 1982.
10. Physical methods in inorganic chemistry byj R. Drago, East West Pvt. Ltd, 1968.
11. Instrumental methods of chemical analysis by Gurdeep Chatwal and Anand.
12. Organic Spectroscopy, 2nd edition by Jag Mohan, Narosa Publishing House New Delhi.
13. Infrared and Raman Spectra of Inorganic and Coordination Compounds, Part A: Theory and Applications in Inorganic Chemistry, 6th Edition, by K. Nakamoto, John Wiley and Sons, Jan 2009.

[OPEN ELECTIVE]

CHEG-2.5: CHEMISTRY FOR EVERY DAY LIFE

Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT-I **16 h**

POLLUTION

Air pollution: Air pollutants, prevention and control, green house gases and acid rain, ozone hole and CFC's, photochemical smog and PAN, catalytic converters for mobile sources, Bhopal gas tragedy.

Hydrologic cycle, sources, criteria and standards of water quality-safe drinking water, public health significance and measurement of water quality parameters-(colour, turbidity, total solids, acidity, alkalinity, hardness, sulphate, fluoride, phosphate, nitrite, nitrate, BOD and COD), water purification for drinking and industrial purposes.

Toxic chemicals in the environment.

Detergents- pollution aspects, eutrophication. Pesticides and insecticides- pollution aspects, heavy metal pollution, solid pollutants -treatment and disposal, treatment of industrial liquid wastes. Sewage and industrial effluent treatment.

Oils and fats: Composition of edible oils, detection of purity, rancidity of fats and oil, estimation of rancidity, tests for common edible oils Tests for adulterants like aregemone oil and mineral oils.

UNIT-II **16 h**

INDUSTRIAL CHEMISTRY

Composition of soil - inorganic and organic components in soil- micro and macro nutrients.

Fertilizers: Classification of Fertilizers- straight fertilizers, compound/complex fertilizers, fertilizer mixtures, manufacture and general properties of fertilizer products-Urea and DAP.

Ceramics: general properties, porous and non-porous wares, Manufacturing process, extrusion, turning, drying, decoration, Porcelain and china.

Cement: Types, manufacture, additives, setting, properties & testing of cement.

Glass: Manufacture, properties, shaping of sheets & plate glasses. Annealing, finishing. special glasses.

Paints and Pigments: White pigments (white lead, ZnO, lithopone, titanium dioxide), blue, red, yellow and green pigments. paints and distempers, requirements of a good paint, emulsion, latex, luminescent paints, fire retardant paints, varnishes, enamels, lacquers, solvents and thinners.

UNIT-III **16 h**

BIOORGANIC COMPOUNDS

Carbohydrates: Chemistry of important derivatives of monosaccharides - ethers, esters, acetals, ketals, deoxysugars and aminosugars.

Vitamins: Classification and Nomenclature. Source and deficiency diseases, biological functions of Vitamins- Vitamin A_2, Vitamin B, Vitamin C, Vitamin D & Vitamin K.

Food Analysis: Dairy products- composition of milk and milk products, analysis of fat content, minerals in milk and butter, Estimation of added water in milk.

Beverages: Analysis of caffeine in coffee and tea, detection of chicory in coffee, chloral hydrate in toddy, estimation of methyl alcohol in alcoholic beverages.

Food additives, adulterants and contaminants- Food preservatives like benzoates, propionates, sorbates, bisulphites, artificial sweeteners like saccharin, dulcin and sodium cyclamate.

Flavours: vanillin, esters (fruit flavours) and monosodium glutamate. Artificial food colourants - coal tar dyes and non-permitted colours and metallic salts. Pesticide residues in food.

Drugs: Classification and nomenclature. Analgesics - aspirin, paracetamol; Anthelmentics – mebendazole, Antiallergics - chloropheneramine malleate.

Antibiotics: Pencillin, chloromycetin and streptomycin.

UNIT-IV **16 h**

INDUSTRIAL ORGANIC CHEMISTRY

Chemical energy systems and limitations, principles and applications of primary and secondary batteries and fuel cells, Basics of solar energy, Energy storage devices, Polymers in everyday life: from buckets to rockets: types and classification of polymers, source and general characteristics of natural and synthetic polymers, typical examples of polymers

Corrosion: Types and prevention, corrosion failure and analysis.

REFERENCE BOOKS:

01. Introduction to Industrial Chemistry by B.K. Sharma, Goel Publishing, Meerut(1998).
02. Medicinal Chemistry, Revised Edition by Asthoush Kar, New Age International, 2005.
03. Drugs and Pharmaceutical Sciences Series, Marcel Dekker, Vol.II, INC, New York.
04. Chemical Analysis of Foods by H.E. Cox, Pearson.
05. Foods – Facts and Principles by N. Shakuntala Many and S. Swamy, 4th ed. New Age International (1998).
06. Physical Chemistry by P. Atkins and J. de Paula 7th Ed. 2002, Oxford University Press
07. Handbook on Fertilizer Technology by Swaminathan and Goswamy, 6th ed. 2001, FAI.
08. Organic Chemistry by I. L. Finar, Vol. 1 & 2, Pearson Education India; 6 edition (2002).
09. Polymer Science and Technology by J. R. Fried, Pearson Prentice Hall; 3 edition (24 June 2014).

M.Sc. in CHEMISTRY @ RCU

III SEMESTER

CHIT- 3.1: INORGANIC CHEMISTRY-III

Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT–I 16 h

ELECTRONIC SPECTRA OF TRANSITION METAL COMPLEXES

Microstates, R-S coupling, term symbols for d^n ions, spectroscopic ground states, types of electronic spectra, selection rules for the electronic transitions, relaxation of the selection rules, nature of spectral bands, effect of spin-orbit coupling, effect of distortion and reduction in symmetry, Orgel diagrams, limitations of Orgel diagrams, Tanabe-Sugano diagrams, characteristics of the T-S diagrams, Racah parameters, interpretation of spectra of octahedral, tetrahedral, calculation of nephelauxetic parameter.

Charge transfer bands: origin, types and characteristics, intervalence charge-transfer bands.

Self study: Prepare the chart for term symbols for d^n ions.

Skill component: Record the electronic spectra of transition metal complex (d^4 or d^7) and assign the bands.

UNIT–II 16 h

ORGANOMETALLIC CHEMISTRY-I

Classification of organometallic compounds, the 16 and 18 electron rule, synthesis, structure and bonding in metal alkyl (Li, Mg and Al) and reactions of Grignard's reagents.

Chemistry of organometallic compounds with π - bonding ligands: Synthesis, Structure, Spectroscopy, Reactions and bonding in metal – carbon π - bonded systems involving dihapto to hexahapto ligands viz, Olefins (Zeise's salt), allylic moieties, butadienes, cyclobutadienes and cyclopentadienes.

Fluxional behavior of organometallic compounds.

Homogeneous and heterogeneous catalysis: oxidative additions, reductive elimination, insertion and deinsertion reactions, hydrogenation, hydroformylation, isomerisation, carboxylation and polymerisation, water gas shift reaction.

Self study: Recent advance in fluxional behavior of organometallic compounds

Skill component: Preparation of any organometallic compound using Grignard's reagent.

See catalysis notes

UNIT–III 16 h

BIO INORGANIC CHEMISTRY: METAL STORAGE AND TRANSPORT

Metal storage and transport of Fe, Zn, Cu, V, Mo, Co, Ni and Mn ions in living organism, iron proteins involved in transport and storage of iron (ferritin, hemosiderin, transferritin), copper proteins involved in transport and storage of copper (Ceruloplasmin serum albumin).

Electron transfer proteins - general features of iron sulfur proteins, Rubredoxin, Ferredoxins (2Fe-ferredoxin, Rieske proteins).
Blue-copper proteins: General features and types of blue copper proteins and their functions.
Cytochromes: structural features, classification and functions of cytochromes. Biological nitrogen fixation, *In vivo* and *in vitro* nitrogen fixation, Interactions of transition metal complexes with DNA.
Self study: Recent advances in electron transfer Fe-S proteins.
Skill component: Synthesis and characterization of metallo protein/ metallo enzyme /amino acid based metal complex.

UNIT–IV **16 h**

BIO INORGANIC CHEMISTRY: METAL IONS IN BIOLOGICAL SYSTEMS

Essential and trace elements, biological functions of biometals, active transport of cations (Na and K pump), ionophores, different types of naturally occurring ionophores.
Metalloenzymes: metalloproteins as enzymes – carboxy peptidase, catalases, peroxidases, cytochrome P450, superoxide dismutase, copper oxidases, vitamin B12 coenzyme, synthetic model compounds.
Metals in medicine- metal deficiency (Fe, Mn, Cu and Zn), chelation therapy and metal complexes as drugs.
Chlorophyll and its role in photosynthesis: Transport and storage of dioxygen- heme proteins, oxygen uptake, functions of haemoglobin, myoglobin, hemerythrin and hemocyanins, synthetic oxygen carriers.

Self study: Role of Chemistry in Biological systems, Functions of various metallo enzymes.
Skill component: Determination of metals in commercially available vitamin Tablets and /or preparation of salen-cobalt(II) complex and its oxygen scavenging activity.

REFERENCE BOOKS:

01. Inorganic Chemistry: Principles, structure and reactivity, 4th edition (January 17, 1997) by J.E. Huheey, E A.Keiter and R L. Keiter, Prentice Hall Publication.
02. Inorganic Chemistry, 3rd edition by C. E. Housecroft and A. G. Sharpe, Pearson, India.
03. Physical-Inorganic Chemistry; A coordination Approach by S. F. A. Kettle, 1996, Springer-Verlag Berlin Heidelberg publisher.
04. Inorganic Chemistry by Purcel and Kotz.
05. Inorganic Chemistry : A Unified Approach, 2nd Edition, by W. W. Porterfield, Academic Press (12 April 2013).
06. Concepts and Models of Inorganic chemistry, 3rd Edition by B E.Douglass, J J.Alexander and D H.Mcdaniel, John Wiley & Sons (5 May 1994).
07. Advanced Inorganic Chemistry, 5th Edition by F. ALBERT COTTON, SIR GEOFFREY WILKINSON, CARLOS A. MURILLO, MANFRED BOCHMANN, Wiley and Sons Ltd.

08. Inorganic Chemistry, 5th Edition by Donald Arthur Tarr and Gary L. Miessler, University Science Books, (1990).
09. Fundamental concepts of Inorganic Chemistry, 2nd edition by A. K. Das, volume 1 to 7, CBS publication (2019).
10. Electronic spectroscopy by D. N. Sathyanarayana, University Press, (2001).
11. Electronic Spectroscopy by A. B. P. Lever, Elsevier Science Ltd (1 November 1968).
12. Elements of Magnetochemistry by A. Symal and R I. Dutta, East West Pvt Ltd.
13. Bioinorganic Chemistry by A. K. Das, Books & Allied Ltd (1 January 2013).
14. Bioinorganic Chemistry by Bertini, Gary, Lippard and Valentine, ACS publication, (1995).

CHIPr -3.6: INORGANIC CHEMISTRY PRACTICAL-III

Duration: 4 h/ week & Total: 64 h **Credits : 2**

PART-A Preparation of coordination compounds

01. Copper-glycine complex : cis and trans forms
02. Tris thiourea Copper (I) sulphate mono hydrate
03. Mercury tetrathiocyanatoCobaltate (II)
04. Tris ethylenediamine Ni(II) Chloride
05. Cis $[Co(en)_2Cl_2]$ Cl
06. Separation of optical isomers of $[Co(en)_3]^{3+}$

PART-B Characterization (Metal ion determination in above complexes

07. Copper by Iodometric method
08. Copper by Iodometric method
09. Nickel by gravimetric method
10. Cobalt volumetrically by EDTA method

PART-C Anion Estimation

11. SO_4^{2-} as Barium Sulphate (gravimetrically)
12. Cl^- by Silver nitrate (demonstration)
13. Interpretation of IR and NMR Spectra of
14. Tris (thiourea) Copper (I) sulphate
15. Cis $[Co(en)_2Cl_2]Cl$
16. $[Co(en)_3]^{3+}$

REFERENCE BOOKS:

1. INTEGRATED APPROACH TO COORDINATION CHEMISTRY AN INORGANIC LABORATORY GUIDE, Rosemary A. Marusak, Kate Doan, Scott D. Cummings, John Wiley & Sons, Inc., Publication.

2. Practical Inorganic Chemistry by Shikha Gulati, JL Sharma and Shagun Manocha, CBS Publication.
3. Vogel's Qualitative Analysis, Seventh edition, by Svehla G, Pearson India.
4. Inorganic qualitative analysis in the Laboratory, 1st edition, by Clyde Metz, Academic Press.
5. W. L. Jolly, Modern Inorganic Chemistry, McGraw, Hill Co., 1984.
6. M. Day and J. Selbin, Theoretical Inorganic Chemistry, 2nd edition, Von. Nostrand, 1980.
7. H. J. Emeleus and J. J. Anderson, Modern Aspects of Inorganic Chemistry, Von. Nostrand, 1962.
8. Synthesis and Technique in Inorganic Chemistry: A Laboratory Manual, Gregory S. Girolami, Thomas B. Rauchfuss and Robert J. Angelici. University Science Books.
9. Synthetic methods of organometallic and inorganic chemistry ed. by Wolfgang A. Herrmann, Georg Thieme Verlag, New York, 1997, Vol 7 and 8
10. Vogel's qualitative inorganic analysis, by Svehla, G. Publisher: Harlow : Longman, 1996.
11. Vogel's textbook of quantitative inorganic analysis: including elementary instrumental analysis. By: Arthur Israel Vogel; John Bassett Publisher: London; New York: Longman, 1978.

CHOT-3.2: ORGANIC CHEMISTRY-III

Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT –I **16 h**

REAGENTS IN ORGANIC SYNTHESIS

Use of the following reagents in organic synthesis and functional group transformation:

1. Gilmann reagent
2. Lithium diisopropyl amide (LDA)
3. Dicyclohexyl carbodimide (DCC)
4. 1,3-Dithiane (reactivity umpolung)
5. Trimethylsilyl iodide
6. Tri-n-butyl tin hydride (TNBH)
7. DDQ
8. Woodward-Prevost hydroxylation
9. Baker's Yeast
10. Phase transfer catalysts
11. Crown ethers
12. Peterson synthesis

Self study(SS): Basics of reagents, storage, handling, expire date. Basic of Crown ethers and Phase transfer catalyst.

Skill components(SC):Students need to list out hazardous and non-hazardous reagentsin the above 12 synthesis. Give model for storing safe and handling during reaction (gaggle, Fume hood and other safety measures)

UNIT –II **16 h**

PHOTOCHEMISTRY

Interaction of radiation with matter, types of excitation, rate of excited molecules, quenching, quantum efficiency, quantum yield, transfer of excitation energy, actinometry, singlet and triplet states, experimental methods in photochemistry of carbonyl compounds, and transition, Norrish type I and Norrish type II reactions Paterno–Buchi reaction, photoreduction, photochemistry of enones, hydrogen abstraction rearrangement of unsaturated ketones and cyclohexadienones, photochemistry of parabenzoquinones, photochemistry of aromatic compounds with reference to isomerization, addition and substitution, photochemical isomerization of cis and trans alkenes, photo-Fries rearrangement, Barton reaction, Hoffmann-Loefler-Freytag reaction, photochemistry of vision.

Self study(SS):Basics of photochemistry (PC), principle of PC, effect of photon on organic molecules.

Skill components(SC):Students select at least FOUR photoreaction products and analyse using different spectroscopic data (UV-Vis, FT-IR, NMR and mass spectrometry from online source).

UNIT –III **16 h**

PERICYCLIC REACTIONS

Pericyclic Reactions: Classification of pericyclic reactions, molecular orbital symmetry, frontier orbitals of ethylene, 1,3-butadiene, 1, 3, 5-hexatriene, allyl system, Woodward-Hoffman correlation diagram method and Perturbation of molecular

orbital (PMO) approach of pericyclic reaction under thermal and photochemical conditions, FMO and PMO approach to the following reactions.
Electrocyclic reactions- Con rotatory and dis rotatory ring closure 4n and 4n+2 and allylic systems, Woodward and Hoffmann selection rules for pericyclic reactions.
Cycloadditions reactions - Antrafacial and suprafacial additions, more emphasis on [2+2] and [4+2] Cycloadditions, Diels-Alder reaction, 1,3-dipolar cycloaddition reactions.
Sigmatropic rearrangements: Antrafacial and suprafacial shift involving carbon moieties, retention and inversion of configuration, Ene, Claisen and Cope reaction.

Self study(SS): Basics of pericyclic, elecctrocyclic and cycloaddition reactions. orbital shape, con-rotation and dis-rotation, stereochemistry.
Skill components(SC):Students need to prepare some models (ball & Stick) to show some of the selected reactions.

UNIT –IV **16 h**
MEDICINAL CHEMISTRY
Introduction, definition of drug, requirements of drugs, chemotherapy, pharmacokinetics, pharmacodynamics, metabolites and anti metabolites, prodrug and soft drugs, agonists and anti-agonists, concept of drug receptor, elementary treatment of drug receptor interactions, theories of drug activity-occupancy theory, rate theory, induced fit theory, classification of drugs.
Sulphonamides: Introduction, classification, synthesis and SAR studies of sulphathiazole, sulphanilamide, sulphadiazine.
Antimalarials: Introduction, classification, synthesis and drug action-Chloroquin and Pamaquin.
Analgesics: Introduction, classification, synthesis and drug action-Paraacetomol, aspirin, salol, phenyl butazone, antipyrine.
Anti-inflammatory: Introduction, classification, synthesis and drug action-Indomethacin and ibuprofen.

Self study(SS): Basics of drugs, chemotherapy, receptor, drug action and SAR studies.
Skill components(SC):Student need to list each class (four) one drug molecule, analyze using spectral data (UV-Vis, FT-IR and NMR)and list out pharmacological and pharmacodynamics data (online source).

REFERENCE BOOKS:

01. Organic synthesis by Jagadamba singh and L,D.S.Yadav , [ragati prakashan educational publishers .
02. Organic reaction mechanisms- V.K. Ahluwalia, R.K. Parashar, 4rt Edition, Narosa Publishing House, New Delhi, Chennai, Mumbai, Kolkata 2011.
03. Photochemistry and pericyclic reactions by Jagdamba Singh, Jaya singh 3rd edition, new age international publishers, 2009.

04. Photochemistry and pericyclic reactions by Jagdamba Singh, Jaya singh 4th edition, new age international publishers, 2012.
05. Fundamentals of photochemistry, K.K. Rohatgi- Mukherjee, 3rd edition new age international publishers, 2017.
06. Photochemistry and pericyclic reactions by V.Balzani, P.Ceroni and A.Juris, John. Wiley publishers , 1st edition, 2014.
07. Principles of Molecular Photochemistry- An introduction by N.J.Turro, V.Ramamurthy, J.C. Scaiano. published by University of science books, 2009.
08. Principles and applications of Photochemistry by Brian Wardle , published by John Wiley & sons , 2009.
09. Medicinal Chemistry- An introduction , Gareth Thomas , 2nd edition, John Wiley & sons publications , 2011.
10. Medicinal Chemistry by D.Sriram and P.Yogeeswari, Pearson education , India, 2009.
11. Burger's Medicinal Chemistry and Drug Discovery, Vols. 4, Edited by Donald.J. Abraham, 6th edition John Wiley publication, 2003
12. Foye's Principles of Medicinal Chemistry, 6th Edn., T. L. Lemke, Wolters Kluwer, Lippincott Williams and Wilkins, 2007
13. Medicinal Chemistry, Ashutosh Kar, revised and expanded 3 rd edition, New age international(P) limited, publishers, 2005.
14. An Introduction to Medicinal Chemistry, P Graham, 5th edition, OUP Oxford, 2013.
15. Medicinal Chemistry – G R Chatwal, Himalaya publishing house , New Delhi, 2012.
16. Wilson and Gisvold's Text Book of Organic Medicinal and Pharmaceutical chemistry, Edited by J .H Block , J .M Beale, Jr. published by Wolters Kluwer-Lippincott, Williams and Wilkins, 12th edition, 2011.
17. Goodman and Gilman's Pharmacological Basis of Therapeutics, by Laurence L.Brunton , John S. Lazo and Keith L.Parker , 11th Edition., Tata McGraw-Hill, 2005.
18. Photochemistry, Carol E Wayne and Richard P Wayne, Oxford University Press, (1996).
19. Organic Photochemistry, J. M. Cozen and B. Halton, Cambridge University Press (I Edition) 1974.
20. Molecular Reactions and Photochemistry, C H Deputy and D S Chapman, Prentice Hall India, New Delhi (1st Edition) , 1972.
21. Introduction to organic chemistry A. Streitweiser, Jr and C. H. Heathcock, Macmillan, 1985.
22. Radicals in organic synthesis, volume 5, by Bernd. Giese, Pergamon Press, 1986.

CHOPr-3.7: ORGANIC CHEMISTRY PRACTICAL-III

Duration: 4 h/ week & Total: 64 h **Credits : 2**

PART-A: **ORGANIC ESTIMATIONS**

01. Estimation of aniline
02. Determination of equivalent weight of acids by silver salt method.
03. Estimation of sugars by Fehling's method.
04. Determination of saponification value of oils.
05. Determination of iodine value of oils.
06. Determination of enol content by Meyer's method.

PART-B: MULTISTEP **ORGANIC PREPARATION**

01. Preparation of 2-bromo-3-phenyl propionic acid from cinnamic acid.
02. Preparation of anthralinic acid from phthalimide.
03. Preparation of p-chlorotoluene from p-toluidine.
04. Preparation of benzophenoneoxime and its rearrangement to benzanilide.

REFERENCES

01. Vogel's Text Book of Practical Organic Chemistry, Brian S , Furniss, Anthony j. Hannaford, 5th Edition, Pearson India, 2005.
02. Practical Organic Chemistry F.G. Mann, B.C Saunders, Fourth edition, Pearson India,2011.
03. Advanced Practical Organic Chemistry, N.K. Vishnoi, 2nd Vikas, Publishing House Pvt. LTD, 1996.
04. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis Renu Aggarwal, V. K. Ahluwalia, Universities press (India), 2001.
05. Systematic Laboratory Experiments in Organic Chemistry Arun Sethi, New Age International, 2003.
06. Comprehensive Practical Organic Chemistry: Qualitative Analysis Ahluwalia V.K. Sunitha Dhingra, First edition, Orient Longman, 2004
07. Practical Organic Chemistry: Qualitative Analysis Bhutani S.P. Chhikara A, First edition, ANE books-new Delhi, 2009
08. Laboratory techniques in Organic chemistry-V.K. Ahluwalia , Pooja Bhagat & Renu Aggarwal, I.K. International Publishing House Pvt.Ltd.
09. Laboratory Manual of Organic Chemistry Raj K. Bansal. 5th edition, New Age international, 2008.

CHPT-3.3: PHYSICAL CHEMISTRY-III

Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT–I **16 h**

SUPERCONDUCTORS AND MEGNETOCHEMISTRY

Semiconductors: Free carrier concentration in semiconductors, Fermi level and carrier concentration in semiconductors, effect of temperature on mobility, electrical conductivity of semiconductors, Hall effect in semiconductors, p-n junction.

Superconductors: Introduction, conventional super conductors, magnetic properties of superconductors, The Meissner effect, Thermodynamics of superconducting transitions, London equation, London penetration Depth, Normal tunnelling and Josephson effect, BCS theory of superconductors, cooper pair, theory of high temperature superconductors and applications.

Magnetochemistry: Introduction, types of substances, theory of paramagnetism, diamagnetism and ferromagnetism (langevin's and Weiss's theory). Measurements of magnetic susceptibility: Theory of susceptibility, Gouy, Bhatnagar-Mathur and Quincke's method and applications of magnetic susceptibilities.

Self-study(SS): Study about Insulators, Semiconductors & Conductors, Semiconductors types, Examples, Properties and Applications.

Skill Component: Preparation of ferrites and study of magnetic properties.

UNIT–II **16 h**

ATOMIC STRUCTURE AND ATOMIC SPECTRA: A brief history of atomic models drawbacks, Bohr theory of Hydrogen atom, Sommerfeld's relativistic atomic model,A wave mechanical concept of the atom. Characteristics of Quantum numbers, Vector atomic model. Brief explanation of doublet structure of alkali spectra (Li, Na and K) and compound doublets, Helium and alkaline earth spectra (Magnesium and Calcium), spark spectra and arc spectra. Moseley lines. Multiplet structure of line spectra, prohibition of inter combinations. Multiplicities and term symbols. Space quantization: Zeeman effect, normal and anomalous Zeeman effects, Paschen- Backeffect, Stark effect.

Self-study(SS): Study About Line spectra, Bohr Model, Applications of absorption and emission spectra.

Skill Component: Experimental studies of UV-Vis spectrophotometry

UNIT–III **16 h**

CATALYSIS

Difference between heterogeneous, homogeneous and bio-catalysis; Importance of heterogeneous and homogeneous catalysis in chemical reactions, characteristics of catalytic reactions and acid-base catalysis.

Theories of Catalysis: Boundary layer theory, Catalysis by semiconductors, Wolkenstein theory, Balanding's approach, electronic factors is catalysis by metals, molecular orbital approach.

Enzyme catalysis: Mechanism and kinetics of enzyme catalyzed reactions, the Michaelis-Menten equation, Effect of temperature on enzyme catalysis.

Heterogeneous catalysis: surface reactions, Kinetics of surface reactions, Unimolecular surface reactions, Bimolecular surface reactions, pH-dependence of rate constants of catalyzed reactions, Autocatalysis and oscillatory reactions.
Homogeneous Catalysis: Intermediate stages in homogenous Catalysis, energy profile diagram, general scheme for calculating kinetics of the reactions, decomposition of hydrogen peroxide, hydrogenation, hydroformulation, isomerization, wacker reaction, coupling reactions and asymmetric oxidations.
Self-study(SS): Characteristics of Catalytic reactions, Mechanism of Catalytic actions, Intermediate compound formation theory.
Skill Component: Shape selective catalysis by Zeolites, Practical demonstrations and paper presentations.

UNIT–IV **16 h**
SURFACE CHEMISTRY
Surface chemistry: Introduction, adsorption, isotherms(Gibbs, Frendlich,nand Langmuir), surface excess; BET isotherm, surface area, pore size and acid strength measurement.LB film, membrane equilibrium, micellisation, catalytic activity, surface active agent, Classification of surface active agent, Critical Micellar Concentration (CMC), Factor affecting the CMC of surfactants, hydrophobic interaction, thermodynamics of micellization-phase separation and mass action model, micro emulsion, reverse miceles. Thermodynamics of adsorption: interpretation of chemisorptions based on the structure and nature. Kinetic of surface reactions: rate determining step, various types of reactions, Applications of adsorption:-High vacuum, Gas marks, Softening of hard water, Drying gases, Decolorisation, Refining of petroleum and vegetable oils, Prevention of evaporation of water. In curing diseases, concentration of ores, Adsorption indicators.
Self-study(SS): Difference between surface reactions and chemical reactions, adsorption, types of Adsorption, Examples and Applications of adsorption in daily life.
Skill Component: X-ray diffraction studies of oxides.

REFERENCE BOOKS:

1. Introduction to Super Conductivity, Revised 2nd Edition by A C. Rose-Innes and E H. Rhoderick, Pergamon Press; (1978).
2. Superconductivity, 2nd Edition, by Charles P. Poole, H A Farach,R J Creswick & R Prozorov, Academic Press (August 9, 2007).
3. Superconductivity: Basics and Applications to Magnets, by R G Sharma, Springer; 2015 edition (February 26, 2015).
4. Superconductivity: Properties, Applications & New Developments, by Paulette Grant, Nova Science Pub Inc; UK ed. edition (December 15, 2015).
5. Heterogeneous catalysis and applications, by G.C. Bond, Oxford (1987).
6. Heterogeneous catalysis, by D. K. Chakraborty and B. Vishwanathan, New Age Int. (2008).
7. Heterogeneous catalysis, by J. M. Thomas and W.J. Thomas, VCH publication (1997).

8. E. R. Rideal, "Concept in Catalysis" Academic press (1968).
9. M. Beller, A. Renken and R. van Santen, "Catalysis", Wiley VCH (2012).
10. Chemical kinetics and catalysis, by G. Panchenov and V. Lebedev, Mir publication (1976).
11. Chemical Kinetics and Catalysis, by R. Van Santen and J. Niemantsvedict, Plenum Press (1995).
12. Practical surface analysis by AES & XPS, by D. Briggs and M. Seah, John Wiley (1983).
13. Atomic Spectra and Atomic Structure, 2nd edition by Gerhard Herzberg, Dover Publications; (August 19, 2010)
14. Atomic and Molecular Spectroscopy: Basic Aspects and Practical Applications, by Svanberg, Sune, Springer-Verlag Berlin Heidelberg.
15. Atomic Structure, by Colm T. Whelan, Morgan & Claypool Publishers, 2018.
16. Introduction to Surface Chemistry and Catalysis, 2nd Edition by Gabor A Somorjai & Yimin LiWiley-Blackwell (June 8 2010).

CHPPr-3.8: PHYSICAL CHEMISTRY PRACTICAL-III

Duration: 4 h/ week & Total: 64 h **Credits : 2**

01. Analysis of binary mixture of two miscible liquids by viscometry and the relation between viscosity of solution and electrical conductivity
02. To determine the percentage composition of unknown mixture of A and B liquids by Abbe's refractometer by graphical method
03. To determine the percentage composition of unknown mixture of A and B liquids by Abbe's refractometer by formula method.
04. Determination of parachor value for CH_2 groups by surface tension between two liquids 1) ethanol+propanol 2) ethanol+surfactant 3) propanol+surfactant.
05. To determine the step wise heat of neutralization of polybasic acid using thermoflask
06. Determine the concentration of Cu(II) and Fe(II) solution by photometric titration with EDTA
07. Determination of energy gap for semiconductor (Ge) and effect of temperature on semiconductor by four probe method.
08. Study of salt effect on solubility and determination of activity coefficient

Computational Methods:

1. Familiarity with word processing, Electronics spread sheets, Data processing, Mathematical packages, chemical structure drawing and molecular modeling.

Spectrophotometry:

1. Record the UV-spectra of a given compound, e.g. acetone in cyclohexane.
   a. Plot transmittance versus wavelength
   b. Plot absorbance versus wavelength
   c. Calculate the energy involved in the electronic transition in different units, i.e, cm^{-1}, J/mol, cal/mol and eV.

REFERENCE BOOKS:

1. Advanced Physico-Chemical Experiments–J.Rose,John Wiley, Newyork(1964).
2. Instrumental analysis manual - Modern Experiments for Laboratory – G.G. Guilbault and L.G. Hargis.
3. A Text Book of Quantitative Inorganic Analysis – A.I. Vogel, 5th edition.
4. Experimental Inorganic Chemistry – G. Palmer.
5. Experimental Inorganic/Physical Chemistry- Mounir A. Malati.
6. Quantitative Chemical Analysis – Daniel C. Harris, (2006) 7th edition.
7. Experimental physical chemistry, R. C. Das and B. Behera, Tata McGrawHill Publishing Company Limited, 1983.

8. Experimental Physical Chemistry, V. D. Athawale and Parul Mathur, New Age International (p) Limited, Publishers, New Delhi, 2001.
9. Experiments in Chemistry – D.V. Jahagirdar, Himalaya Publishing House, Bombay, (1994)

CHGT- 3.4: SPECTROSCOPY-III

Teaching: 2 h/ week & Credits : 2 **Total: 32 h**

UNIT–I **16 h**

ESR and Applications of IR Spectroscopy

Electron spin resonance (ESR) spectroscopy

Basic principle interaction between spin and magnetic field, origin of spectral line-intensity, width and position of spectral lines, relaxation process, multiplicity in ESR, hyperfine splitting, g-value and factor affecting. Rules for interaction of spectra, zero field splitting and Krammer's degeneracy, John-Teller distortion, isotropic and anisotropic coupling constants, nuclear quadrupole coupling interaction, spin hamitonium, ESR spectra of radical containing a single set of equivalent protons-methyl, parabezoquinone, cyclopentadienyl, benzene. ESR spectra of transition metal complexes, applications.

Applications of infra red spectroscopy to inorganic compounds

Infrared spectra of simple molecules and coordination compounds, changes in infrared spectra of donor molecules upon coordination (N,N-dimethylacetamide, urea, ammine, acetato, cyano and thiocyanato complexes), mono, di and trinuclear carbonyl complexes and nitrosyls complexes, change in spectra accompanying change in symmetry upon coordination (NO_3^-, SO_4^{2-}, NO_2^- and ClO_4^-), hydrogen bonding, instrumentation including FTIR.

Self study(SS): Basics of spins (Hunds rule, Aufbau principle), ESR, spectral line, magnetic field, diamagnetism and paramagnetism, degeneracy, rules for interaction of spectra.

Skill components(SC):Analyze some important inorganic compounds (two samples in each) FT-IR and ESR spectra from open source/record spectra .

UNIT–II **16 h**

NUCLEAR QUADRUPOLE RESONANCE and MOSSBAUER SPECTROSCOPY

Nuclear quadrupole resonance spectroscopy: Consequence of nuclear spin larger than ½, prolate and oblate nucleus, nuclear quadrapolar charge distribution-theory and instrumentation, relationship between electric field gradients and molecular structure, applications and interpretation of eQq data, effect of crystal lattice on the magnitude of eQq, structural information from NQR spectra.

Mossbauer spectroscopy: Theory and principles, experimental methods, isomer shift, quadrapole interactions, electron density, magnetic interactions; time and temperature dependent effect, application-Iodine trihalides, Prussian blue, trisiron dodecacarbonyl, tin halides, hexacyano ferrate and nitroprussides.

Self study(SS): Basic of NqR and Mossbauer, prolate and oblate nucleus, electric field, electric field gradient, crystal lattice, electron density.

Skill components(SC): Students need to prepare the model to show the working of Mossbauer spectroscopy experiment.Two complex sample Mossbauer spectra need to be analyzed from open source data.

REFERENCE BOOKS:

01. Electronic paramagnetic resonace spectroscopy by Pratik Bertand.
02. Principles and applications of ESR spectroscopy by Andrew Lund, Masaru Shoiotani and Shimada.
03. Electron spin resonance spectroscopy of organic radicals by Prof. Dr. Fabian Gerson, P.D. Dr. Walter Huber, by Wiley publishers India, 2003.
04. Electron spin resonance – Elementory theory and practical applications by John.E. Wertz and James R.Bolton. Spinger publishers.
05. Introduction to magnetic resonance spectroscopy ESR, NMR, NQR by D.N Sathyanarayana , I K Inernational publishing house Pvt. Ltd , 2009.
06. Fundamentals of Molecular Spectroscopy, C. N. Banwell and E. M. McCash. 4th edition, Tata McGraw-Hill, New Delhi.
07. Introduction to Spectroscopy. Pavia, Lampman , Kriz, Vyvyan 5th edition, cengage learning India private limited ,2015.
08. Vibration Spectroscopy Theory and Applications, D. N. Satyanarayana, New age International (P) Limited publishers New Delhi, reprint 2005.
09. Instrumental methods for chemists – Gurdeep Chatwal, Himalaya publication house , 2012.
10. Organic Spectroscopy, 1st and 2nd edition– Jag Mohan, Narosa Publishing House New Delhi.
11. Modern spectroscopy by J. Michael Hollas , published by John Wiley& sons, Ltd. 2004.
12. Elementory Organic spectroscopy – Principles and applications– by Y. R. Sharma, publishers- S.
13. Fundamentals of Molecular Spectroscopy, C. N. Banwell and E. M. McCash. 4th edition, Tata McGraw-Hill, India, New Delhi, 2017.

[OPEN ELECTIVE]

CHEG-3.5: ENVIRONMENTAL CHEMISTRY

Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT-I **16 h**

POLLUTION

Environmental segments, evolution of earth's atmosphere.

Air pollution: Air pollutants, prevention and control, green house gases and acid rain, carbon monoxide, industrial sources and transportation sources.

SO_x- sources, ambient concentration, test methods, control techniques - scrubbing, , limestone injection process. Ozone hole and CFC's, photochemical smog and PAN.

NO_x- sources, ambient concentration, test methods, thermodynamics and NO_x, control techniques.

Particulates: Size distribution, particulate collection - settling chambers, centrifugal separators, wet scrubbers, electrostatic precipitators & fabric filters, catalytic converters for mobile sources, Bhopal gas tragedy.

UNIT-II **16 h**

WATER POLLUTION

Hydrologic cycle, sources, chemistry of sea water, criteria and standards of water quality- safe drinking water, maximum contamination levels of inorganic and organic chemicals, radiological contaminants, turbidity, microbial contaminants, public health significance and measurement of colour, turbidity, total solids, acidity, alkalinity, hardness, chloride, residual chlorine, sulphate, fluoride, phosphate and different forms of nitrogen in natural and polluted water, chemical sources of taste and odour, treatment for their removal, sampling and monitoring techniques.

UNIT-III **16 h**

WATER ANALYSIS

Determination and significance of DO, BOD, COD and TOC, water purification for drinking and industrial purposes, disinfection techniques, demineralization, desalination processes and reverse osmosis.

Radioactive waste management, radionuclides in soil, effects of ionizing radiations-effect on ecosystem, accidents at atomic power plants-Chernobyl disaster, disposal of radioactive liquid wastes, methods of radiation protection.

UNIT-IV **16 h**

DETERGENTS, PESTICIDES and SOIL ANALYSIS

Toxic chemicals in the environment, impact of toxic chemicals on enzymes.

Detergents- pollution aspects, eutrophication.

Pesticides-pollution of surface water. Sewage and industrial effluent treatment, heavy metal pollution. Chemical speciation- biochemical effects of pesticides, insecticides, particulates, heavy metals (Hg, As, Pb, Se), carbon monoxide, nitrogen

oxides, sulphur oxides, hydrocarbon, particulates, ozone, cyanide and PAN. Solid pollutants and its treatment and disposal.

Composition of soil - Inorganic and organic components in soil, micro and macro nutrients, nitrogen and sulphur pathways, soil pollution: classification of pollutants and their characteristics, sources, prevention and control, sampling and monitoring techniques.

REFERENCES BOOKS:

01. A.K. De : Environmental Chemistry (Wiley Eastern).
02. S.K. Banerji : Environmental Chemistry (Prentice Hall India), 1993.
03. S.D. Faust and O.M. Aly : Chemistry of Water Treatment, (Butterworths), 1983.
04. G.D. Christian : Analytical Chemistry, (4th Ed.), (John Wiley)
05. Sawyer and McCarty, Chemistry for Environmental Engineering (McGraw Hill) 1978
06. I. Williams, Environmental Chemistry, John Wiley, 2001
07. S. M. Khopkar, Environmental Pollution Analysis, (Wiley Eastern).
08. J.W. Moore: Heavy Metals in Water, (Springer-Verlag), 1984.
09. C. Malcolm, K.Killham and Edwards: Soil Chemistry and its Applications, Cambridge (1993)
10. M. Raymond and J.C. Shickluna: Soils, 5th Ed. (Prentice Hall, India), 1987.

M.Sc. in CHEMISTRY @ RCU

IV SEMESTER

CHIT-4.1: INORGANIC CHEMISTRY-IV

Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT–I **16 h**

NON-TRANSITION, F-BLOCK ELEMENTS & CARBENES

Silicates: Types of silicates, Clay minerals and Zeolites

Phosphazenes: Synthesis of Cyclophosphazenes and polyphosphaznes. Reactions of Hexachlorocyclotriphosphazene and polyphospazne. Structural aspects of Hexachlorocyclotriphosphazene.

Sulphur-Nitrogen compounds: Synthesis, structure and reactivity of S_4N_4, $S_4N_4H_4$, S_2N_2 /and $(SN)_x$.

Carbenes: Singlet and triplet state, Fisher and Schrock carbenes, metal carbenes, reactivity of carbenes and metal carbenes.

Chemistry of f-block metals: f-orbitals and oxidation states, atom and ion sizes, spectroscopic and magnetic properties (Electronic spectra and magnetic moments of lanthanides, luminescence of lanthanide complexes, Electronic spectra and magnetic moments of actinides), inorganic compounds and coordination complexes of the lanthanides and uranium.

Self study: Synthesis and structural aspects of Uranium complexes.

Skill component: Collection of Montmorillonite (2:1 smectite) clay mineral from soil.

UNIT–II **16 h**

MATERIAL CHEMISTRY

Fuel Analysis: Definition and classification of fuels, characteristics of fuels, sampling, proximate and ultimate analysis of coal, and determination of calorific value. Liquid fuels: determination flash point, fire point, aniline point, knocking of petrol and diesel octane and cetene numbers, carbon residue.

Gaseous fuels: Analysis of coal gas, water gas, producer gas, gobar gas and blast furnace gas. Calorific value, determination of Junker's gas calorimeter. Relative merits of solid, liquid and gaseous fuels.

Explosives: TNT, RDX etc.

Metal hydrides and Carbides: Salt like, covalent and interstitial carbides, Metal hydrides relevant to hydrogen storage applications (NaH, $NaBH_4$, $LiAlH_4$ etc.)

Silicone polymers: Introduction, nature of chemical bonds containing silicon, general methods of preparation (fluids and resins) and properties of silicones. Applications, industrial uses of silicon, silicon carbide and silicon dioxide.

Self study: Chemical weapons and their impact on mass destruction – safety issues.

Skill component: Determination of calorific value of any suitable fuel or Preparation of silicone polymer.

UNIT–III **16 h**

SOLID STATE CHEMISTRY

Electrical properties of solids: Conductors, insulators, semiconductors. Measurements by DC and AC methods.

Ionic conductivity: Alkali halides- vacancy conduction in NaCl crystal, interstitial conduction in AgCl.

Li-ion battery – Electrode materials and working.

Solid electrolytes: β- Alumina, AgI and Ag+ ion solid electrolytes, anion conductors (Yttria stabilized zirconia), requirements for conductivity, Applications including solid oxide fuel cell.

Self study: Cathode materials used in Li-ion battery.

Skill component: Deduce the ionic conductivity of anion conductor (YSZ) from the Nyquist plot.

UNIT–IV **16 h**

MAGNETIC & OPTICAL PROPERTIES

Magnetic properties: Types of magnetic materials (magnetic ordering in Ferro,antiferro, dia, para and ferri). Magnetically concentrated compounds- ferro, antiferro and ferri magnetic, spin cross-over systems.

Magnetization vs. applied field(hysteresis loops), Effect of temperature, spin-only formula, orbital contribution, spin-orbit coupling.

Selected examples of magnetic materials (Fe_2O_3, Fe_3O_4), metal and alloys, transition metal oxides, spinels, garnets, ilemenites, perovskites, magneto plumbites.

Measurement of magnetic susceptibility – Gouy and Faraday methods, diamagnetic corrections. correlation of magnetic and structural properties, applications.

Optical properties: Luminescence and phosphors, configurational coordinate model, some phosphor material, antistokes, phosphors, lasers.

Self study: Different types of magnetic materials – effect of temperature.

Skill component: Determine the magnetic susceptibity of any transition metal and/or Lanthanide complex by Guy's method.

REFERENCE BOOKS:

01. Inorganic Chemistry: Principles, structure and reactivity, 1997, J.E. Huheey, Keiter and Keiter.
02. Inorganic Chemistry, 3rd edition, C. E. Housecroft and A. G. Sharpe.
03. Inorganic Chemistry by Purcel and Kotz, Saunders, 1977.
04. Inorganic Chemistry, 2nd Edition by W. W. Porterfield, Academic press.

05. Concepts and Models of Inorganic chemistry by Douglass, Alexander and Mcdaniel.
06. Advanced Inorganic Chemistry by Cotton and Wilkinson.
07. Inorganic Chemistry by Miessler and Tarr.
08. Fundamental concepts of Inorganic Chemistry by A. K. Das, volume 1 to 7.
09. Elements of Magnetochemistry by Symal and Dutta.
10. Organometallic Chemistry by Meharotra and Singh.
11. Organometallic Chemistry by G. E. Coates.
12. Introduction to Solids by Azaroff.
13. Solid State Chemistry and its Applications by Anthony R. West.
14. Solid State Chemistry: An Introduction, 3rd edition, Lesley E. Smart and Elaine A. Moore.

CHIPr -4.6: INORGANIC CHEMISTRY PRACTICAL-IV

Duration: 4 h/ week & Total: 64 h **Credits : 2**

01. Use of Cation and Anion resins column set up.
02. Analysis of Cement (SO_3).
03. Use of oxime, salicyladoxime, DMG in the separation and estimation using spectrophotometric/volumetric/gravimetric method.
04. Cu + Ni
05. Al + Mg
06. Ni in the presence of Fe.

REFERENCE BOOKS:

01. Practical Inorganic Chemistry by Gulati and Shikha and Sharma and JL and Manocha and Shagun, CBS PUBLICATION.
02. Inorganic Chemistry 3rd Edition 2008 by Donald A Tarr and Gary Miessler, PEARSON INDIA.
03. Inorganic Chemistry Practical by Dr Deepak Pant, Scince press.
04. Vogel's Qualitative Analysis, Seventh edition, by Svehla G, Pearson India.
05. Inorganic qualitative analysis in the Laboratory, 1st edition, by Clyde Metz, Academic Press.
06. W. L. Jolly, Modern Inorganic Chemistry, McGraw, Hill Co., 1984.
07. M. Day and J. Selbin, Theoretical Inorganic Chemistry, 2nd edition, Von. Nostrand, 1980.
08. H. J. Emeleus and J. J. Anderson, Modern Aspects of Inorganic Chemistry, Von. Nostrand, 1962.

CHOT-4.2: ORGANIC CHEMISTRY-IV

Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT –I **16 h**

ORGANIC SYNTHESIS

Designing the synthesis based on retrosynthetic analysis

Disconnection Approach: An introduction to synthons and synthetic equivalents, disconnection approach, functional group inter-conversions, the importance of the order of events in organic synthesis, one group C-X and two group C-X disconnections, chemoselectivity, reversal of polarity, cyclization reactions, amine synthesis.

One Group C-C Disconnections: Alcohols and carbonyl compounds, regioselectivity, alkene synthesis, use of acetylenes in organic synthesis.

Two Group C-C Disconnections: Diels-Alder reaction, 1,3-difunctionalised compounds, α,β-unsaturated carbonyl compounds, Michael addition and Robinson annulations.

Retrosynthesis: Retrosynthesis of benzocaine, 4-methoxy acetophenone, saccharin and bisavalone.

Protecting Groups: Illustration of protection and deprotection in organic synthesis, Protection of hydroxyl, carboxyl, carbonyl, thiol and amino groups.

Self study(SS):Basic of retrosynthetic analysis, synthons, synthetic equivalents, chemoselectivity, reversal of polarity, cyclization reactions, basic of protecting group.

Skill Components (SC): Student need to analyse retosynthetic pathways of saccharin and acetophenone product and intermediate analysis using several spectral data. How carbonyl group is protection monitored by FT-IR spectra need to be explained by taking (acetal and cyclic acetal formation one reaction)

UNIT –II **16 h**

BIOORGANIC POLYMERS

Carbohydrates: Introduction, ring size determination of monosaccharides-glucose and fructose, configuration andconformations of monosaccharides, anomeric effect, Hudson's rules, epimerization and mutarotation, synthesis, industrial and biological importance of glycosides and amino sugars.

Polysaccharides-structural elucidation of starch, structure of cellulose, glycogen, importance starch, cellulose and glycogen as energy and structural materials.

Polypeptides and Proteins: Introduction, Use of blocking agents, Bruce-Merrifield synthesis of polypeptides.

Structure of proteins- End group analysis(Edman's and Sanger's methods), Primary secondary, tertiary and quaternary.

Nucleic acids: Introduction, classification, components of nucleic acids, structures and synthesis of nucleosides and nucleotides, Watson-Crick model of DNA, role of DNA and RNAs in protein synthesis, genetic code-salient features.

Self study(SS):Basics of carbohydrates, origin, types, examples, stereo isomers of D-Glucose, Basic chemistry of amino acids, types of amino acids, history of nucleic acids.
Skill components: Students need to analyse spectral data of D- Glucose and D-Fructose(open source/record). Pentapeptide sequence (H2N-Leu-Ala-Phe-Pro-Gly-OH) analyzed mass spectrometry fragmentation pattern and confirm the sequence. DNA and RNA mass determination techniques may be model/analyzed (open source).

UNIT –III **16 h**

ALKALOIDS AND TERPENOIDS

Alkaloids: Introduction, classification, methods of isolation, general methods of isolation from plants, general methods of structural elucidation, structural elucidation and synthesis of ephedrine and quinine. Structure and biological importance of cocaine, codaine, thiebane and morphine.
Terpenoids: Introduction, classification, isoprene rule, structural elucidation and synthesis of menthol and zinzeberine.
Antibiotics: Introduction, classification, structure and their importance of penicillins, chloramphenicol, streptomycine, chloromycitin and tetracyclins, synthesis of cepahloshorin-C.

Self study (SS):Basics of alkaloids, terpenoids and antibiotics, isolation and nomenclature.
Skill components (SC): Analyzeeach one compound of the above class using various spectra.

UNIT –IV **16 h**

STEROIDS, ANTIBIOTICS AND PROSTAGLANDINS

Steroids: Introduction, classification; Diels hydrocarbon- its importance and synthesis, stereochemistry of cholesterol.
Structural elucidation of cholesterol-Blanc's rule, location of double bond, hydroxy group, angular methyl groups and side chain in cholestrerol, total synthesis.
Prostaglandins: Introduction, classification and biological importance, constitution of PGE_1, synthesis of PGE_1 by Corey's and Upjohn's approach.
Vitamins: Definition, Classification and biological importance, synthesis of vitamin C from D(+)-Glucose, synthesis of vitamin A.

Self study(SS): Basics of steroids , Prostaglandins, Vitamins, occurrence, nomenclature and isolation.
Skill components(SC):Students can make model of cholesterol.Students need to perform a small group project on water soluble & fat soluble vitamins, andanalyze Vit- A UV-vis and FT-IR data (record/open source).

REFERENCE BOOKS:

01. Organic synthesis- Design, reagents, reactions and rearrangements by Jagdamba Singh and Dr. L.D.S. Yadav , Pragati prakashan educational publishers , 2005.
02. Workbook for Organic synthesis- The disconnection approach by Stuart Warren, Volume 2, published by John Wiley & sons. reprinted 2001.
03. Organic synthesis- Strategy and control by Paul Wyatt and Stuart Warren , , published by John Wiley & sons. 2013.
04. F. A. Carey and Sundberg, Advanced Organic Chemistry : Part A – Structure and mechanism, 4th edition Kluwer academic publishers , New York, 2002. & Part B- Reaction and synthesis, 5th edition, spingers publication, 2007.
05. Chemistry of natural products by Sujata V.Bhat, Bhimsen A.Nagasampagi, Meenakshi Sivakumar , edited by Meenakshi Sivakumar , Bhimsen A.Nagasampagi, published by Springer science & business media, 2005.
06. Natural products by O.P. Agarwal, published by Krishna prakashan media, 2006.
07. Organic chemistry of natural products volume 1 by Gurdeep chatwal. Published by Himalaya publishing house , 2015.
08. Organic chemistry of natural products volume 2 by Gurdeep chatwal edited by M. Arora , by Himalaya publishing house , 2015.
09. Natural products – Their chemistry and biological significance by J.Mann and R.S. Davidson , published by Longman scientific & technical, 2009.
10. F. A. Carey and Sundberg, Advanced Organic Chemistry – Part A & B, 3rd edition, Plenum Press, New York, 1990.
11. Comprehensive Organic Synthesis – B. M. Trost and I. Fleming series, Pergamon Press, New York, 1991.
12. S. K. Ghosh, Advanced General Organic Chemistry, Book and Alleied (P) Ltd, 1998
13. Terpenes, J. Verghese, Tata McGraw-Hill, New Delhi, 1982.
14. Chemistry of terpenes and terpenoids, A. Newman, Academic Press, London, 1975.
15. Chemistry of natural products Vol. I & II, O. P. Aggarwal, Goel Publishing House, 6thEdn. 1982.
16. Medicinal natural products: A biosynthetic approach, P. M. Dewick. John Wiley, Chichester, 1997.
17. The colours of life: An introduction to the chemistry of porphyrins and related compounds, L. R. Milgrom, Wiley Chichester, 1995.
18. Chemistry of natural products: A unified approach, N. R. Krishnaswamy, University Press, India, 1999.
19. Terpenes, J. Verghese, Tata McGraw-Hill, New Delhi, 1982.
20. Handbook of naturally occurring compounds Vol. II: Terpenes, T. K. Davon, I. Scott, Academic Press, NY, 1972.

CHOPr-4.7: ORGANIC CHEMISTRY PRACTICAL-IV

Duration: 4 h/ week & Total: 64 h **Credits : 2**

PART-A : Isolations

01. Isolation of cysteine from human hair
02. Isolation of hesperidine from orange peel
03. Isolation of myristine from nutmug
04. Isolation of lycopene from tomato
05. Isolation of piperine from pepper
06. Isolation of caffeine from tea
07. Isolation of casein from milk
08. Isolation of nicotine from tobacco

PART-B : INSTRUMENTAL METHODS IN ORGANIC ANALYSIS

01. Recording/predicting/downloading from web sites the UV, IR, NMR and GC-MS/mass spectra of the compounds prepared in C-105/205/305 (Organic Practical – I), C-106/206/306 (Organic Practical – II), C-405 (Organic Practical – III) and C- 406 (Organic Practical – IV).
02. Structural elucidation of organic compounds with the help of spectra provided by the instructors/examiners.

REFERENCE BOOKS:

01. Vogel's Text Book of Practical Organic Chemistry, Brian S , Furniss, Anthony j. Hannaford, 5th Edition, Pearson India, 2005.
02. Practical Organic Chemistry F.G. Mann, B.C Saunders, Fourth edition, Pearson India,2011.
03. Systematic Laboratory Experiments in Organic Chemistry Arun Sethi, New Age International, 2003.
04. Comprehensive Practical Organic Chemistry: Qualitative Analysis Ahluwalia V.K. Sunitha Dhingra, First edition, Orient Longman, 2004
05. Practical Organic Chemistry: Qualitative Analysis Bhutani S.P. Chhikara A, First edition, ANE books-new Delhi, 2009
06. Laboratory techniques in Organic chemistry-V.K. Ahluwalia , Pooja Bhagat & Renu Aggarwal, I.K. International Publishing House Pvt.Ltd.
07. Laboratory Manual of Organic Chemistry Raj K. Bansal. 5th edition, New Age international publishers, 2008.
08. Modern experimental Organic Chemistry John H. Miller and E. F. Neugil
09. An introduction to practical Organic Chemistry Robert, Wingrove etc.
10. Semimicro qualitative Organic Analysis Cheronis, Entrikin and Hodnet.
11. Practical Organic Chemistry N. K. Visnoi, New AGE International(P) Ltd. London, 3rd edition, 1996.

CHPT-4.3: PHYSICAL CHEMISTRY-IV

Teaching: 4 h/ week & Credits : 4 **Total: 64 h**

UNIT–I **16 h**

PARTIAL MOLAR PROPERTIES

Partial molar properties, concept of partial molar properties, consequences of partial molar property concept. Physical significance of partial molar quantities. Determination of partial molar properties (direct method, intercept method, apparent molar properties). Chemical potential, physical significance of chemical potential, variation of chemical potential with pressure and temperature. Gibb's Duhem equations, chemical potential of a pure solid or liquid. Chemical properties of pure ideal gas, non ideality, activity, fugacity, activity coefficients for solutes and solvents. Determination of activity coefficient, thermodynamic function of ideal gases i) free energy of ideal mixing (□G mix) ii) enthalpy of ideal mixing iii) entropy of ideal mixing iv) volume of ideal mixing v) Helmholtz's free energy of ideal mixing vi) Duhem-Margules equation and its applications. Thermodynamics of ideal and non ideal solutions. Relationship between chemical potential Kapler-Clausius equation.

Self study(SS): Applications of partial molar properties, relationship to thermodynamic potentials.

Skill Component: Measuring partial molar properties**,** Formal Report on Partial Molar Volume Experiment

UNIT–II **16 h**

NANOMATERIALS & LIQUID CRYSTALS

Mesomorphic behaviour, thermotropic liquid crystals, positional order, bond orientational order, nematic and smectic mesophases; smectic – nematic transition and clearing temperature- homeotropic, planar and schlieren textures, twisted nematics chiral nematics, molecular arrangements in smectic A & C phases. Optical properties of liquid crystals.

Nanomaterials: Introduction – importance and characterization of nanomaterials – stability of nanoparticles In solutions – synthesis of metal nanomaterials: Physical methods (Laser Ablation, Evaporation, sputtering and solvated metal dispersion) chemical methods (Thermolysis, Sonochemical approach, reduction of metal ions by hydrogen and methanol)

Self study(SS): Physical and Chemical properties of Nanomaterials, Current study and research work on Nanoscience and Liquid Crystals.

Skill Component: Synthesis of nanomaterials by chemical method.

UNIT–III **16 h**

CHEMICAL KINETICS

Kinetics of opposed reactions, 1^{st} order opposed by 1^{st} order, 1^{st} order opposed by 2^{nd} order. 2^{nd} order opposed by 2^{nd} order. Kinetics of parallel and simultaneous reactions,(derivation of rate equations), time for maximum concentration of intermediate, Kinetics of chain reactions, activation energy of chain reactions, chain

length, chain transfer reactions, inhibition decomposition of C_2H_6, Reaction between H_2 with Br_2 and Cl_2, decomposition of O_3, Rice-Herzfeld mechanism with example(CH_3CHO), polymerization reactions. Kinetics of polymerization reactions, free-radical mechanism, kinetics of addition polymerization.

Self study(SS): Factors effecting rate of reaction, Elementary reactions, Molecularity of reactions. Differential and integrated rate laws.

Skill Component: Literature survey of chemical kinetics.

UNIT–IV **16 h**

ELECTROCHEMISTRY AND ELECTROPLATING

Electrical double layer and its structure Helmoltz-Perrin, Guoy-Chapman and Stern models. sedimentation potential, Dorn effect, streaming potential, Zeta potential and its determination, kinetics of electrode process, Butler Volmer equation, Tafel equation, generation of hydrogen. Bio-electrochemistry, biosensors, communication in biological systems.

Industrial Electrochemistry: Electro-organic and inorganic syntheses.

CORROSION AND PLATING: Types, measurement and preventive methods, metallic and non metallic coatings. Corrosion inhibition. Measurement of corrosion rate by weight loss, Tafel plots. Homogeneous theory of corrosion. Evans diagrams. Potential- pH (Pourbaix) diagrams of iron. Metal finishing, electroplating of single metals like Zn, Cd, Cu, Au, Pt- alloy plating, industrial application.

Self study(SS): Electrolysis and Electrolytic Cell, Electrochemical Series, Applications of electrolysis.

Skill Component: Electrodeposition of Zn and Cu from different alkaline bath solutions.

REFERENCE BOOKS:

01. Elements of statistical thermodynamics- E.K.Nash, Wesley, 1974
02. Statistical thermodynamics- M.C.Gupta, Willey Eastern ltd. 1990.
03. Statistical mechanics-Doley.
04. Textbook of polymer science –Billmeyer, Willey Intersection.
05. Elements of statistical thermodynamics- E.K.Nash, Wesley, 1974
06. Statistical thermodynamics- M.C.Gupta, Willey Eastern ltd. 1990.
07. Statistical mechanics-Doley.
08. Introduction to Solid state Physics—C. Kittel, 5th Edition, Wiley Eastern, Ltd.
09. Glasstone S. ;Electrochemistry; Litton Educational pub.
10. Barrow G.M.; Physical Chemistry, Benjaman Publishers, New York.
11. Puri B.H., Sharma L.R. and Pathania M.S.; Principles of Physical Chemistry, Vishal Publishing Co., 42nd Edition.
12. Glasstone S.G.; Physical Chemistry, D.Van Nostrand, New York (1946) 1198.
13. Jeffrey I Steinfeld, Joseph S F and William L. Hase; Chemical Kinetics and Dynamics Printice Hall, 2nd edition, 1998
14. C.N.R. Rao and J. Gopalakrishna "New Directions in solid state chemistry" Cambridge University Press, Cambridge (1999).
15. Electrochemistry –Principles and applications by E.G. Potter.
16. Electrochemistry by Reiger, Prentice Hall (1987).

CHPPr-4.8: PHYSICAL CHEMISTRY PRACTICAL-IV

Duration: 4 h/ week & Total: 64 h **Credits : 2**

Chemical Kinetics

1. Kinetics of acid catalyzed of hydrolysis of methyl acetyl and determination of energy activation.
2. Study of kinetics of autocatalytic reaction between $KMnO_4$ versus oxalic acid.
3. Evaluation of Arrehenius parameter for the reaction between $K_2S_2O_8$ versus KI (first order)

Partial Molar properties:

1. Partial Molar volume of ethanol-water system by intercept method.

Electoplating:

1. Electro deposition of Copper sulphate
2. Corrosion of an electrode

Semi Conductors:

1. To calculate the band gap energy (E_g) in semiconductors

REFERENCE BOOKS:

1. B. Vishwanathan, P.S. Raghavan; Practical Physical Chemistry,Viva Books,2010.
2. J.B.Yadav; Advance Practical Physical Chemistry, Goel Publishing House,10th Edition.
3. Gurdeep Raj; Advance Practical Inorganic Chemistry, Goel Publishing House,19 th Edition.
4. V.D. Athawale, P. Mathur; Experimental Physical Chemistry, New age International Publishers.
5. S. W. Rajbhoj, T.K. Chondherkar; Systematic experimental physical Chemistry, Anjali Publication.
6. Experimental Physical Chemistry –F. Daniels et al.
7. Selected Experiments in Physical Chemistry – Latham.
8. Experiments in Physical Chemistry – James and Prichard.
9. Experiments in Physical Chemistry – Shoemaker.
10. Advanced Physico-Chemical Experiments –J. Rose.
11. Practical Physical Chemistry –S.R. Palit.
12. Experiments in Physical Chemistry – Yadav, Geol Publishing House.
13. Experiments in Physical Chemistry – Palmer.
14. Experiments in Chemistry –D.V. Jahagirdar, Himalaya Publishing House, Bombay, (1994).
15. Experimental Physical Chemistry –Das. R.C. and Behera B, Tata Mc Graw Hill

CHGT-4.4: SPECTROSCOPY-IV

Teaching: 2 h/ week & Credits : 2 **Total: 32 h**

UNIT–I **16 hours**

FLAME EMISSION and CHIROPTICAL SPECTROSCOPY

Flame emission spectroscopy: Introduction, principle, flames and flame spectra variation of emission intensity with flames, flame background, metallic spectra in flame. Total consumption and premix, Butters interference, roll on temperature on absorption, and applications.

Chiroptical **spectroscopy:**Plane polarized light, instrumentation, optical rotary dispersion (ORD), plane curves, Cotton effect curves, application of optical rotation method in the determination of rate constants, acid catalyzed muta-rotation of glucose, inversion of cane sugar, octant and haloketone rules, applications. ORD in the determination ofconfiguration of cyclic and steroidal ketones.

Self study(SS):Basic of atomic spectra, Bunsen flame, Polarized light, optical activity, specific rotation.

Skill components(SC):Students need to analyze one ORD spectrum of steroid stereochemistry and two halo ketone compounds (open source) and simple structure model may be constructed.

UNIT–II **16 hours**

MOLECULAR LUMINESCENCE and PHOTOELECTRON SPECTROSCOPY

Molecular luminescence spectroscopy: Theoretical basis for fluorescence andphosphorescence. Singlet and triplet excited states. Variables affecting luminescence-quantum efficiency, transition types, structure and structural rigidity, temperature and solvent effects, effect of pH, dissolved oxygen and concentration effect. Excitation spectra *vs* emission spectra. Fluorescence instrumentation-fluorometers and spectrofluorometers. Sensitivity and selectivity. Modification necessary to measure phosphorescence. General scope of applications of luminescence.

Photoelectron spectroscopy: Introduction, principles, chemical shifts, photoelectron spectra ofsimple molecules, X-ray photoelectron and Auger electron spectroscopy, applications.

Self study(SS):Basic of fluorescence and phosphorescence, singlet and triplet states, photo-ionization process, chemical shifts and basic of photoelectron spectra.

Skill components(SC):Students need to list out THREE molecule fluorescence spectra and analyze. Students need to collect N2, NaN3 and HBr molecules photoelectron spectra (open source) and analyze.

REFERENCE BOOKS:

1. Chiroptical spectroscopy : Fundamentals and applications by Prasad L.Polavarapu, CSR press, 2016.

2. Comprehensive Chiroptical spectroscopy : Instrumentation , methodologies and theoretical simulations, volume 1 , by Nina Berova, Prasad L.Polavarapu, Koji Nakanishi, Robert W.Woody. John Wiley & sons, 2012.
3. Comprehensive Chiroptical spectroscopy : Applications in stereochemical analysis of synthetic compounds, natural products and biomolecules volume 2, by Nina Berova, Prasad L.Polavarapu, Koji Nakanishi, Robert W.Woody. John Wiley & sons, 2012.
4. Vibrational optical activity : Principles and applications by Laurence A.Nafie , Wiley pubublishers, 2011.
5. Chiral analysis : Advances in spectroscopy , chromatography and emerging methods by Prasad L.Polavarapu, 2nd edition . Elsevier publication , 2018.
6. Analytical automic spectroscopy (volume 2 of modern analytical chemistry) by William G. Schrenk , Plenum press, 1975. Dizitized on 2010.
7. Handbook of flame spectroscopy by Michael Loewen Parsons, Benzamin William Smith, Glenn Edward Bentley , plenum press, 1975. Dizitized on 2010.
8. Molecular luminescence spectroscopy : Methods and applications by Stephen Gregory Schulman , Wiley publications 1993, dizitized on 2010.
9. Photoelectron spectroscopy : Principles and applications , by Hufner. s. Springer publications , 2003.
10. Augur and X-Ray Photoelectron spectroscopy in material science by Hofmann, Siegfried . Springer publications, 2013.

Question paper Pattern of 4 Credit Paper

_ Semester (Regular/ Repeater) M.Sc. Degree (CBCS) Examination, June/July-20xx

CHEMISTRY

Paper Code: Subject

Time : 3 Hours Max. Marks : 80

*Instructions: Answer **all** questions*

1. Answer **any eight** of the following questions. (8x2 = 16)
   a)
   b)
   c)
   d)
   e)
   f)
   g)
   h)
   i)
   j)

2. a)
   b)
   c)

   OR

   d) (5+5+6)

3. a)
   b)
   c)

   OR

   d) (5+5+6)

4. a)
   b)
   c)

   OR

   d) (5+5+6)

5. a)
   b)
   c)

   OR

   d) (5+5+6)

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Question paper Pattern of 2 Credit Paper

_ Semester (Regular/ Repeater) M.Sc. Degree (CBCS) Examination, June/July-20xx

CHEMISTRY

Paper CHGT-x: Spectroscopy-x

Time : 2 Hours Max. Marks : 40

*Instructions: Answer **all** questions*

1. Answer **any four** of the following questions. (4x2 = 8)
   a)
   b)
   c)
   d)
   e)
   f)

2. a)
   b)
   c)

   OR

   d) (5+5+6)

3. a)
   b)
   c)

   OR

   d) (5+5+6)

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RANI CHANNAMMA UNIVERSITY
BELAGAVI

THE COURSE STRUCTURE & SYLLABUS OF

POST GRADUATE

MASTER OF COMMERCE

1ST to 4TH Semesters

w.e.f.

Academic Year 2021-22 and Onwards

Under

CHOICE BASED CREDIT SYSTEM (CBCS)

Rani Channamma University
Vidyasangama, Bhutaramanahatti, Belagavi

Master of Commerce
(CBCS)
(With Effect from Academic Year 2021-22)

Course Code	Semester & Course	Teaching Hours.	Credits	Maximum Marks			Examination Duration Hrs
				Internal Assessment	Semester End Examination	Total	
Semester – I							
HC-1.1	Corporate Strategic Management	4	4	20	80	100	3
HC-1.2	Advanced Marketing Management	4	4	20	80	100	3
HC-1.3	Financial Management	4	4	20	80	100	3
HC-1.4	Applied Economics for Business	4	4	20	80	100	3
HC-1.5	Management Accounting	4	4	20	80	100	3
Elective Specializations: Students can select anyone soft core group having one course each							
Group-(AF) Accounting and Finance							
SC-1.6 (AF)	Stock Market Operations	4	4	20	80	100	3
Group-(CT) Costing and Taxation							
SC-1.6 (CT)	Principles and Practice of Taxation	4	4	20	80	100	3
Group-(HM) Human Resource and Marketing							
SC-1.6 (HM)	Human Resource Management	4	4	20	80	100	3
	Semester Total	**24**	**24**	**120**	**480**	**600**	**18**
Semester-II							
HC-2.1	Corporate Restructuring	4	4	20	80	100	3
HC-2.2	Quantitative Techniques	4	4	20	80	100	3
HC-2.3	Dynamics of Entrepreneurship Development	4	4	20	80	100	3
HC-2.4	Advanced Corporate Accounting	4	4	20	80	100	3
Open Elective Courses offered to the students of other Departments							
OEC-2.5.1	Fundamentals of Business	4	4	20	80	100	3
OEC-2.5.2	Basics of Income Tax	4	4	20	80	100	3
Group-(AF) Accounting and Finance							
SC-2.6 (AF)	Accounting for Specialized Institutions	4	4	20	80	100	3
Group-(CT) Costing and Taxation							
SC-2.6 (CT)	Production and Operations Management	4	4	20	80	100	3
Group-(HM) Human Resource and Marketing							
SC-2.6 (HM)	Consumer Behaviour	4	4	20	80	100	3
	Semester Total	**28**	**24**	**120**	**480**	**600**	**18**

Semester-III							
HC-3.1	Business Research Methodology	4	4	20	80	100	3
HC-3.2	International Financial Management	4	4	20	80	100	3
HC-3.3	Organizational Behavior	4	4	20	80	100	3
HC-3.4	Innovations in Accounting						
Open Elective Courses offered to the students of other Departments							
OEC-3.5.1	Fundamentals of Banking	4	4	20	80	100	3
OEC-3.5.2	Personal Financial Planning	4	4	20	80	100	3
Group-(AF) Accounting and Finance							
SC -3.6 (AF)	Financial Reporting Standards	4	4	20	80	100	3
Group-(CT) Costing and Taxation							
SC -3.6 (CT)	Corporate Tax Planning	4	4	20	80	100	3
Group-(HM) Human Resource and Marketing							
SC -3.6 (HM)	Knowledge Management	4	4	20	80	100	3
	Semester Total	**28**	**24**	**120**	**480**	**600**	**18**
Semester-IV							
HC-4.1	GST and Customs	4	4	20	80	100	3
HC-4.2	Business Ethics and Corporate Governance	4	4	20	80	100	3
HC-4.3	Techniques of Costing	4	4	20	80	100	3
HC-4.4	Investment Analysis and Portfolio Management						
HC-4.5	Project and Field Visit	*	4	20	80	100	-
Group-(AF) Accounting and Finance							
SC -4.6 (AF)	Advanced Financial Accounting	4	4	20	80	100	3
Group-(CT) Costing and Taxation							
SC -4.6 (CT)	Strategic Cost Management	4	4	20	80	100	3
Group-(HM) Human Resource and Marketing							
SC -4.6 (HM)	Supply Chain Management	4	4	20	80	100	3
	Semester Total	**24**	**24**	**120**	**480**	**600**	**18**
	Grand Total: Semester I to IV	**104**	**96**	**480**	**1920**	**2400**	**72**

Note:

1 Hard core papers are compulsory in each semester.

2 Students have to select one soft core group out of three soft core groups, in the first semester and have to complete the M.Com programme in the same group up to fourth semester. They are not permitted to change the soft-core group in between the programme.

3 Students have to select one OEC paper each in II and III semesters offered by the other departments/disciplines of the university.

* For project work there shall be one working hour per week per guide for six students.

Semester - I

Course - HC-1.1: Corporate Strategic Management

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: The basic objective of the course is to educate about the basic inputs in making and implementing corporate strategic decisions.

Unit-I: Introduction

Meaning of Strategy, Reasons for Strategy, Relevance of Strategy in Modern Business, Concept of Strategy, Levels of Strategies, Strategic Intent and Strategic Fit, Vision, Mission and Purpose, Objectives and Goals, Strategic Business Unit and Ethics in Strategic Management.

Unit-II: Environmental Analysis and Diagnosis

Meaning of Business Environment, Types of Business Environment, Environment Scanning, Organizational Appraisal; Analysis of Michael Porter's Five Force Model, SWOT Analysis, ETOP Analysis, Value Chain Analysis, Core and Distinctive Competencies, Resources and Capabilities.

Unit-III: Types of Strategies

Modernization, Diversification & Integration Strategies, Merger, Takeover, Joint Venture and Strategy Alliance; Growth, Stability, Turnaround, Divestment, Liquidation and Reengineering Strategies; Generic Competitive Strategies, Cost Leadership, Differentiation, Bench Marking, Service Blue Print, Process of Strategic Choice; Factors Affecting Strategic Choice.

Unit-IV: Functional Strategies

Plans and Policies; Production/Operations, Marketing, Personnel, Financial, and R&D Strategy. Implementation of Strategy, Issues in Strategy Implementation, Strategy Activation; Organizational Structure, Commitment and Corporate Culture; Strategic Management Process of Indian Companies.

Unit-V: Strategic Evaluation and Control

Overview of Strategic Evaluation; Strategic Control; Techniques of Strategic Evaluation and Control. Evaluation of Strategic Alternatives - Product Portfolio Models, BCG Matrix, GE Matrix, Gap Analysis; Strategic Control System.

Reference Books:

1. Bartlett, C.A., Ghoshal, S. and P. Beamish, Transnational Management: Text, Cases, and Readings in Cross-Border Management, McGraw Hill.
2. Bhattachary S. K. and N. Venkataraman: Managing Business Enterprise: Strategies, Structures and Systems, Vikas Publishing House, New Delhi.
3. Hill and Jones, Strategic Management, All India Publishers, Chennai.
4. Porter, Michael E., The Competitive Advantage of Nations, Macmillan, London.
5. Sharma, R. A Strategic Management in Indian Companies, Deep and Publications, New Delhi.
6. Srivastava, R.M. Management Policy and Strategic Management, Himalaya Publishing.
7. Subba Rao, V., Strategic Management, Himalaya Publishing

Course - HC-1.2: Advanced Marketing Management

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To provide understanding of the decision variables a marketing manager may use in a marketing environment and to gain experience in developing marketing strategies.

Unit- I: Introduction:

Marketing: Meaning, Definition, Elements, Objectives, Importance, Advantages and limitations, Evolution and Scope Approaches to the study of Marketing Environment: Meaning and Definition, Internal and external Environmental factors influencing the marketing environment.

Unit-II: Product Mix and Price Mix

Marketing Mix: Meaning, Definition, Elements, Product Mix: Concept of Product, Product Lines, Product line length, depth, width. Product Mix Width, Product Simplification diversification and elimination. Product Management: New product development and Product Life Cycle Brand Management: concept definition and history of brand/branding Brand Creation, Rebranding, Brand Positioning, Brand Equity Brand Contract, Brand Factory; Labeling: Meaning and importance Price Mix: Price—Meaning, Definition and Elements of price mix. Need, importance and objectives of pricing; Factors influencing pricing; various Pricing Strategies

Unit-III: Place Mix and Promotion Mix

Place – Types of Distribution Channels , Advantages & Limitations, factors affecting selection channel; Promotion Mix : Meaning, Elements of Promotion Mix, Advertising – Concept, Classification, functions , benefits of advertising, Economic, Social & ethical issues, evaluating advertising effectiveness, Recent trends in advertising, Personal Selling – concept and importance, theories of selling, process of personal selling. Selling Methods, Limitations of personal selling. Publicity: Meaning, difference between advertising and publicity Sales.

Unit IV: Consumer Behaviour Analysis: Meaning and Characteristics, Importance, Factors Influencing Consumer Behaviour, Consumer Purchase Decision Process, Buying Roles, Buying Motives, Buyer Behaviour Models

Unit-V: Trends in Marketing

Service Marketing, E-Marketing, Green Marketing, Customer Relationship Management, Rural Marketing; Other Emerging Trends- Ethical Issues in Marketing.

Reference Books:

1. Czinkota, Michael R. & Kotabe, Masaaki, Marketing Management. Thomson Learning.
2. Etzel, Michael J., Walker, Bruce J., Staton, William J., & Ajay Pandit. Marketing Concepts and Cases. Tata Mcgraw Hill (Special Indian Edition).
3. Kotler, Philip & Keller, Kevin Lane, Marketing Management. Pearson.
4. Kotler, Philip, Keller, Kevin Lane, Koshy, Abraham, & Mithileshwar Jha. Marketing Management: A South Asian Perspective. Pearson.
5. Lamb, Charles W., Hair, Joseph, F. & Mcdaniel, Carl, Marketing. Cengage Learning.
6. Perrault, Willim, D., Cannon, Joseph, P. & Mccarthy, E. Jerome, Essentials of Marketing: A Marketing Strategy Planning Approach, Mcgraw-Hill.
7. Pride, William M. & Ferrell, O.C., Marketing. South-Western Cengage Learning

Course – HC-1.3: Financial Management

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: The objective of the course is to acquaint the students with the basic analytical techniques and methods of financial management of business firms.

Unit-I: Financial Management

An Overview-Nature, Significance and Scope of Corporate Financial Management, Objectives and Agency Theory, Financial Management and its Relationship with other Disciplines, Business Polices and their Impact on Financial Management, Recent Trends and Contemporary Issues.

Unit-II: Capital Structure

Concept of Financial and Capital Structures; Classification, Theories of Capital Structure- NI, NOI, MM and Traditional Approaches, MM Approach and Corporate and Personal Income Taxes, Influence of Leverages on Capital Structure, Cost of Capital - Concept, Importance, Types and Measurement.

Unit-III: Capital Budgeting

Concept, Significance, Nature and Classification of Capital Budgeting Decisions, Cash Flow Computation- Incremental Approach; Evaluation Criteria - Pay Back Period, ARR, NPV, IRR and PI Methods; Capital Rationing, Capital Budgeting under Risk and Uncertainty.

Unit-IV: Dividend Decisions

Concepts and Classification, Legal Provisions Relating to Dividend in India; Dividend and Market Valuation, Walter's Model, Gordon's Model and MM Approach, Factors affecting Dividend Decision; Dividend Policies in Practice.

Unit-V: Working Capital Management

Concepts, Importance, Classification and Factors Determining Working Capital, Computation through Operating Cycle Approach; Walker's Four Part Theory of Working Capital Management; Investment and Financial Policies.

Reference Books:

1. Babhtosh Banerjee, Financial Policy & Management Accounting, World Press Pvt. Ltd., Calcutta.
2. I.M. Pandey, Financial Management, Vikas, New Delhi.
3. James C. Van Horne, Financial Management and Policy, Phi, New Delhi.
4. Khan and Jain, Financial Management, TMH, New Delhi.
5. Prasanna Chandra, Financial Management, TMH, New Delhi.
6. Rao R.K.S. Financial Management Mac Milan, New York.
7. Solomon E. Theory of Financial Management, Columbia University Press, New York.

Course – HC-1.4: Applied Economics for Business

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To acquaint students with the concepts of micro economic theory and principles and theirapplication in business decision making.

Unit-I: Introduction to Economics for Business

Concept, Nature, Scope, Role with reference to Functional Areas of Business and Economic Analysis, Fundamental Principles, Managerial Economist's Role and Responsibilities, Limitations.

Unit-II: Elasticity of Demand and Forecasting

Elasticity; Concept, Types, Degree, Calculation and Application of Price, Cross Income, Advertising Elasticity; Demand Function, Estimation (Simple & Multiple Regression) Basic Mathematical Modules for Managerial Economics and Total Revenue, Total Cost, Total Profit, Marginal Revenue, Marginal Cost.

Unit-III: Production Analysis

Production Function – Law of Variable Proportion, Return to Scale and Business Decisions, Cobb Douglas Production Function, Application of Iso-Quant, Iso-Cost, Economic Region, Economies and Diseconomiesof Scale.

Unit-IV: Cost and Revenue Analysis

Behaviour of Cost and Revenue Curves (Variable, Fixed, Marginal and Average) Short Run and Long Run; Equilibrium of Firm under Perfect Monopoly, Monopolistic and Oligopoly Market Condition – Benefits of Markets with Case Studies.

Unit-V: Objectives of the Firm & Pricing

Introduction, Objectives, Maximization of Sales, Growth, Staff, Profit Incremental Principle & Decision – Knowledge Profit – Pricing Practice under Product Life Cycle and Trade Cycle Phases.

Reference Books:

1. Adhikary M. Business Economics, Excel Books, New Delhi
2. Baumol, William J: Economic theory and Operations Analysis, Prentice Hall, London.
3. Baya, Michael R: Managerial Economics and Business Strategy, McGraw Hill Inc. New York.
4. Chopra, O.P: Managerial Economics, Tata McGraw Hill, Delhi.
5. Eaton, B.Curtis and Diane Faton; Micro Economics, Prentice Hall, New Jersey.
6. G.S. Gupta Managerial Economics – Tata McGraw Hill Publishing Company, New Delhi.
7. Petersen, H.Carig and W. Cris Lewis: Managerial Economics, Prentice Hall, Delhi.
8. Salvatore, Dominick: Managerial Economics in a Global Economy, McGraw Hill, New York.
9. Varian, H.R. International Microeconomics; A Modern Approach, East West Press, New Delhi.
10. Varsheny RL and Maheshwari KL: Managerial Economics; Sultan Chand and Sons, New Delhi.

Course - HC-1.5: Management Accounting

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To familiarize and acquaint the students with application of advanced managerial accounting techniques.

Unit-I: Introduction

Concept, Nature, Scope and Evolution of Management Accounting, Financial Accounting v/s Managerial Accounting, Utility and Limitations; Tools and Techniques of Managerial Accounting.

Unit-II: Marginal Costing and Break-Even Analysis

Concept, Nature and Scope of Marginal Costing, Marginal Costing v/s Absorption Costing; Marginal Costing Equation, Contribution Margin Ratio and Application of Marginal Costing in Decision Making. Cost volume Profit Relationship, Break Even Analysis, Preparation of Break-Even Charts and Profit Graphs.

Unit-III: Analysis and Interpretation of Financial Statements

Nature, Objectives, Latest Trends in Presenting Financial Data, Types and Tools of Financial analysis; Accounting Ratios – Classification, Advantages and Limitations.

Unit-IV: Funds Flow and Cash Flow Statements

Concepts of Funds and Objectives of Preparing Statement of Changes in Financial Position; Funds Flow v/s Income Statement; Procedure Involved in Funds Flow Statement, Advantages and Limitations of Funds Flow Statement; Cash Flow Statement – Classification of Cash Flow, Preparation and Usefulness, Accounting Standard and Cash Flow Preparation Practices in India.

Unit-V: Uniform and Inter-Firm Costing Methods

Meaning, Features, Significance, Steps Involved and Techniques of Uniform Costing and Inter-firm Comparison.

Reference Books:

1. Babhatosh Banerjee, Financial Policy and Management Accounting, World Press, Calcutta.
2. Charler Brandon, Managerial Accounting, TMH, New Delhi.
3. Horngren, et al., Introduction to Management Accounting, PHI, New Delhi.
4. Jawaharlal, Managerial Accounting, Himalaya, Bombay.
5. Maheswari S.N., Management Accounting and Financial Control, Sultan Chand and Sons, New Delhi.
6. Manmohan and Goyal, Management Accounting, Sahitya Bhavan, Agra.
7. Ravi M.Kishore, Advanced Management Accounting, Taxman, Publications, New Delhi.
8. Ray H.Garrison, Managerial Accounting, TMH, New Delhi.
9. Robert N.Anthony and James Reece, Accounting Principles, AITBS, New Delhi.
10. Sharma and Gupta, Management Accounting, Kalyani, New Delhi

Group-(AF) Accounting and Finance

Course - SC-1.6 (AF): Stock Market Operations

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To equip the students with conceptual framework and functioning of stock markets.

Unit-I: Overview of Securities Market

Organisational Structure of Financial System - Functions of Securities Market - Securities Market and Economic Growth - Profile of Indian Securities Market - Market Regulation: SEBI Act, 1992 - Securities and Contracts Regulation Act 1956 - Reforms to Promote Investor Confidence - Role of IOSCO - International Organisation of Securities Commissions.

Unit-II: Primary Market

Primary Market - Its Role and Functions; Issue of Capital - Methods of Issuing Securities in Primary Market, Intermediaries in New Issue Market - Merchant Bankers, Underwriters, Brokers, Registrars and Managers, Bankers; Pricing of Issue - Book Building, Green Shoe Option, Procedure for New Issues and SEBI Guidelines for Issue in Primary Market.

Unit-III: Secondary Market

Importance and Functions, Listing of Securities in Stock Exchanges; Players in Stock Exchange - Investors, Speculators, Market Makers, Stock Brokers; Eligibility Criteria; Trading in Stock Exchange, Stock Exchanges - Bombay Stock Exchange, National Stock Exchange, Over-the-Counter Exchange of India; The SEBI Trading Mechanism - BOLT, NEAT System and Screen Based System.

Unit-VI: Depository Services

The Depositories Act, 1996; SEBI Depositories and Participants Regulations 1996 and 2012; Types of Depositories - NSDL, CDSL and Depository Participant; - International Securities Identification Number (ISIN) - Settlement of Off- Market Transactions: Insider Trading - Legal Framework for Investor Protection in India; Internet Initiatives at Depository services; Credit Rating- Meaning and Necessity, Methodology of Credit Rating, Credit Rating Agencies in India.

Unit-V: International Stock Market

Meaning, Environment, Raising of Finance in International Markets, Euro Issues, GDRs and ADRs Guidelines for Raising Funds in International Markets through various Instruments; Working of International Stock Exchanges with respect to their Size - Listing Requirements, Membership, Clearing and Settlement of New York Stock Exchange, NASDAQ, London Stock Exchange, Tokyo Stock Exchange, Luxembourg Stock Exchange, German and France Stock Exchanges.

Reference Books:

1. Cornett M. M and Sauders, Fundamentals of Financial Institutions Management, McGraw Hill
2. Dalton, John, How the Stock Market Works, Prentice Hall, New Delhi
3. E Gordon & K. Natarajan, Capital Market in India, Himalaya Publishing House
4. M.Y. khan, Indian Financial System , TMH, Asaf Ali Road, New Delhi
5. Mandura Jeff, Financial Markets and Institutions, West Publishing Company
6. Mark Grinblatt, and Sheridan Titman, Financial Market and Corporate Strategy, Tata McGraw Hill
7. Meir Khon, Financial Institutions and Markets, Oxford University Press
8. N R Parasuraman, Fundamentals of Financial Derivatives, Wiley Publications, New Delhi.
9. Sundaram and Das, Derivatives - Principles and Practice, TMH, New Delhi.
10. V A. Avadhani, Financial Services in India, Himalaya Publishing House

Group-(CT) Costing and Taxation

Course – SC-1.6 (CT): Principles and Practice of Taxation

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To acquaint the students with the basic principles of taxation, tax policy, and structure of Indiantax system.

Unit-I: Introduction

Tax Policy and Tax Base; Objectives of Tax Policy; Canons of Taxation; Determinants of Tax Yield; Effects of Taxes on Money and Real burden, Classification of Taxes: Direct and Indirect Taxes; OECD Classification; Progressive, Proportional and Regressive Taxes; Ad Valorem and Specific Taxes.

Unit-II: Tax Ratio, Tax Effort and Tax Incidence

Tax - GDP Ratio: Meaning, Significance and Determinants; Trends in Tax- GDP Ratio in India; Inter- Country Comparisons; Tax Capacity and Tax Effort; Tax Equity- Need and Approaches - Benefit Principle of Taxation and ability to Pay Principle of Taxation; Meaning and Types of Tax Incidence; Factors Determining Extent of Tax Shifting; Efficiency; Excess burden of Taxation; Administrative Costs; Compliance Costs; Distribution of Tax burden.

Unit-III: Tax Evasion and Tax Avoidance

Meaning of Tax Evasion and Tax Avoidance; Causes and Consequences of Tax Evasion, Methods to Curb Tax Evasion; Tax Evasion in India;

Unit-IV: Tax Incentives

Tax Incentives - Rationale, Benefits and Costs of Tax Incentives; Types of Tax Incentives; Tax Holidays, Investment Allowance, Deductions, Reinvestment Incentives.

Unit-V: Constitutional Provisions Pertaining to Taxes in India

Rationale for Constitutional Arrangements; Distribution of Taxation Powers between the Center and States in the Constitution of India; Sharing of Central Taxes; Recommendations of the Fourteenth Finance Commission.

Reference Books:

01. Easson, A., Tax Incentives for Foreign Direct Investment. New York: Kluwer Law International.
02. Musgrave, R. & Musgrave, P., Public Finance in Theory and Practice. McGraw Hill Book Company: New York.
03. Peerzade, S. A., Economics of Taxation. New Delhi: Atlantic Publishers & Distributors Pvt. Ltd.
04. Shome, P., Tax Policy Handbook. Washington, D. C.: International Monetary Fund, MF.
05. Sury, M. M., Tax Systems in India: Evolution and Present Structure. New Century Publications: New Delhi.

Group-(HM) Human Resource and Marketing

Course - SC-1.6 (HM): Human Resource Management

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To acquaint students with the concepts of human resource management and their application to solving HR-related workplace problems.

Unit-I: Introduction

Human Resource Management: Concept, Objectives, Scope, Features of HRM, Role and Importance of HRM, Policies and Practices of HRM, Functions and Challenges of HRM. SHRM: Concept, Importance and Nature.

Unit-II: HR Acquisition & Retention

Human Resource Planning: Definition, Objective, Need and Importance, HRP Process, Barriers to HRP. Job Analysis: Job Description & Job Specification - Job Design: Factors affecting Job Design, Job Enrichment Vs Job Enlargement. Recruitment & Selection: Sources of Recruitment, Selection Process, Difference between Recruitment and Selection - Induction and Orientation, Career Planning: Process of career planning and development, Succession Planning Process, Transfer and Promotion. Retention of Employees: Importance and Strategies of Retention.

Unit-III: Managing Employee Performance and Training

Performance Appraisal & Performance Management: Definition, Objective, Importance, Appraisal Process and Appraisal Methods. Performance Appraisal Vs Performance Management, Potential Management - Training and Development: Definition, Scope, Role and Objectives of Training, Training and Development Process, Types of Training, Evaluation of Training Effectiveness, Difference between Training and Development, E-Learning.

Unit-IV: Compensation Management

Compensation Management: Concept, Objectives, and Importance, Process and Current Trends in Compensation, Factors in the compensation plan, Wage/Salary Differentials, Components of salary. Incentives and Benefits: Financial & Nonfinancial Incentive, Fringe Benefits. Employees Separation: Concepts & Methods of Retirement, Termination, VRS, Golden Handshake, Suspension.

Unit-V: Emerging Trends in HRM

HRIS: Need, Advantages & Uses of HRIS. HR Accounting: Concepts, Objectives, Advantages, Limitations & Methods - HR Audit: Concept, Objective, Scope & Process - HR Shared Services: Concept, Objective, Benefits and Issues of HR Shared Services.

Reference Books:

1. Human Resource Management, Dr S.S. Khanka, Sultan Chanda, Delhi
2. Human Resource Management, Deepak Bhattacharya, Sage Publishing Ltd.
3. Human Resource Management, Dr. P.C.Pardeshi, Niramli Publication
4. Human Resource Management, R.S.Dwiwedi, Vikas Publishing House.
5. Human Resource Management, C.B.Mamoria, Himalaya Publishing House
6. Human Resource Management, Gary Dessler Dorling Kindersley Pvt Ltd.
7. Human Resource Management, Text and Cases, K Aswathappa, Tata McGraw Hill Publishing Company.
8. Human Resource Management, Theory and Practices, R. C. Sharma, Nipun Sharma, Sage Publication
9. Human Resource Management, Arun Monppa, Tata McGraw Hill Publishing Company
10. Human Resource Management, Appasaba L.V and Kadakol A M., College Book House

Semester – II

Course - HC-2.1: Corporate Restructuring

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: The objective of the course is to teach the basic issues and techniques of corporate restructuring and corporate valuation.

Unit-I: Introduction

Meaning of Corporate Restructuring, Reasons for Corporate Restructuring, Significance of Corporate Restructuring, Forms of Corporate Restructuring, Sources of Value Creation in Corporate Restructuring, and Effects of Corporate Restructuring.

Unit-II: Mergers and Acquisitions

Meaning, Types and Motives for Corporate Mergers, Mergers and Strategic Perspective, Sources of Value Creation in Mergers, Synergy and Types - Theories of Corporate Mergers, Efficiency Theories, Information and Signaling, Agency Problems and Managerialism, Free Cash Flow, Market Power, Taxes and Redistribution, Cost and Benefits of Mergers, Methods of Financing of Mergers.

Unit-III: Valuation, Exchange Rate and Merger Failures

Legal Procedure for Mergers in India, Merger Trends in India - Methods of Valuation of Target Firms, Share Exchange Rate - Minimum and Maximum, EPS V/S MPS Methods, Discounted Cash Flow Analysis, Merger Gains and Distribution, Methods of Analysis of Post-Merger Performance.

Unit-IV: Corporate Control

Meaning, Objectives and Types of Takeovers, Open Offer V/S Tender Offer, SEBI's Takeover Code, Takeover Defenses - Need, Types and Effect of Takeover Defenses, Takeovers in India and Defenses Employed, Financing of Takeovers.

Unit-V: Industrial Sickness

Meaning, Causes, Symptoms of Industrial Sickness, Magnitude of Sickness, Univariate and Multivariate Methods of Sickness Prediction - Magnitude and Reasons for Industrial Sickness of SSI and Non-SSI Units in India, Summary of Tiwari Committee Recommendations, BIFR Establishment, Objectives, Procedure and Working Measures for Control of Industrial Sickness.

Reference Books

1. J.F.Weston, K.S.Chung & S.E.Hoag, Mergers Restructuring and Corporate Control, Prentice Hall of India, New Delhi.
2. Khan and Jain Financial Management TMH, New Delhi.
3. Pandey, I.M. Financial Management, Vikas Publications, New Delhi.
4. Patrick Ganghan Mergers, Acquisitions and Corporate Restructuring John Wiley.
5. Prasanna Chandra Financial Management TMH, New Delhi.
6. Stephen Ross, Wsterfield Jaffee Corporate Finance, 7th Edition TMH, New Delhi.
7. Sudarshan, Creating Value through Mergers and Acquisition, PHI, New Delhi.

Course - HC-2.2: Quantitative Techniques

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: The objective of this course is to acquaint the students with quantitative techniques that play an important role in analysing business issues to take effective managerial decisions.

Unit-I: Introduction

Meaning and Definition of Quantitative Techniques, Linkage between Business Decision Making and Quantitative Techniques, Different Quantitative Techniques, Areas for Application of Quantitative Techniques in Business. Types of Decisions; Steps in Decision Making; Quantitative Analysis and Decision Making; Different types of Models and their Uses; Model Building Steps.

Unit-II: Linear Programming

Introduction, Importance and Scope of Quantitative Techniques, Optimization Concept, Operations Research Models; Linear Programming - Introduction to Linear Programming, Problem Formulation, Product Mix and Managerial Applications, Graphical Method of Problem Solving, Alternate solution of Linear Programming Problems, Simplex Method, Duality in Linear Programming, Formulation of Dual Problems, Advantages, and Economic Interpretation of Dual Variables.

Unit-III: Transportation Models

Introduction, Nature and Scope of Transportation and Allocation Models, Methods of Allocation, Different Methods for Finding Initial Solution; VAM, North West Corner Rule, and other Methods, Degeneracy, Finding Optimal Solution, Test for Optimality, Imbalance in Total Availability and Total Requirement, Impossible Shipments, Alternate Methods of Solutions, and Maximization as Objective Application.

Unit-IV: Inventory and Queuing Management

Concepts of Inventory Management; Inventory Models, EOQ with Price Breaks, EOQ Model for Production Runs, Planned Shortage Model - Deciding Optimum Safety Stock and Reorder Level, Probabilistic Model; Techniques of Selective Control. Queuing Models: Elements of a Queuing System; Models with Poisson Arrival and Exponential Services; Cost Behaviour Analysis. Simulation: Monte Carlo Simulation, Application of Simulation in Inventory Management and Queuing Situation.

Unit-V: Network Models

Introduction to PERT and CPM Techniques, Determination of Critical Path - PERT, Estimating Activity Times, Network Components, Precedence, Events, Activities, Errors and Dummies, Critical Path Analysis, Float, Probabilities in PERT Analysis, Project Time Calculation, Project Crashing, Time, and Cost Considerations.

Reference Books:

1. Anitha H S, Operations Research for Management, Mangala Deep Publications, Jaipur.
2. Gupta and Khanna, Quantitative Techniques for Decision Making, Prentice Hall of India.
3. J K Sharma, Quantitative Techniques, Macmillan India
4. K. Shridhar Bhat, Operation Research and Quantitative Techniques, Himalaya Publishing House
5. Kalavathy S: Operations Research, New Delhi: Vikas Publishing House
6. Kapoor V.K., Operations Research: Concepts, Problems and Solutions, Sultan Chand & Sons.
7. Kothari C R: Introduction to Operational Research, New Delhi: Vikas
8. N. P Agarwal, Sonia Agarwal, and Himanshu Saxena, Quantitative Techniques, Professional RBD Publications
9. Srivastava and Others, Quantitative Techniques, New Age International
10. Vohra N D: Quantitative Techniques in Management, New Delhi: Tara McGraw-Hill

Course - HC-2.3: Dynamics of Entrepreneurial Development

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To enable the students to understand the dynamics of entrepreneurial development and imbibe the qualities to become the entrepreneurs.

Unit-I: Introduction

The Concept of Entrepreneur, Entrepreneurial Mindset, Entrepreneur V/S Small Business Owner, Characteristics associated with Entrepreneurship, The Myths of Entrepreneurship, The Schools of Entrepreneurial Thought; Macro (Environmental, Financial, Displacement) Micro (Trait, Venture Opportunity, Strategic formulation), Typology of Entrepreneurial Styles, Entrepreneur and Risk.

Unit-II: Entrepreneurial Creativity and Innovation

Opportunity Identification, Sources of Innovative Ideas, Entrepreneurial Creativity, Components, Indicators, Creative Process, Developing Individual's Creativity, Impediments, Creative Climate, Arenas of Creativity, Innovation - Concepts, Myths, Principles.

Unit-III: Initiating Ventures

Pathways to New Ventures, New-New and New-Old Approach, Acquiring an Established Venture, Opportunities, Advantages, Do's and Don'ts, Franchising, Features, Advantages and Disadvantages, Types of Franchising in India- Start Ups in India, Concept, Pitfalls in Selection of New Ventures.

Unit-IV: Business Plan for New Ventures

Concept of Business Plan, Pitfalls in Planning, Benefits, Developing a Business Plan, Elements of Plan, Hints to Prepare a Plan, Updating a Plan, Preparing a Business Plan, Phases of Starting a Small Scale Industry.

Unit-V: Entrepreneurship

The Indian Way; History, Global Indian Entrepreneur, Modern Entrepreneurs, Institutions Facilitating Entrepreneurship; Ministry of MSME, NIESBUD, EDI, Development Commissioner, CREED, ISB, WCED, NEN, SEE, NSTEDB, Ministry of SD & E-Credit Rating by CMERA.

Reference Books:

1. N Desai, Entrepreneurship Management, Ashish Publishing House.
2. M. Bammback and J. R. Manscusu, Entrepreneurship and Venture Management, Prentice Hall of India.
3. Chandra Prasanna, Project Preparation, Appraisal and Implementation, Tata Mcgraw Hill.
4. D.F. Kuratko and T.V.Roa, Entrepreneurship-A South Asian Perspective, Cenage Learning India Pvt. Ltd.2016
5. Hall B. L, Pickle and Yance, Small Business Management, John Wiley & Sons, USA.
6. Kenneth R. Van Vloorthis, Entrepreneurship and Small Business Management, Allyn and Bacon.
7. Nicholas, Project Management for Business and Technology: Principles and Practice, Prentice Hall Of India.
8. P. Gopal Krishnan and V. E Rama Moorthy, Project Management, Macmillan India.
9. Prasanna Chandra, Projects: Planning, Analysis, Selection, Implementation and Review, Tata Mcgraw Hill.
10. Vasanth Desai, The Dynamics of Entrepreneurial Development and Management, Himalaya Publishing House.

Course - HC-2.4: Advanced Corporate Accounting

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: The objective of this course is to acquaint the students with company accounts and the issues related with accounting practices.

Unit-I: Company Accounts

Introduction, Provisions Relating to Maintenance of Accounts, Forms and Contents of Balance Sheet and Statement of Profit and Loss, Schedule III of Companies Act, 2014; Typical Adjustments Related to Company Final Accounts, Managerial Remuneration and Preparation of Final Accounts. (Theory and Problems)

Unit-II: Accounting for Amalgamation

Introduction, Forms of Amalgamation, Requisitions of the Companies Act, 2013; Types of Amalgamation, Methods of Accounting for Amalgamation, Intercompany debts and Inventories, Intercompany Investments. (Theory and Problems)

Unit-III: Accounting for Holding Companies

Meaning and definition, Requirements of Companies Act, 2013; Consolidation of Financial Statements and Accounting Standards, Accounting Treatment and Disclosures, Single Subsidiary, Chain Holdings and Cross Holdings. (Theory and Problems)

Unit-IV: Accounting for Buy Back of Shares

Introduction, Objectives of Buy Back, Conditions of Buy Back, Benefits and Limitations of Buy Back, Sources of Buy Back, Buy Back of Securities under Companies Act, 2013. Securities Premium Account, Proceeds of an Earlier Issue, Rule 17 of the Companies Rules, 2014; Methods of Buy Back (Theory and Problems)

Unit-V: Accounting for Financial Instruments

Meaning, Definition, Methods of trading - Margin, Option. Financial Instruments - Recognition, and Measurement - Presentation and Disclosures (Theory and Problems)

Reference Books:

1. Gupta and Radhaswami, Advanced Accountancy, Vol. II, Sultan Chand, New Delhi.
2. Hanif and Mukherji, Advanced Accountancy.
3. Jain and Narang, Advanced Accountancy, Vol. II, Kalyani, New Delhi.
4. P.V. Ratnam, Advanced Accountancy, Konark, New Delhi.
5. Rishikesh Chakraborty, Advanced Accounts, Oxford, New Delhi.
6. S.N. Maheshwari, Advanced Accountancy, Vol. II, Vikas, New Delhi.
7. Shukla and Grewal, Advanced Accounts, Vol.II, S. Chand and Co., New Delhi

Course – OEC- 2.5.1: Fundamentals of Business

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objectives: The objective of the course is to acquaint the students with the basic business trends, forms of ownership, consumer protection act and business environment.

Unit-I: Introduction to Business

Concepts of Business, Need and Importance of Business, Principles and Process of Business, Factors affecting Business, Tools of Business, Financing of Business Planning, Relevance of Business with other Discipline, Ethical Behaviour in Business.

Unit-II: Forms of Ownership

Meaning, Definition, Nature, Scope and Importance of Ownership - Public, Private and Joint Sector Enterprise, Sole Proprietorships, Partnerships, Joint Hindu Family Business, Cooperative Society, Joint Stock Company, and Statutory Corporation.

Unit-III: Business Environment

Concept of Business Environment, Meaning, Definition, Nature and Importance of Business Environment, Levels of the Business Environment, Types of Business Environment - Internal, External, Micro and Macro.

Unit-IV: Consumer Protection Act

Introduction, Definition; Consumer, Defect, Deficiency and Unfair Trade Practices, Manufacturer, Consumer Councils, Consumer Protection Redressal Agencies- Jurisdiction. Penalties for Frivolous Complaints; Consumer Protection Act-2019.

Unit-V: Recent Trends in Business

Concept of Start-up India, Make in India; Use of Artificial Intelligence, Role of Leadership, Business Collaboration; Digitalization of Business; E-Business, E-Finance, E-Marketing.

Reference Books:

1. Ashwatappa K, Essentials of Business Environment, Himalaya Publishing House.
2. Dr. S. K. Mandal: Fundamental of Business: Principles and Practice.
3. Francis Cherunilam, Business Environment Text & Cases Himalaya Publications.
4. M.C. Kuchhal Business Legislation for Management 2nd ed. Vikas Publishing.
5. Prof. H.D Pithawalla, Consumer Protection Act, C. Jamnadas and Co.
6. R. N. Prasad and Acharya Seema, Fundamentals of Business Analytics, Wiley India Pvt. Ltd.
7. Raj Agrawal and Parag Diwan, Business Environment; Excel Books, New Delhi
8. Tandon B.C: Environment and Entrepreneur; Chugh Publications, Allahabad.
9. V. K. Bhalla and S. Shiva Ramu, International Business-Environment and management, Anmol Publications
10. Harold Koontz, O'Donnell and Heinz Weihrich, "Essentials of Management' New Delhi, Tata McGraw Hill.
11. R.D. Agrawal, "Organization and Management" New Delhi, Tata McGraw Hill.
12. Y.K. Bhushan: Fundamentals of Business Organisation & Management, Sultan Chand & Sons.

Course - OEC- 2.5.2: Basics of Income Tax

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To provide the basic knowledge of income and taxes on income to students in order to manage their tax liability efficiently.

Unit-I: Introduction to Income Tax

Brief History of Indian Income Tax - Legal Framework - Types of Taxes - Definitions - Assessment Year - Previous Year - Residential Status - Determination of Residential Status - Income - Scope of Total Income - Exempted Income - Agricultural Income - Capital Income and Expenditure - Revenue Income and Expenditure

Unit-II: Income from Salary

Meaning – Definition - Basis of Charge– Advance Salary – Arrears of Salary – Allowances – Perquisites– Provident Funds - Profits in Lieu of Salary – Gratuity -Commutation of Pension - Encashment of Earned leave -Deductions from Salary u/s 16 – Problems on Income from Salary (Only Individual Assessee).

Unit-III: Income from House Property

Basis of Charge; Deemed Owners, Exempted Incomes from House Property –Composite Rent - Annual Value – Determination of Annual Value – Treatment of Unrealized Rent – Loss due to Vacancy – Deductions from Annual Value – Problems on Income from House Property.

Unit-IV: Computation of Total Income

Income from Business or Profession, Capital Gains, Other Sources (Theory only) and deductions u/s 80C, 80D and 80G - Simple Problems on Computation of Total income of an Individual Assessee.

Unit-V: Tax Management, Administrative Procedure and ICDS

Tax Deduction at Source (excluding sections relevant to non-residents), Tax Collected at Source, Advance Tax - Administrative Procedures - Return & PAN, Intimation, Brief concepts of Assessment u/s 140A, 143 and 144 – ICDS: Basic Concepts of ICD

Reference Books:

1. B. B. Lal and Vashist, Direct Taxes, Konark Publisher (P) ltd.
2. Dinkar Pagare, Income Tax Law and Practice, Sultan Chand &Sons, New Delhi.
3. Dr. Vinod Sighania, Direct Taxes, Taxman publication, New Delhi
4. Gaur V.P & Narang K.L., Income Tax Law and Practice, Kalyani Publishers, New Delhi.
5. Mehrotra and Goyal, Direct Taxes – Law and Practice, Sahitya Bhavan Publication.
6. Income Tax Law and Practice: Gaur and Narang
7. Vinod K. Singhania: Students' Guide to Income Tax, Taxman Publications, New Delhi.
8. Government of India- Income Tax Manual 5. Income Tax Act and Latest Finance Act

Group-(AF) Accounting and Finance

Course - SC-2.6 (AF): Accounting for Specialized Institutions

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: The course objective is to provide a critical understanding of accounting practices of various institutions, which enables students to develop accounting skills that will help them to practice the course in an effective manner.

Unit I- Accounting of Insurance Companies:

Legal provisions as per Insurance Act, 1930, LIC Act 1956 and GIC Act 1972 revenue account and final account of life and non life insurance companies, IRDA Act 1938 and provisions relating to final accounts.

Unit II- Double Account System:

Meaning of double account system, difference between single and double account system, advantage and disadvantages of double account system, preparation of final accounts of electricity companies.

Unit III- Accounting of Banking companies:

Legal provisions as per Banking Regulation Act, Narasimhan Committee recommendations and NPA treatment, classification of banking companies' assets, capital adequacy ratio and preparation of financial statements.

Unit IV-Accounting for Hotels:

Meaning, objectives and significance of hotel accounting: Visitor's ledger: methods of accounting and preparation of final accounts of hotel undertakings.

Unit V-Accounting for Hospitals:

Meaning, Need and significance of hospital accounting; forms of balance sheet, income statement-capital and revenue expenditure, and adjustments.

Reference Books:

1. S.N. Maheshwari, Advanced Accounting, Vol.II, Vikas Delhi.
2. Shukla and Grewal, Advance Accounting, Vol.II, S. Chand and Sons, New Delhi.
3. R.L. Gupta and Radhaswamy Advanced Accounting, Vol.II, Sultan Chand and Sons, New Delhi.
4. Hrishikesh Chakraborty, Advanced Accounting, Vol.II, Oxford Publishing House, New Delhi.
5. Jain and Narang, Advanced Accounting, Vol.II, Kalyani, New Delhi.
6. C.T. Horngren Introduction to Financial Accounting, PHI, New Delhi.
7. Mark, E., Harkins, International Financial Reporting and Analysis, TMH, New Delhi.
8. Thomas, P. Edmonds, Fundamentals of Financial Accounting Concepts, TMH, New Delhi.
9. Robert Libby, Financial Accounting, TMH, New Delhi.

Note: Latest edition of readings may be used

Group-(CT) Costing and Taxation

Course - SC-2.6 (CT): Production and Operations Management

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To impart the knowledge regarding production and operations management techniques, process, tools, and acquaint the students with the skills of managing production and operations in organizations.

Unit-I: Introduction:

Historical Evolution of Production and Operations Management, production, production system and its classification, Production Management, Operations and operations management – objectives, Scope of Production and Operations Management, Characteristics of modern productions and operations, Duties and responsibilities of production manager, Recent trends in production and operations management, Managing Global Operations.

Unit-II: Plant Location and Layout:

Meaning, Need for Selecting a Suitable Location, freedom of location, errors in selection of location, Factors Influencing Plant Location, Steps in location selection, plant location models. **Plant Layout**- meaning, objectives and principles, Classification of Layout, Design of product, process and service layout, Methods of selection of layouts.

UNIT-III: Purchase Management:

Meaning, definition, objectives and functions of purchasing, Parameters of Purchasing, purchasing cycle, purchasing policies, Make or buy decisions, Role of Purchase manager, Vendor rating. **Inventory Management**- Meaning of Inventory, Reasons for Keeping Inventories, Objectives of Inventory Control, Benefits of Inventory Control, Techniques of Inventory Control, Inventory Model.

Unit -IV: Design of Work Systems:

Work Study- Meaning, definition, objectives, benefits and procedure. **Work measurement**- meaning, definition, benefits and techniques. Productivity and Employees. **Scheduling** - Principles of Scheduling, Scheduling Strategies, Types of Scheduling, Scheduling Methodology.

Unit-V: Quality Management:

Inspection- meaning, objectives and scope, Quality Control, Fundamental Factors Affecting Quality, Seven Tools for Quality Control, Statistical Quality Control- meaning, advantages and techniques, Types of Control Charts, construction of control charts, Total Quality Management.

Reference Books:

1. K Aswathappa K Shridhara. Bhat, Production and Operations Management, Himalaya Bombay.
2. Chary, Production and Operations Management, TMH, New Delhi.
3. Richard B. Chase, Production and Operations Management, TMH, New Delhi.
4. Mahadevan, The New Manufacturing Architecture, TMH, New Delhi. Nair.
5. Adam and others, Productions and Operations Management, PHI, New Delhi.
6. Chunawalla and Patel, Production and Operations Management, Himalaya, Bombay.

Group-(HM) Human Resource and Marketing

Course – SC -2.6 (HM): Consumer Behaviour

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To provide an in-depth understanding of the consumer buying process and their determinants asrelevant for marketing decision making.

Unit-I: Consumer Behaviour

Importance and Nature of Consumer Behaviour; Types of Consumers and their Role; Consumer Behaviour and Marketing Concepts; Changing Profile of Indian Consumers and New Consumption Patterns; Conducting Consumer Research - Overview of Process, Complexities and Issues.

Unit-II: Consumer Decision Making Process

Buying Motives; Buying Roles; Consumer Buying Process; Stages and Levels of Consumer Decision Making; Business Buying Behaviour - An Overview; Theories of Motivation and its Application.

Unit-III: Personal Factors Affecting Consumer Behaviour

Demographic Characteristics**;** Family, Family Life Cycle and Consumer Decision Making; Household Influence on Consumer Buying Behaviour; Needs and Motivation; Perception; Perceptual Mapping and Positioning; Value Perceptions; Attitude and Attitude Change; Attitude Models; Learning and Learning Theories; Consumer involvement- Antecedents and Consequences; Personality- Concept and Personality Theories; Psychographics; Life Style and Applications.

Unit-IV: Socio - Cultural Determinants of Consumer Behaviour

Reference Group Influences- Theories of Reference Group and Applications; WOM Communication and Opinion Leaders; Social Class and Social Class Stratification in India; Understanding Cultural and Sub- Cultural influences on Individual, Norms and their Role, Customs, Traditions and Value System; Consumer Socialization and Inter-Generational Influences; Cross-Cultural Dimensions of Consumer Behaviour.

Unit-V: Models of Consumer Behaviour and Business Buying Behaviour

An Overview of Contemporary Models; Deterministic and Probabilistic Approaches; Contemporary Models of Consumer Behaviour.

Reference Books:

1. Assael, H. Consumer Behaviour and Marketing Action. New Delhi: Cengage Learning.
2. Blackwell, R. D., Miniard, P. D., & Engle, J. F. Consumer Behaviour. USA: Thomson-South Western.
3. Evans, M., Jamal, A., & Foxall, G. Consumer Behaviour, New Jersey: John Wiley & Sons.
4. Hawkins, D. I., Mothersbaugh, D. L. & Mookerjee, A. Consumer Behavior: Building Marketing Strategy. New Delhi:McGraw-Hill.
5. Lindquist, J. D., & Sirgy, J. M. Consumer Behaviour. New Delhi: Cengage Learning.
6. Lindstrom M. Buyology: Truth and Lies About Why We Buy and The New Science of Desire. New York: Business Books.
7. Paul, P. J., & Olson, J. C. Consumer Behaviour and Marketing Strategy. McGraw Hill Education.
8. Schiffman, L. G., & Kanuk, L. L. Consumer Behaviour. Prentice Hall.

Semester – III

Course - HC-3.1: Business Research Methodology

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: The objective of the course is to acquaint the students with the process and techniques of conducting research.

Unit-I: Nature and Scope of Business Research

Meaning of Research and Nature, Research Concepts, Constructs, Proportions, Variables and Hypothesis, Theory Building, Decision Making, Types of Business Research, Importance of Research in Business Decisions, Business Research Process and Business Research Design.

Unit-II: Data Collection in Business Research

Methods and Techniques of Data Collection, Sampling and Sampling Design, Sampling Theory, Parameter and Statistic, Objectives of Sampling Theory, Sampling Distribution, Questionnaire Designing and Development. Attitude Measurement and Scaling. Application of SPSS.

Unit-III: Statistical Tools used in Business Research

The Concept of Standard Error(SE), Point Estimation and Internal Estimation, Ordinary Least Squares (OLS) Method of Estimation, Hypothesis Testing Procedure, Null Hypothesis and Alternative Hypothesis, The Two Mutually Complementary Approaches for Hypothesis Testing: Confidence Interval and Test of Significance, Type I and Type II Errors, Two-tailed and One tailed Tests of Hypothesis, Sampling of Attributes and Tests of Hypothesis for Attributes, Tests of Hypothesis in respect of Samples Concerning Statistics of Variables (Large Samples), Tests of Hypothesis in respect of Samples Concerning Statistics of Variables (Small Samples): The T-Test, Z-Test, The F-Test and Analysis of Variance (ANOVA): One-way and Two-way Classifications.

Unit-IV: Non-Parametric Tests

Meaning, Advantages; The Chi-square Test, The Sign Test, The Mann-Whitney U Test (in case of Large Sample only), the Kruskal – Wallis H Test (in case of Large Sample only), the Runs Test for Randomness (in case of Large Sample only), The Wilcoxon Matched Pairs Signed – Ranks Test (in case of Large Sample only).

Unit-V: Research Report Writing

Importance, Essentials, Structure, Types, Report-writing: Stages in Preparing Research Report, Organization, Write up, Steps in Drafting Report, Presentation of Business Research Report, References and Citation Methods, Footnotes and Bibliography, Modern Practices: Ethical Norms in Research, Plagiarism, Role of Computers in Research.

References Books:

1. Alan Bryman, Emma Bell, Business Research Methods.
2. C.R. Kothari, Research Methodology, New Age International Publications.
3. Cooper D R and Schindler P.S: Business Research Methods, TATA McGraw Hill New Delhi
4. Dipak Kumar Bhattacharyya, Research Methodology, Excel Books.
5. Gupta .S.P, Statistical Methods, Sultan Chand, New Delhi.
6. Gupta S C: Fundamentals of Statistics, Himalaya Publishing House Mumbai
7. Hooda, R.P: Statistics for Business and Economics, Macmillan, New Delhi
8. K.V.Rao, Research Methodology in Commerce and Management, Sterling Publications Ltd., New Delhi
9. Krishnaswami O.R., and Rangantham, Methodology of Research, Himalaya Publishing House.
10. Michel V. P., Research Methodology in Management, Himalaya, Bombay
11. William Zikmund, Business Research Methods, Thomson Publication.

Course - HC-3.2: International Financial Management

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To expose the students to study the various aspects of foreign exchange market and different aspects of international financial management.

Unit-I: Introduction to International Financial Management

Meaning, Objectives, Global Financial Manager, Role of Global Financial Manager, Functions of International Financial Management, Scope of International Financial Management and Relationship between Domestic and Financial Management.

Unit-II: Foreign Exchange Market

Meaning and Objectives, Features of Foreign Exchange Market, Foreign Exchange Rates, Quotations and types of Quotations, Dealers in Foreign Exchange Market, Foreign Exchange Transactions, Sale and Purchase Transactions - Spot and Forward Transactions, Hedging, Speculation and Arbitrage Operations, Forecasting Foreign Exchange Rate and Equilibrium in Foreign Exchange Market.

Unit-III: Foreign Exchange Risk Management

Meaning and Objectives, Foreign Exchange Risk and Exposure, Types of Foreign Exchange Risks, Transaction, and Economic Exposure, Internal and External Techniques of Foreign Exchange Risk Management.

Unit-IV: Financing for Foreign Operations

Sources of Finance, Euro Markets, Special Financial Vehicles, Interest Rate and Currency Swaps, Debt, Equity Swaps, Internal Leasing, and Designing the Global Financing Strategy.

Unit-V: International Financial Management for MNCs

Cost of Capital and Capital Structure of MNCs, International Capital Budgeting, International Working Capital Management.

Reference Books:

1. Adrin. Buckley, Multinational Finance, Hcrit, New Delhi.
2. Alan C. Shapiro, Multinational Financial Management Allyn and Pacon Ioc, Boston,
3. Apte P.G. International Financial Management, Tata Mcgraw Hill, New Delhi,
4. David H. Blake- The Politics of Global Economic Robert S. Walters Relations, Prentice Hall.
5. Ian H. Giddy, Global Financial Markets.
6. Kirt C. Butler, Multinational Finance Thomson South Western.
7. Madura, Jeff, International Financial Management, West Publishing Company.
8. Raymond Vemon-Manager in the International Economy, Louis T Wells Jr. Prentice Hall,
9. Reid W. Click and Coval, International Financial Management, Prentice Hall India.

Course – HC-3.3: Organizational Behaviour

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To develop theoretical and practical understanding of different components of individual and group behavior in organizational setting.

Unit-I: Introduction

Meaning and Definition, Nature, Scope, Challenges and Opportunities for organizational behavior, Disciplines contributing to the field of Organizational Behavior, Organizational Behavior Models. Positive Organizational Behavior.

Unit-II: Individual Behavior

Meaning, Fundamentals, Reasons for Difference, Importance, Causes of Human Behavior; Perception; Personality; Meaning, Factors Influencing and Types of Personality. Attitude; Meaning, Changes in Attitudes, Role and Types. Learning; Meaning, Process, Difficulties and Importance.

Unit-III: Group Behavior

Group – Determinants, Process, Task, Types, Cohesiveness and Productivity; Group Decision Making; Team Building; Group Conflicts and Negotiations, Stress Management, Decision Making, Effective Communication.

Unit-IV: Motivation and Leadership

Motivation – Meaning and Definition, Need for Motivation, Motivational Process, Motivational Tools, Theories of Motivation. Leadership – Leader and Leadership, Characteristics of Good Leader, Leader v/s Manager, Leadership Skills, Outstanding Leader, Leadership under Cross - Cultural Environment, Leadership Theories, Leadership Styles.

Unit- V: Organizational Change and Development

Organizational Change: Approaches, Planning and Implementing Change, Resistance to Change and its management. Organizational Development: Meaning, Characteristics, Objectives, Models, Interventions. Work Life Management.

Reference Books:

1. Greenberg, Baron (2010). Behaviour in Organisations: Understanding and Managing the Human Side of work. Pearson
2. Herzberg, F. (1968). One More Time: How Do You Motivate Employees? Harvard Business Review.
3. K. Ashwathappa, Organisational Behaviour, Himalaya Publishing House.
4. Luthans, Fred. Organizational Behaviour, McGraw-Hill, Indian Edition.
5. Pareek, U. & Khanna, S. Understanding Organizational Behaviour. Oxford University Press.
6. Robbins, Stephen P., TA Judge & Neharika Vohra (2013). Organisational Behaviour, Pearson.

Course – HC-3.4: Innovations in Accounting

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: The course intends to provide accounting skills related to various accounting practices to the students. It develops the minds of students to get acquaint with innovative accounting practices.

Unit I: Inflation Accounting- Limitations of historical Cost accounting ;meaning ,objectives and Methods of accounting for Inflation-CPP and CCA methods- measurement of net monetary gain, COSA, gearing adjustment and preparation of annual accounts as per CPP and CCA; Guidance note of ICAI on prince level accounting.

Unit II: Human Resource Accounting

Need and Development, Concept of Human Resource Accounting, Importance and objectives of HRA, Suggested Methods for Valuation of Human Resources, Financial Disclosure of Human Resources, HRA Practices in India.

Unit-III: Social and Environmental Accounting

Concept and Objectives of Social Accounting, Limitations of Conventional Accounting, Social Accounting Measures and Approaches, Preparation of Social Income Statement and Balance Sheet, Social Accounting and Reporting Practices in Indian Context; Environmental Accounting - Environmental Concerns and Need for Green Accounting ; Concept and Objectives of Environmental Accounting, Shadow Pricing Techniques and Preparation of Environmental Balance Sheet.

Unit-IV: Accounting for Employee Stock Options

Employee Stock Option Scheme, The Companies (Share Capital And Debentures) Rules, 2014; SEBI (Share Based Employee Benefits) Regulations, 2014; Accounting Treatment for Employee Stock Option; Employee Stock Purchase Scheme, its Accounting Treatment and Valuation Using Option Pricing Model.

Unit-V: Forensic Accounting

Meaning, Definition, Requirements to Become a Forensic Accountant, Essential Skills; Fraud Schemes - Skimming, Lapping, Creating Ghost Employees, Using Shell Companies, Shrinkage of Inventory, Management of Embezzlement, Security Fraud, Uncovering the Truth; Forensic Accounting Methods, Auditing and Forensic Accounting; Creative Accounting. Creative Accounting: Concept and Prevention.

Reference Books:

1. Shirin Rathore, International Accounting, Prentice Hall of India.
2. Sujit Sikidar and Alok K. Pramanik, Accounting and Auditing, Deep and Deep, New Delhi.
3. Taxmann's Accounting Standards and Corporate Accounting Practices by T. P. Ghosh
4. V.K. Saxena and C.D. Vashist, Advanced cost and Management Accounting — Sultan Chand and Sons, New Delhi.
5. R.L. Gupta and M. Radhaswamy, Advanced Accountancy -Sultan Chand and Sons, New Delhi.
6. S N Maheshwari- Vol II, Advanced Accounting Vikas Publications, New Delhi.
7. S K Chakravarthy, Topics in Accounting and Finance, OUP, New Delhi.
8. Thomas G Evans ,Accounting Theory: Contemporary Accounting Issues, Cengage Learning, and New Delhi.
9. N P Agarwal and S C Jain, Contemporary Issues in Accounting, RBSA Publishers, Delhi
10. Shashi Gupta and Arun Mehta,Contemporary Issues in Accounting, Kalyani Publishers Ludhiana.

Open Elective Courses

Course - OEC - 3.5.1: Fundamentals of Banking

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: The main objective of this course is to introduce the students to the basic concept of banking as a financial intermediation service and as a financial institution.

Unit - I: Evolution of Bank

Bank- Origin, Meaning, and Definition; Organizational Structure of Banks - Evolution of Banking in the World and in India - Importance of Banking.

Unit-II: KYC, AML and Account Opening Process

Importance of KYC and AML, Why RBI insists on KYC procedures, the role of Banks in Implementing KYC, penalties for non-adherence; Different stages of money laundering, Understand the importance of AML at the time of account opening; Customer acceptance Policy: low, medium and high risk customers; Customer verification procedure, KYC Documents required for account opening, verification process; Account opening formalities, Forms, documents, procedures; Risk Management, KYC, AML – monitoring transactions and reporting of suspicious transactions.

Unit -III: Structure and function of Indian Banking System

Reserve Bank of India, Commercial Banks, Regional Rural Banks; Co-Operative Banks and Development Banks - Primary Functions of Bank - Accepting Deposits and Granting Loans & Advances - Secondary Functions of Bank-Agency Functions and General Utility Functions.

Unit-IV: Negotiable Instruments

Definition, Meaning and Characteristics of Negotiable Instrument, Cheque - Types of Cheque - Bearer, Ordered and Crossed; Types of Crossing-General and Special; Endorsement - Meaning and Types.

Unit-V: Technology in Banking

Need and Importance of Technology in Banking, ATM, Credit Card, Debit Card, Tele Banking - Net Banking, SWIFT (Society for Worldwide Interbank Financial Telecommunication), Concept of Core Banking Solution.

Reference Books:

1. Basics of Banking, Indian Institute of Banking & Finance- Taxman Publication
2. Bhole L.B.: Financial Institutions and Markets, TMH, New Delhi
3. Digital Banking – Indian Institute of Banking and Finance –Taxman Publications
4. Gordon- Natrajan: Banking Theory and Practice: Himalaya Publishing House.
5. Machirajuh.R.:Indian Financial System, Vikas, New Delhi.
6. N. S. Toor- Handbook of Banking Information –Skylark Publications.
7. R. Ramachandran-Banking Theory and Practice –MJP Publications.
8. Shekhar and Shekhar: Banking Theory and Practice, Vikas, New Delhi.

Course - OEC- 3.5.2: Personal Financial Planning

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To prepare the students to manage their personal finance effectively and efficiently.

Unit-I: Introduction to Financial Planning

Process of Financial Planning, Time Value of Money, Determinants of Savings, Sources of Personal Finance and Cost of Capital, Techniques of Personal Financial Management

Unit-II: Tax Saving Schemes and Savings Schemes

Bank Deposits, Post-Office Saving Schemes, NDFC Deposits, Kisan Vikas Patra, National Savings Certificates, Employee Provident Fund, Public Provident Fund.

Unit-III: Pre-Cautionary Investments

Health Insurance: Types, Operations and Procedure. Life Insurance: Origin, Types, Operations and Procedures, Selection of Type of Insurance Policy. Pension Funds - New Pension Scheme.

Unit-IV: Investment Planning

Meaning and Definition, Need and Importance of Investment, Investment Avenues - Bank Deposits, Government Bonds, Real Estate, Gold and Silver, Equity Shares, Debentures and Mutual Funds; Factors affecting Selection of Investment Avenues; Risk and Return Trade Off; Portfolio Construction and Management.

Unit-V: Tax Planning

Income, Agricultural Income, Heads of Income, Deduction U/S 80 C, Gross Total Income, and Tax Liability, Tax Deducted at Source, Income Tax Returns and Filing Online Returns.

Reference Books:

1. Financial Education by Reserve Bank of India – RBI.org.
2. Girish Ahuja and Ravi Gupta: Systematic Approach to Income Tax: Sahitya Bhawan Publications, New Delhi.
3. Information Broachers of Post Offices, Banks, Mutual Funds, Insurance Companies
4. Internet Sources - BSE, NSE, SEBI, RBI, IRDA, AMFI Etc.
5. Kevin : Security Analysis and Portfolio Management: Prentice Hall of India Private Limited
6. Pandian Punithavathy : Security Analysis and Portfolio Management: Vikas Publishing House Private Limited
7. Personal Finance by Jack R. Kapoor, Les R. Dlabay and Robert J. Hughes, Tata Mcgraw-Hill Publishing Company Ltd. New Delhi.
8. Personal Finance Columns in the Economic Times, The Business Line and Financial Express Daily News Papers.
9. Singhania V.K: Student's Guide to Income Tax: Taxmann, Delhi.

Group-(AF) Accounting and Finance

Course - SC-3.6 (AF): Financial Reporting Standards

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: The course aims to provide knowledge to the students about developments in accounting financial reporting, and understanding of accounting and reporting issues at the national and international level.

Unit-I: Introduction

Nature, Objectives, Benefits and Purpose of Report; Qualitative Characteristics of Accounting Information; Conceptual Framework- FASB and IASB. GAAPs: Meaning and Need of Accounting Principles; Structure of GAAPs - Accounting Assumptions; Accounting Concepts; Accounting Principles and Accounting Conventions.

Unit-II: International Financial Reporting Standards (IFRSs)

Role of IASB; Arguments for Global Convergence; Required Disclosure as per IFRSs; Achievements of IASB and Obstacles in Convergence; Difference between IFRSs and Indian Accounting Standards; US GAAP.

Unit-III: Dimensions of Corporate Reporting

Introduction, Objectives of Financial Reporting, Investment Decision - Making, Management Accountability, Scope of Financial Reporting, True Blood Report (USA), The Corporate Report (UK), Financial Accounting Standards Board (FASB) of USA, The Stamp Report, General Purpose Financial Reporting, Types of Financial Statements, Benefits of Financial Reporting.

Unit-IV: Reporting Practices

Segment Reporting - Introduction, Need, Usefulness of Allied Users, Objectives , Terminology, Scope, Reportable Segments, Segment Accounting Policies, Disclosure, Advantages, Disadvantages, Segment Reporting in India.

Unit-V: Accounting and Reporting of Financial Instruments

Meaning, Recognition, De-recognition and Offset, Compound Financial Instruments, Measurement of Financial Instruments, Hedge Accounting, Disclosures; Financial Reporting by Non Banking Financial Companies, Merchant Bankers, Stock and Commodity Market Intermediaries.

Reference Books:

1. A Student's Guide to International Financial Reporting Standards by Clare Finch, Kalpana Publishing.
2. Ahmed Riahi Belkaoui, Accounting Theory, Thomson Learning.
3. ChristoperNobes. et al, Comparative International Accounting, Prentice Hall
4. E.S. Hendriksen, Accounting Theory, Richard D. Irwin.
5. First lesson to International Financial Reporting Standards Beginners Guide by MP Vijay Kumar, Prime Knowledge Services.
6. Gray S J. Campell, L Shaw JC, International Financial Reporting, Mac Milan.
7. Henry I- Wolk, Jere R. Francis and Michael G- Tearney, Accounting Theory: A Conceptual and Institutional Approach, South Western Publishing Co.
8. ICAI, Compendium of Statements and Standards on Accounting.
9. IFRS Concepts and Applications by Kamal Garg, Bharath Law House Private Limited
10. IFRS Explained – A Guide to International Financial Reporting Standards by BPP Learning Media
11. IFRS for Finance Executives by Ghosh T P, Taxman Allied Services Private Limited
12. IFRS for India, Dr.A.L.Saini, Snow white publications
13. IFRS: A Quick Reference Guide by Robert J. Kirk, Elsevier Ltd.
14. Jawahar Lal, Accounting Theory and Practice, Himalaya Publishing House, New Delhi.
15. L.S. Porwal, Accounting Theory, McGraw Hill Education (India) Ltd.
16. P.Mohana Rao, Accounting Theory and Standards, Deep & Deep Publications Pvt. Ltd.
17. Roadmap to IFRS and Indian Accounting Standards by CA Shibarama Tripathy

Group-(CT) Costing and Taxation

Course - SC-3.6 (CT): Corporate Tax Planning

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: The course aims at making students conversant with the concept of corporate tax laws and also their implications on tax planning and management, and to familiarize with latest provisions of Indian corporate tax laws and related judicial verdicts.

Unit-I: Basic Concepts

Income Tax, Corporate Tax; Assessee; Assessment Year; Previous Year; Company - Different kinds of Companies: Indian Company, Foreign Company, Widely Held Company, Closely Held Company, Domestic Company and Incidence of Tax.

Unit-II: Tax Planning and Company Promotion

Meaning of Tax Planning, Tax Avoidance, Tax Evasion and Tax Management; Features and Scope for Tax Planning; Business Location and Tax Planning; Nature of Business and Tax Planning: FTZ, Units in SEZ, 100% EOU and Infrastructure Development.

Unit-III: Computation of Corporate Tax

Carry Forward and Set Off of Losses in the case of Companies, Computation of Taxable Income of Companies; Computation of Corporate Tax Liability; Minimum Alternate Tax; and Tax on Distributed Profits of Domestic Companies.

Unit-IV: Tax Planning with Reference to Managerial Decisions

Financial Decisions: Capital Structure Decisions; Dividend Policy; Bonus Shares and Capital Gains; Bond Washing Transactions; Own or Lease of an Asset, Installment or Hire Purchase, Make or Buy Decisions, Buying an Asset with Own Fund or Borrowed Fund and Repair, Replace, Renewal or Renovation; Shutdown or Continue: Tax Planning in respect of Amalgamation or De-Merger of Companies, Conversion of a Firm into a Company; Conversion of Sole Proprietorship into Company, Conversion of Company into Limited Liability Partnership.

Unit-V: Tax Management and Administrative Procedures

E-commerce Transaction and Liability in Special Cases; Tonnage Taxation, TDS; Advance Payment of Tax with reference to Corporate Assessee; TCS; Administrative Procedure; Assessment- Procedures and Types of Assessment; Return on Income; Statement of Financial Transaction (SFT). E-Filing: Appeal and Revision; Penalties.

Reference Books

1. Vinod K Singhania and Kapil Singhania, Direct Tax Planning and Management, Taxman.
2. Vinod, K. Singhania, Direct Taxes - Law and Practices, Taxman.
3. Mehrotra, H. C, Income Tax Law and Accounts including Tax Planning, Sahitya Bhawan Publications.
4. Narang and Gaur, Income Tax, Himalaya Publishing House.
5. Prasad. B, Direct Tax- Law and Practices, Vishwa Prakashana.
6. T.N.Manoharan, Students Handbook on Income Tax Law, Snow White Publication.
7. Harshad C Chowdhary, Central Excise and Customs, Ashodha Publications.
8. E. A. Srinivas, Corporate Tax Planning, Tata McGraw Hill.
9. V.S.Sundaram, Commentaries on the Law of Income- Tax in India, Law Publisher, Allahabad.
10. Meherotra and Goyanka, Direct Taxes- Tax Planning and Management, Sahitya Bhawan

Group-(HM) Human Resource and Marketing

Course – SC -3.6 (HM): Knowledge Management

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objectives: To teach the students about the fundamentals of knowledge management and application of thesame in the knowledge society.

Unit-I: Knowledge Management

Concept of Knowledge Management - Features, Scope, Significance - Techniques and Types of Knowledge Management, Road Map of Knowledge Management - Implementation of Knowledge Management Guiding Principles.

Unit-II: Drivers of Knowledge Management

Pillars of Knowledge Management and Sharing, Knowledge Based Products: The way of the Future, Layers of Knowledge Management, Critical Success Factors for Knowledge Management Implementations.

Unit-III: Information Technology and Knowledge Management

Information Technology, Hardware, Internal Technologies, Intranet, Uses, Extranets, Software – (Packaged System)- E-Commerce & Knowledge Management, CRM and Knowledge Management - Measurement of Knowledge Management (TQM / Bench Marking).

Unit-IV: Human Resource Management and Knowledge Management

Knowledge Worker-Managing a Knowledge Worker- Strategies for Human Capital and Talent Management-Job Hopping- Brain Drain and Brain Grain; The Migration of Knowledge Workers- Competitive Advantage through Performance Management.

Unit-V: Cross Functional Areas and Knowledge Management

Knowledge Management and Finance – Knowledge Management and Marketing-Traditional Farmers to New Age Markets - e-Choupal Initiates – Knowledge Management and Call Centre - Knowledge Management System in a Consultancy Firm.

Reference Books:

1. Alle, V. The Knowledge Evolution: Building Organisational Intelligence, London: Butterworth- Heinemann
2. Baker W. Achieving Success through Social Capital: Tapping Hidden Resources in your Personal and Business NetworksNY: Wiley.
3. Brown J. S. & Duguid P. The Social Life of Information. Boston: Harvard Business School Press.
4. Davenport T. H. & Prusak L., Working Knowledge: How Organisations Manage What They Know Boston: HarvardBusiness School Press.
5. Dixon N. Common: How Companies Trive by Sharing What They Know Boston: Harvard Business School Press.
6. Duarte D. & Snyder N. Mastering Virtual Teams: Strategies, Tools and Techniques That Succeed San Francisco: Josey Bass
7. Leonard D. Tools for Virtual Teams: A Team Fitness Companion Washington D. C. American Society for Quality. Nonaka I. & Takeuchi H.
8. The Knowledge – Creating Company NY: Oxford University Press.

IV Semester
Course - HC-4.1: GST and Customs

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To enable the students to understand the principles underlying the Indirect Taxation Statutes (with reference to Goods and Services Tax Act, Customs Act) and their impact on business decision making

Unit-I: Introduction

Tax Invoice; Credit and Debit Notes; E-Way Bill, Procedure for Generation of E-Way Bill; Accounts and Records; Electronic Cash Ledger, Manner of Utilization of Amount in Electronic Cash Ledger, Electronic Credit Ledger-Manner of Utilization of ITC, Electronic Liability Ledger-Order of Discharge of Tax and Other Dues.

Unit-II: Payment of Tax, TDS and TCS under GST

Computation of Tax Liability and Payment of Tax; Interest on Delayed Payment of Tax; Refund of Tax; Tax Deduction at Source (TDS); Collection of Tax at Source (TCS); Computation of Interest on Delayed Payment of Tax.

Unit-III: Matching Concept

Matching, Reversal and Reclaim of Input Tax Credit; Matching, Reversal and Reclaim of Reduction in Output Tax Liability; Returns under GST; Assessment, Types; Furnishing of Returns, First Return, Revision of Return, Final Return, Default in Furnishing Return Information; Penalty/Late Fee; Appeal to Appellate Authority.

Unit-IV: Customs Law

Introduction, Definitions, Circumstances of Levy; Types of Duties, Basic Customs Duty, IGST (Replacement of CVD and Special CVD), Protective Duties, Safeguard Duty, Countervailing Duty on Subsidized Articles, Anti Dumping Duty; Exemption from Customs Duty.

Unit-V: Valuation under Customs

Introduction, Valuation of Imported Goods; Valuation of Export Goods; Import Export Procedure: Import Procedure, Export Procedure; Deemed Exports; Duty Drawback, Negative List of Duty Drawbacks; Import by 100% Export Oriented Units; Import by SEZs; Project Import.

Reference Books:

1. C A Rajat Mohan, Illustrated Guide to Goods and Service Tax, Bharat Publication.
2. CGST Act
3. IGST Act.
4. SGST Act
5. V P Agarwal, H C Meherotra, Goods and Services Tax and Customs Act, Sahithya Bahavan Publication.
6. V P Agarwal, H C Meherotra, Goods and Services Tax, Sahithya Bahavan Publication.
7. V S Datey, All about GST, Taxmann's Publication
8. V S Datey, E-Way Bill, Taxmann's Publication.
9. V S Datey, GST Ready Reckoner, Taxmann's Publication.
10. Vandana Bangar and Yogendra Bangar, Beginner's Guide to GST.
11. Vinod K Singhania, Student Guide to GST and Custom Law, Taxman

Course - HC-4.2: Corporate Ethics and Governance

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To teach and familiarize the students with the knowledge of ethics, emerging trends in corporate governance practices in Indian context.

Unit-I: Business Ethics

Meaning of Business Ethics**,** Nature and Goals of Business Ethics, Ethical Values of Organization and Employees Attitudes, Culture and Ethics, Ethics and Law, Managerial Philosophy and Organization; Types of Ethics.

Unit-II: Ethical Theories

Theory of Teleological, Deontological, System Development; Universalism v/s Ethical Relativism, Kantianism v/s Utilitarianism; Virtue Ethics; Socialism and Individual Ethics.

Unit-III: Managing Ethical Dilemmas in Business

Meaning, Nature and Significance of Ethical Dilemmas, Ethical Dilemmas v/s Ethical Issues, Ethics in Marketing; Ethics in Finance and Accounting Practices; HRM Practices and Ethical Implications, Ethical Issues Relating to Information Technology and Ethics in the Global Business.

Unit-IV: Introduction to Corporate Governance

Meaning, Nature, and Reasons for Corporate Governance; Theories of Corporate Governance, Mechanism of Corporate Governance, Models of Corporate Governance, Issues of Governance, Regulatory Frame Work of CG in India; Corporate Failure and Scams, Concept of Whistle Blowing and Corporate Governance Initiatives in India

Unit-V: Corporate Board and Committees

Meaning, Objectives, Types and Functions of Board; Determinants of Board Effectiveness, Role and Responsibilities of Board Chairman and CEO. Board Committees: Need, Objectives and Types of Board Committees; Committees - Cadbury, OECD Principle of Governance, Governance Committees in India - Birla, Naresh Chandra, Narayana Murthy, Irani Committee's Recommendations; Cluase-49; Role of SEBI in Governance and Recent Issues in Corporate Governance.

Reference Books:

1. A.C. Fernando Corporate Governance: Principles, Policies and Practices, Pearson.
2. A.C. Fernando, Business Ethics: An Indian Perspective. Pearson Education
3. A.G. Robert, Monks and Neil Minow, Corporate Governance, Wiley.
4. Blowfield, Michael, and Alan Murray, Corporate Responsibility, Oxford University Press.
5. Chakraborty S.K. Ethics in Management, Oxford University Press, New Delhi
6. P. Chottopadhyay, Corporate Mis-Governance, IAA Research Foundation
7. R.C.Shekhar Ethical Choices in Business, Response Book, New Delhi
8. R.V.Badi & N.V.Badi Business Ethics, Vrinda Publications, New Delhi
9. Rituparana Raj A Study in Business Ethics, Himalaya, Bombay

Course - HC-4.3: Techniques of Costing

Weekly Teaching Hours: 4 **Examination Duration: 3 Hours**

Objective: To enhance the student's capabilities in the field of application of costing techniques.

Unit-I: Budgetary Control

Meaning and Objectives of Budget, Budgeting and Budgetary Control; Requisites of Budgeting Process- Budget Period, Budget Committee and Budget Facts Classification and Preparation of Functional and Master Budgets; Cash Budget; Fixed and Flexible Budgeting Process; Performance, Programme and Zero-Base Budgeting Methods; Advantages and Limitations of Budgeting. (Theory and Problems)

Unit-II: Standard Costing

Meaning, Objectives and Significance of Standard Costing, Industrial Application; Budgetary Control V/S Standard Costing; Prerequisites of Standard Costing-Standard Committee; Types and Fixation of Standard Costs; Analyses of Variance, Material, Labour Overhead, Sales and Profit Variances; Reconciliation of Profits; Disposal and Accounting Treatment of Variances; Investigation of Variances; Reporting of Variances. (Theory and Problems)

Unit-III: Transfer Pricing

Meaning, Objectives and Importance of Transfer Pricing; Transfer Pricing Methods-External Market Price, Negotiated Transfer Prices; Standard V/S Actual Costs; Choosing Right Transfer Pricing Method; Tax Issues in Transfer Pricing; Transfer Pricing in the Service Industry. (Theory and Problems)

Unit - IV: Uniform Costing and Inter Firm Comparison

Meaning, Nature, Scope, Objectives, Requisites, Application and Features of Good UC system - Inter Firm Comparison: Meaning, Purpose, Requisites, Ratios, Advantages and Disadvantages. (Theory)

Unit - V: Lean System

Lean System: Meaning and Principles of Lean System, Steps in Lean Thinking, Lean Production System, Lean Management Accounting, Usefulness of Lean Management Accounting - Advantages and Limitations (Theory).

Reference Books:

1. Arun Prasad Roy Chowdhury, Etal; Cost and Management Accountancy, New Central Book Agency.
2. Horngren, Cost Accounting; A Managerial Emphasis, PHI.
3. ICWA Publications on Application of Costing Principles in Different Industries.
4. ICWA, Calcutta, Advanced Cost and Management Accountancy Methods, Techniques and Applications.
5. Jain and Narang, Advanced Cost Accounting, Kalyani.
6. Jawaharlal, Cost Accounting, TMH.
7. Khan and Jain, Theory and Problem of Management and Cost Accounting, TMH.
8. Nigam and Sharma, Cost Analysis and Control Management Approach, HPH.
9. Prasad. N.K, Principles and Practice of Cost Accounting, Book Syndicate.
10. Vashist and Saxena, Advanced Cost and Management Accounting, Sultan Chand and Sons.

Course - HC-4.4: Investment Analysis and Portfolio Management

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To enable the students to understand various techniques used in investment management, portfolio analysis and efficient portfolio construction.

Unit-I: Investment Management

Meaning, Nature, Objectives, Scope and Process of Investment; Speculation and Gambling; Investment Plan; Investment Information; Avenues of Investment; Marketable and Non-Marketable Securities; Development of Debt and Stock Markets in India; Stock Trading Mechanism; Stock Exchanges in India, Stock Indices - Meaning, Types and Methods of Developing Stock Indices - BSE & NSE Stock Indices; Financial Regulation - Meaning and Importance; Role of SEBI as a Market Regulator.

Unit-II: Investment Analysis

Fundamental - Economic, Industry, Company analysis; Technical Analysis; Efficient Market Hypothesis and its Implications; Fundamental Analysis V/s Technical Analysis; Measurement of Risk and Return; Valuation of Fixed Income and Variable Income Securities.

Unit-III: Capital Asset Pricing Model

Assumptions - Risk Free Asset - Risk Free Lending and Borrowing; Capital Market Line - Security Market Line - Empirical Tests of CAPM - Zero Beta Version of CAPM; Factor Models - Arbitrage Pricing Theory (APT) - Principles and Limitations of APT - Single and Multiple Factor Models; APT V/s CAPM

Unit-IV: Portfolio Analysis

Meaning, Need, Objectives, Evolution, Phases and Process of Portfolio Management; Traditional and Modern Portfolio Theories; Optimal Portfolio Construction; Analysis of Portfolio Risk and Return; Diversification of Risk, Combining Risks and Riskless Securities; Markowitz Diversification - Mean, Variance Analysis; Leveraged Portfolio, Sharpe Index Model.

Unit-V: Portfolio Evaluation and Revision

Meaning, Need and Measurement of Portfolio Evaluation; Risk and Return - Risk Adjusted Measures - Sharpe, Treynor and Jenson Models; Portfolio Revision - Meaning and Need for Revision, Techniques of Portfolio Revision; Brief Survey of Software Packages for Portfolio Management.

Reference Books:

1. Avadhani V.A: Investment and Securities Market in India, Himalaya Publications.
2. Cheney J and E Muses, Fundamentals of Investment, Paul,New York
3. Domodaran, Investment Valuation, Jhon Wiley, New York.
4. Fischer Donald E. and Ronald J. Jordan, Security Analysis and Portfolio Management, 6th Edition Prentice Hall of India
5. Frank K. Reilly and Keith C. Brown, Investment Analysis and Portfolio Management, 8th Edition, Thomson
6. Kevin S, Security Analysis and Portfolio Management, Prentice Hall.
7. Prasanna Chandra: Investment Analysis and Portfolio Management Tata McGraw Hill, New Delhi.
8. Punithavathy Pandian, Security Analysis & Portfolio Management, Vikas Publications.
9. Sharpe William F, and Bailey Jeffery V, Alexander Gordon J, Investments, 6th Edition, Prentice Hall of India
10. V.K. Bhalla, Investment Management, S. Chand & Company, New Delhi.

Group-(AF) Accounting and Finance

Course - SC-4.6 (AF): Advanced Financial Accounting

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To impart the conceptual and practical knowledge of higher aspects of financial accounting and enhance the knowledge of students in the field of financial accounting.

Unit-I: Higher Aspects of Partnership Accounts

Introduction, Settlement of Accounts upon dissolution of the firm, Sale of partnership firm to a joint stock company, legal procedure, Accounting treatment, Amalgamation of Partnership Firms, Accounting Procedure involved. Practical Problems.

Unit-II: Accounting for Lease

Introduction, Accounting for Financial Lease, Books of Lessor, Accounting for Operating Leases, Accounting for sale and leaseback – Leading to Finance lease, Accounting for sale and lease Back – Leading to Operating lease, Provisions of AS- 19 and IAS- 17 Practical Problems.

Unit-III: Accounting for Investment Transactions

Meaning, Types of Investment, Costs of Investment, Recording of investment transactions, Accounting for variable Earning Securities, Accounting for Interest bearing (Fixed Earnings) Securities, Accounting in the books of broker, Practical Problems.

Unit-IV: Accounting for Intangible Assets (Excluding Goodwill)

Introduction, types of intangible assets, Marketing related Intangible assets, Production related Intangible assets, Valuation of Intangible assets as Per AS 26 and IAS -38 Practical Problems.

Unit-V: Accounting of Indian Government

Introduction, Books of accounts to be maintained, Control of Government Finances, recording of financial transactions of Government – Treasury System, Structure of Government Accounts (only Theory).

Reference books:

1. Advanced Accounting Volume 1: Dr. Ashok Sehgal, Dr. Deepak Seghal. Taxmann's Publication.
2. Advanced Accounting Volume 1: S. N. Maheshwari & S. K. Maheshwari Vikas Publishing House Pvt. Ltd.
3. Advanced Accounting Volume 1: S. P. Jain & K. L. Narang Kalyani Publishers.
4. Modern Accountancy Volume 1: Hanif and Mukherjee Tata McGraw Hill
5. Advanced Accounting Volume 1: R. L. Gupta & M Radhaswamy. Sultan Chand & Sons
6. Advanced Accounting CA Parveen Sharma & CA Kapileshwar Bhalla Taxmann's Publication.

Group-(CT) Costing and Taxation

Course - SC-4.6 (CT): Strategic Cost Management

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: To teach the art and science of strategic cost management through techniques and performance measurement and its implications in the industry.

Unit-I: Activity Based Costing and ERP

Activity Based Costing- Concept of ABC, purpose, Implementation; Benefits and relevance in strategic cost decision making and its application in budgeting, Kaplan and Cooper's Approach to ABC, Cost Drivers and Cost Pools, Main Activities and their Cost Drivers, Allocation of Overheads under ABC; ERP and its applications in strategic cost management.

Unit-II: Learning Curve Model and Life Cycle Costing

Concept and Phases of Learning Curve, Graphical Representation, Learning Curve Applications and Factors Affecting Curve, Experience Curve - Life Cycle Costing: Concept and Characteristics, Activities and Phases of Short Product and Extension of Product Life Cycle, Turning Point Indices in Product Life Cycle. (Theory and Practical)

Unit-III: Management Control Techniques

Cost Control, Cost Reduction, Benchmarking, Value chain Analysis and Value Engineering. Budgetary Control System, Internal cost audit, Pareto Analysis, job evaluation and merit rating.

Unit-IV: Performance Measurement

Cost Performance Matrix, Return on Investment, Residual Income, Responsibility Accounting and Reporting, Balanced Scorecard; Performance Prism and Building Block Model.

Unit-V: Divisional Transfer Pricing

Meaning, purpose and principles of transfer pricing, methods of Transfer Pricing-advantages and disadvantages; International Transfer Pricing.

Reference Books:

1. BabhatoshBanarjee, Cost Accounting, World Press, Calcutta.
2. Edward Blocher, Cost Management: A Strategic Emphasis, TMH, New Delhi.
3. Govindraju, Et Al., Strategic Cost Management, Free Press, Calcutta.
4. Horngern, Et Al., Introduction to Management Accounting PHI, New Delhi.
5. Horngren, Foster and Dabur, Cost Accounting: A Managerial Emphasis, PHI, New Delhi.
6. Jain and Narang, Advanced Cost Accounting, Kalyani Publishers, New Delhi.
7. Ravi M. Kishore, Cost Management. Taxman Publications, New Delhi
8. Kaplan and Aatkinson, Advanced, Taxman Publications, New Delhi.
9. N.K. Prasad, Cost Accounting, Book Syndicate, Calcutta.
10. Ravi M.K. Krishore, Advanced Management Accounting, Taxman Publications, New Delhi
11. 11. Horagren, Dabur, & Foster. Cost Accounting: A Managerial Emphasis. PHI and Pearsons Education.

Group-(HM) Human Resource and Marketing

Course – SC-4.6 (HM): Supply Chain Management

Weekly Teaching Hours: 4 Examination Duration: 3 Hours

Objective: The objective of the course is to acquaint the students with the concepts and tools of supply chainmanagement.

Unit-I: Introduction

Concept, Evolution, Importance, Scope of Supply Chain Management (SCM) and Trade Logistics; Supply Chain Management as a Management Philosophy; Functions of SCM, Value Chain; Design of SCM; Logistic Activities – An Overview, Contribution of Logistics at Macro and Micro Levels; SCM and Trade Logistics; Logistics and Competitive Advantage; Logistics Mix; Concept, Span and Process of Integrated SCM; Difference between Logistics and Supply Chain Management, Functional Applications – HR, Marketing, Operations, Finance, IT; Logistics Organization - Logistics in Different Industries.

Unit-II: Behavioural Issues in Supply Chain Management

Role of Relationship Marketing in SCM; Managing Relationships with Suppliers and Customers; Captive Buyers and Suppliers; Strategic Partnerships; Supplier-Retailer Collaboration and Alliances.

Unit-III: Functional Areas of Logistics and Supply Chain Management

Product Development Process and SCM, Purchasing Cycle, Types of Purchases, JIT Purchasing, Transportation: Introduction, Objectives, Different Modes and Importance of Effective Transportation System; Warehousing and Inventory Management: Reasons for Warehousing, Warehousing Evaluation and Requirements, Warehousing Location Strategies, Inventory-Concept, Objectives, Types of Inventory, Inventory Management: Concept, Importance and Objectives of Inventory Management, Different Types of Inventory Costs, Inventory Management Principles and Approaches; Logistical Packaging: Concept, Objectives, Types of Packaging Material, Packaging Costs.

Unit-IV: Performance Measurement

Framework of Performance Indicators, Methods of Performance Measurement, and the Balanced Score Card Approach, Benchmarking, Supply Chain Metrics (KPIS), Performance Measurement and Continuous Improvement.

Unit - V: Trends and Challenges in Logistics and Supply Chain Management:

Third Party and Fourth Party Logistic Outsourcing- Challenges and Future Directions; Reverse Logistics; Bullwhip Effect; Push Based and Pull Based Systems; Green Supply Chain Management; E-Commerce Logistics: Requirements of Logistics in E-Commerce, EDI, Bar Coding, RFID; Re-Engineering the Supply Chain- Future Directions.

Reference Books:

1. Bozarth, C.C. & Handfield, R. B. (2015). Introduction to Operations and Supply Chain Management. Pearson Education.
2. Chopra, S. & Meindl, P. (2007). Supply Chain Management: Strategy, Planning and Operation, Pearson Education.
3. Christopher, M. (2011). Logistics and Supply Chain Management. Prentice Hall.
4. Hult, M. G., Closs, D., Frayer, D. Global (2014). Supply Chain Management: Leveraging Processes, Measurements, andTools for Strategic Corporate Advantage. Mc Graw Hill Ltd
5. Shapiro, J.F. (2007). Modelling the Supply Chain, Cengage Learning.
6. Simchi-Levi, D., Kaminsky, P., Simchi-Levi, E. & Ravi, Shankar (2008). Designing and Managing the Supply Chain. Tata Mcgraw Hill Education Private Limited.

Question Paper Pattern for Semester-End Examinations

Each Question paper shall be divided into three sections.

Section – A: Maximum Marks: 20

One question comprising twelve sub-questions (minimum of two questions from each unit) and the students have to answer any ten sub-questions. Each sub-question carries two marks. For the purpose of convenience, the students shall answer any ten sub-questions of this section at one place continuously in the initial pages.

Section – B: Maximum Marks: 15

Three questions shall be answered out of five questions (each unit one question). Out of five questions, three shall be problems in case of practical courses and two theory question. Each question carries five marks.

Section – C: Maximum Marks: 45

Three questions shall be answered out of five questions (each unit one question). Out of five questions, three shall be problems in case of practical courses and two theory question. Each question carries fifteen marks.

Note: Calculator, Mathematical Table and Present Value Table are allowed wherever needed.

Semester – IV
Course - HC- 4.5: Project and Field Visit

Objective: The primary objective of making the students to involve in the project work is to expose them to the practical field. The study is a plethora of principles, canons, rules and regulations, theories and tenets in the class-room set-up. In order to understand the versatility of the same in application, they are enthused to take up project work. The industry-related, farm-related, field-related and business-related problems may be chosen for the study. Thus the findings of the study would help to solve the problems.

Procedure: After the examination of M. Com - II semester, the students have to finalize the topics for their projects, select the industrial unit, observe the functioning and collect the necessary data and reports. This is to be completed before the commencement of the classes of M. Com – III semester. During the III semester, the students have to collect the data from different sources including the books, journals, reports, websites, etc. Based on this, the students shall prepare the project report under the guidance of a teacher (allotted by the department) and submit one copy to the department at least one week prior to the close of M. Com – IV semester classes.

Format of Project Report: The size of the report shall be between 80 to 100 pages – 1½ line space, Times New Roman font, 12 font size, justified alignment, and 1.5" left margin and 1" on other sides.

Industrial Tour

Objective: The main objective of industrial tour is to lessen the gap between classroom teaching and practical working environment and to bring some positive intangible changes in the personalities of students. The M.Com programme has number of theoretical and skill based courses taught in all the four semesters. There exists a gap between the theory and practice. Hence, there is a need to bridge this gap. The philosophy underlying the industrial tour is student centric learning and to emphasize on outcome based education. When a student visits the industries his/her abilities get strengthened. This would have a long term impact on the functioning of the institution, teachers and the students. Hence, industrial tour is suggested for M. Com Students.

Procedure: The concerned Department teacher / students have to take the permission of the higher authorities through proper channel with adequate plan and permission of the industries. The tour has to cover minimum two industries as per the convenience.

Industrial visit report: Every student has to prepare industrial tour report with a minimum of 5 pages stating the outcome of this visit and submit to the department within 10 days of completion of the tour.

Outcome: The students shall have a practical experience which support for the personality development. The institution will also be benefitted by establishing industry linkages.

MODEL QUESTION PAPER

I/II/III/IV SEMESTER DEGREE EXAMINATION

(CBCS)

Exam Time: 3 Hours **Max. Marks: 80**

SECTION: A (10*2=20)

1. Answer any TEN of the following sub-questions. Each sub-question carries TWO marks

a.
b.
c.
d.
e.
f.
g.
h.
i.
j.
k.
l.

SECTION: B (3*5=15)

Answer any THREE of the following questions. Each question carries FIVE marks
(Three problems should be given out of five questions in case of practical courses)

2.
3.
4.
5.
6.

SECTION: B (3*15=45)

Answer any THREE of the following questions. Each question carries FIFTEEN marks
(Three problems should be given out of five questions in case of practical courses)

7.
8.
9.
10.
11.

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