V.V.SANGHA'S

VEERASHAIVA COLLEGE

Cantonment, Ballari- 583104, Karnataka.

www.veerashaivacollege.org

Criteria-II: TEACHING LEARNING PROCESS

INDEX

2.6.1: programme Outcomes(Pos) and Outcomes(Cos) for all Programmes offered by the institution are stated and displayrd on website(Q.M)

File description

- Upload additional information
- Provide link for additional information

Copy Enclosed

- **Programme Outcomes(Pos)**
- **Course outcomes (Cos)**
- **Result sheet**
- **Placements**
- **Assignments**
- **Skills**
- **Project work**

Different courses are introduced at the UG and PG levels in order to provide a wide diversity in the learning process. There are about five UG programs and four PG programs. In addition to them, five add-on or value-added courses are introduced not only for the enrichment of the curriculum but also to expose the students to current trends in the world and to inculcate employability skills. The program outcomes, program-specific outcomes, and course outcomes are determined at the level of the board of studies and deans of faculties of the affiliated university. Based on those determined program outcomes and course outcomes, the heads of the departments defined and stated them at the institutional level in a suitable manner.

Program outcomes are defined to convey the objective of a program of study. Specifically, they are defined to make the learner understand what he or she should know or be able to do at the program conclusion. We often see program outcomes as the knowledge and skills students need to obtain by the time they complete their degree. Course outcomes are stated to define the knowledge, skills, attitudes, and behavior modes that students acquire at the end of the course. The principal decides program-specific outcomes by holding discussions with the heads of the departments and subject experts. All three are displayed on the college website for the notice of students and other stakeholders.

Teachers brief them on the orientation program organized for newly enrolled students. A copy of the POs, PSOs, and COs is displayed on the notice board of the college. The teachers of each course provide complete information on all three in their regular classes. The IQAC Coordinator monitors these activities under the guidance of the principal.

By understanding POs and COS, the students set their goals and study sincerely to attain them. Examinations held at the college and university levels serve as a means of understanding students' improvement in all aspects of learning. Quizzes, assignments, presentations, internal assessments, project work, study tours, etc. are practiced to understand students' ability to demonstrate knowledge, skills, and attitude formation by the end of their chosen course or program. POs, PSOs, and COs lead students in a particular area of study and portray what they can attain at the end of their program.

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VEERASHAIVA COLLEGE, BALLARI–583 104.

(Affiliated to Vijayanagara Sri Krishnadevaraya University, Ballari.)

Bachelor of Arts (B.A.)

Course Module

First Basic Language : English

Second Basic Languages : Kannada/Hindi

Compulsory Papers:-

1. Indian Constitution (III & IV Semester)
2. Financial Education and Investment awareness (I & III Semester)
3. OPEN Elective Courses.

Totally, there are 19 open elective courses in semester from First to Fourth semester. Of which a student shall opt any one OE course in each semester other than DSC courses selected for study in his / her steam . Flexibility is provided to the students in choosing OEC.

Discipline Specific Courses :

The student shall opt any two of the DSC courses given below.

Each DSC course has three credits. Totally, a student has to study for 25 credits in each semester.

Subjects offered

Kannada

English

Sociology

Pol.Science

History

Economics

Skill enhancement courses

Environmental studies

Digital Fluency

Artificial Intelligence

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Value Based Education

Yoga, Health and Wellness

Sports , Cultural activities / NSS/ NCC / YRC etc.

Programme Outcome

The students pursuing their degree in humanities and social sciences have wide opportunities to do higher studies such as B.Ed., Post Graduate studies in different subjects. After the completion of PG, they can do research in their respective specialized areas. A student who has undergone research training has increasing demand in city planning, administration, communication, social work, social welfare, social and economic planning, advertising, rural reconstruction, mass media etc. Arts graduates can appear for any competitive examination held by UPSC, KPSC, KEA, BRBC etc. They are also eligible to pursue other courses like Bachelor of Law, MBA, PGDCA etc. The programme meets man power requirements in specific fields. It helps to acquire life skills, employability skills, soft skills. The programme provides information on latest changes and developments in social, political, economic aspects of society. It makes a learner to know about expected roles responsibilities and commitments. Most of the administrators in top level are arts graduates. This clearly indicates that the course has tremendous potentialities for future career.

- The Students can acquire knowledge with facts and figures in subjects like History, Sociology, Political Science, Economics and Languages.
- The students can understand the basic concepts, fundamental principles & various theories in social science subjects.
- The students can realize the significance of literature in terms of aesthetic, mental, moral and intellectual development.
- They can develop analytical ability to analyze and combat social problems.
- They learn about how to bring harmony in society.
- They develop positive attitude towards life.
- They can learn the skills of reading, listening, speaking etc., which help in expressing ideas & opinions effectively.
- Helps to develop a sense of social service.
- Helps to become responsible citizens.
- Assist to develop creative ability and critical thinking.

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DEPARTMENT OF KANNADA

COURSE OUTCOME

Course	Outcomes
B.A- I Basic –Kannada Modern Kannada Literature.	Increasing awareness of various writers, literary works and literary movements. Buliding a strong intellectual personality. Knowing about different literary forms. Increasing the intellectual level of students.
B.Com / BBA - I Basic –Kannada A)Kannada Story poems B). selected scientific essays	Through short stories essays and poetry imaginary, observatory and creative talents are introduced to students, Writing skills increase. Increases eclipse energy in students.
B.Sc / BCA – I a)Collection of small stories b) An anthology of modern poetry.	The importance of short stories is understood. The story skills develop. Reading ability to grow. The energy of the eclipse increases. Increases the writing skills of poems. As well as grammatical factors.
B.A- II Basic –Kannada The Anthology of Mid Kannada Literary Texts	The nature of literature, the components of the literature increases the knowledge of the form of oral. The ability to say the oaths orally.Reading skills increases.
B.Com / BBA - II Basic –Kannada a)A Bunch of selected short stories. b). Kannada Business Communication	The hobby of reading stories grows. Writing skills increase. Communication skills grow. Kannada language capacity increases. Increases business skills.

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B.Sc / BCA – II a) Kannada Language communication b)Collection of vachanas and keerthanas.	Readings skills grow in students. As well as communication ability to grow. The Knowledge of the vows develops. Knowledge of the personal lives and psalms of the psalmists develops. Learn to sing psalms. In addition to the richness of the language literature the values of humanitarian values. Social religious political and cultural understanding through literature.
B.A- III Basic –Kannada The literary forms of modern kannada	He knows the nature and characteristics of modern kannada literature . Renaissance progressive avant-garde is aware of Dalit literature. The reading of their works is known with the introduction of modern poets.
B.Com / BBA - III Basic –Kannada Forms of Modern Kannada: Drama and Novel	To raise awareness of the play. The reading of the novel develops. Writing skills increase. The importance of writing is known as in students.
B.Sc / BCA – III Basic –Kannada The literary forms of modern kannada	Increasing awareness of various writers, literary works and literary movements. Getting an understanding of the form of various forms of literary genres.
B.A- IV Basic –Kannada Ancient and Mid Kannada Literature	In addition to the richness of the language-literature, the values of humanitarian values. Socialo-religious,political and cultural understanding through literature.
B.Com / BBA - IV Mid kannada literature	Increasing the awareness of the land. Making awareness of social phenomena. Raising awareness of social liability. Building an intellectual personality.
B.Sc / BCA – IV Basic –Kannada	Adopting rational scientific thinking . Developing a linguistic skill. Reading , understanding and writing of literature.

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Mid kannada literature	

B.A- I Opt –Kannada Chomanadudi.	The skill of relationship of emotions increases. Along with language skill reading skills, writing skills increase.
B.A- II Opt –Kannada a) The literary history of middle age. b) The collection of mid kannada literary texts	The nature and features of the literature can be understood. Students have the knowledge of the literature of Vachana Sahitya Dasa Sahitya Haridasa. We know the personal life of the Dasara Haridas and his literary world.
B.A- III Opt –Kannada a) Ancient Kannada literature. b) The anthology of ancient kannada literary texts	It enables the learner to recognize the importance of embedded human values and objective values in language and life. Some functional aspects of language communication and grammar will be learnt.
B.A- IV Opt –Kannada a).Literary criticism	Knowledge of language from intellectual, moral and social point of view is given. Creativity skills are developed through poetry and short fiction.

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b)Western literary criticism	
B.A- V –Paper-5.1 Opt –Kannada Language and Grammar	Building a strong intellectual personality. Reading and writing skills grows. Knowledge of grammatical factors is known. Develop knowledge in grammar.
B.A- V –Paper-5.2 Opt –Kannada Classical literature	In addition to the richness of the language- literature, the values of humanitarian values. Socialo –religious political and cultural understanding through literature.
B.A- VI –Paper-6.1 Opt –Kannada Kannada prosody	Developing language skills. Reading ,understanding and writing of literature. Criticism analysis, and understanding of action actions.
B.A- VI –Paper-6.2 Opt –Kannada Folk literature	Getting a high level of awareness of literature and folk cultures. To adopt the richness of folk literature along .Providing motivation o use the understanding of the literary literature as a sociopath.

B.A/BCOM/B.Sc/ BBA/BCA/ III Sem OEP :- A Glands of Kannada Short Story Tradition.	Increasing awareness of various writers, literary works and literary movements. Getting an understanding of the form of various forms of literary genres. Reading skills grows.
B.A/BCOM/B.Sc/ BBA/BCA/ IV Sem OEP :- The Tradition of Kannada literary texts (Ancient and Middle Age)	Increasing awareness of Nadu-Nudi. Making awareness of social phenomena. Reading understanding and writing of literature. Students learn through a novel, the importance of social relations, moral and social values and importance of individuality and personality. In addition, additional research skills. Like Data Collection, analysis and organizing data to prepare a research paper are taught
B.A/BCOM/B.Sc/ BBA/BCA/ V Sem	Increasing awareness of various writers, literary works and literary movements. Getting an understanding of the form of various of literary genres.

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OEP :- Modern kannada literary tradition	

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Bachelor of Arts (B.A.)

DEPARTMENT OF ENGLISH

COURSE OUTCOME

Course	Outcomes
B.A- I Basic –English- Eng 101A	Students will be aware of the different kinds of language expression and their communication capabilities will improve. The important functional aspects of Grammar will be learnt.
B.Sc/B.C.A- I Basic –English- Eng 101C	The student will be able to know the different kinds of expressions like Prose, Poetry and Essay. He will master some functional grammar aspects.
B.Com/B.B.A I Basic –English- Eng 101B	It enables the learner to recognize the importance of embedded human values and objective values in language and life. Some functional aspects of language communication and grammar will be learnt.
B.A/ BSW –II Basic –English- Eng 101A	Awareness of employability skills like self introduction, presentation and creativity provided.
B.Sc/B.C.A- II Basic –English- Eng 101C	Knowledge of language from intellectual, moral and social point of view is given. Creativity skills are developed through poetry and short fiction.
B.Com/B.B.A II Basic –English- Eng 101B	Skill of identifying the value and knowledge based language is mastered by the learners. Different aspects of creativity learnt through poetry.
B.A/ BSW –III Basic –English- Eng301A	Communication and conversation skills are attained. Writing resume, Writing proposals, Covering letters are learnt. The other skills like group discussions, informal discussion, Debates, facing interview, making speeches, comparing events and writing agenda, notes and minutes of a meeting are mastered. Communication skills are strengthened through a drama.
B.Com/B.B.A III Basic –English- Eng302A	Communication skills like telephone talk face to face informal conversation, one- to-one written communication, writing e-mail, proposals of job application, Group discussions, debates speeches and so on are mastered. Linguistic and thematic value based Shakespearean play is used to enhance their confidence and competence in communication.
B.Sc/B.C.A- III	Different kinds of communication skills just like BA and B.Com

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Basic –English- Eng303A	students with a different Shakespearean play are improved in students.
B.A/ BSW –IV Basic –English- Eng401A	Students will master the presentation skills like synchronized body language, using right media, style of presentation and overall impression. They also develop personal conduct and appearance through etiquette and manners, table manners and dress code. They learn about gender bias in communication. To observe all these R.K.Narayana's novel is used.
B.Com/B.B.A IV Basic –English- Eng402A	Students will learn the presentation skills, personal conducts and appearance like B.A students, with a different novel i.e. Jane Austen's Emma.
B.Sc/B.C.A- IV Basic –English- Eng403A	These students also master the same skills of presentation and personal conduct like B.A and B.Com students with a different novel by Ernest Hemmingway.
B.A / B.Sc/ BCA/B.Com I Sem. Addl.English Code Eng 201	The skills like 'How to read a Book' developing a right perspective. Keeping up God- Consciousness in day-to-day activities and creative skills are introduced to students. Grammar points related to these skills are also introduced.
B.A / B.Sc/ BCA/B.Com II Sem. Addl.English Code 202	Through short stories, essays and poetry imaginary, observatory and creative talents are introduced to students. Grammar aspects related to above skills are introduced.
B.A / B.Sc/ BCA/B.Com III Sem. Addl.English Code 203	Conversational and communication skills are developed through small plays. In addition to these, Basic Research skills are introduced to students.
B.A / B.Sc/ BCA/B.Com IV Sem. Addl.English Code 204	Students learn through a novel, the importance of social relations, moral and social values and importance of individuality and personality. In addition, additional research skills. Like Data Collection, analysis and organizing data to prepare a research paper are taught.
B.A – I Semester Opt. English Code 200	Students learn background study of literature and representative texts of different literary forms like drama, Poetry and essay are introduced in a chronological order.
B.A – II Semester Opt. English Code 201	Students learn the texts and background related to the puritan and the Restoration period.
B.A – III Semester Opt. English Code 202	Students gain knowledge regarding the texts of representative literary artists and background of the period of Neo classicism and Romanticism.

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B.A – IV Semester Opt. English Code 203	Students will get knowledge regarding the representative literary artists of Poetry, Prose and novel of Victorian Age.
B.A –V Semester Opt. English Paper-V	Students will gain knowledge about the literary texts of the representative literary artists of 20thcentaury. British Literature.
B.A –V Semester Opt. English Paper-VI	Students will obtain knowledge regarding Indian writings in English and English Translations with representative writer's works of art pertaining to the age.
B.A –VI Semester Opt. English Paper-VII	Students will get knowledge about origin and Development of English Language and Literary theories.
B.A –VI Semester Opt. English Paper-VIII	Students will attain Knowledge regarding World Literature with representative texts and background knowledge of the texts created.
B.A/BSW- I Basic COURSE CODE: 21BA1L2LE1	Students will be aware of the different kinds of language expression and their communication capabilities will improve. The important functional aspects of Grammar will be learnt.
B.Sc/B.C.A- I Basic –English- COURSE CODE: 21BSC1L2LE1	The student will be able to know the different kinds of expressions like Prose, Poetry and Essay. He will master some functional grammar aspects.
B.Com/B.B.A I Basic –English- COURSE CODE: 21BCOM1L2LE1	It enables the learner torecognize the importance of embedded human values and objective values in language and life. Some functional aspects of language communication and grammar will be learnt.
	NEP **COURSE OUTCOMES**
DSC1: Introduction to English Literature COURSE CODE: 21BA1C1EN1	**At the end of the course, the learner would be able to** CO1: Correctly define commonly used literary terms and concepts and use those terms and concepts to discuss and analyse works of literature. CO2: Identify structural elements of works of poetry, fiction, and drama, and analyse how those elements help create specific meanings and effects. CO3: Compare works of literature in terms of theme, structure, and use of literary devices CO4: Students will gain an understanding of the development of literature
DSC2: Indian Literature in English up to	**CO1: Speak, explain and critically understand Indian Writing**

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1947 COURSE CODE: 21BA1C2EN2	**English** **CO2: Identify the historical trajectories of various genres of Indian Writing in English** **CO3: Critically engage with Indian Writing English from various historical and social positions**
OEC1: Gender Studies **COURSE CODE: 21BA1O1EN1**	**CO1: Participants will have an understanding of gender concepts and terminologies and they learn to think critically regarding gender roles.** **CO2: They challenge the cultural construction of gender.**
Semester-II **Language: Basic English (B.A/B.S.W)**	1. Appreciate the prose and poetry written by writers belonging to varied geographicalbackgrounds. 2. Recognizethecommonerrorsandlearntorectifythem. 3. LearntoconverseinEnglish.
Semester-II **Language: Basic English** **(B.Com/BBA/BHM)**	1. Appreciate the prose and poetry written by writers belonging to varied geographicalbackgrounds. 2. Recognizethecommonerrorsandlearntorectifythem. 3. LearntoconverseinEnglish. 4. WritereportsinEnglish.
Semester-II **Language: Basic English** **(B.Sc/B.C.A/GMT)**	1. Appreciate the prose and poetry written by writers belonging to varied geographicalbackgrounds. 2. Recognizethecommonerrorsandlearntorectifythem. 3. LearntoconverseinEnglish. 4. WritereportsinEnglish.
DSC3: Introduction to Phonetics and Linguistics	1. Knowaboutthebasicconcepts relatedtolanguage. 2. Writethetranscriptionofwords. 3. Understandtheprimaryideas related toLinguistics.
DSC4:PostIndependentIndianWriting inEnglish	1. GetacquaintedwiththemajorPost-IndependentIndianwritersandtheirworksinEnglish. 2. Analyzethepoems,playsand novels ofthePost-IndependentIndia. 3. Knowsomeoftheimportantchallenges ofmodernIndiaasperceivedinIndianEnglishliterature.
OEC:FunctionalEnglish.	**studentswillbeableto:** 1. Havelearntthebasicsoflistening, speaking,readingandwriting. 2. Applytheseskillsinday-to-day conversation.
Semester-III **Language: Basic English** **(BA)**	**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 analyses ,interpret and appreciateliterary texts** **5. An awareness of social, cultural, religious and ethnic**

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	diversities 6. Facilitated employability in emerging ectors such as –content writers, interpreters, translators, transcribers
Semester-III Language: Basic English (BCom)	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 analyses ,interpret and appreciateiterary texts 5. An awareness of social, cultural, religious and ethnic diversities 6. Facilitated employability in emerging ectors such as – content writers, interpreters, translators, transcribers 7. Acquiredlanguageskillsforcompetitiveexaminations-UPSC/KPSC/IBPS/SSC/RAILWAYS/TOEFL/IELTSandothers
Semester-III Language: Basic English (B.Sc)	1. Appreciate the prose and poetry written by writers belonging to varied geographical backgrounds. 2. Recognize the common errors and learn to rectify them. 3. Learn to converse in English. 4. Write reports in English.
Semester-III Language: BA - DSC 5 Course Title: British Literature up to 1800	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
Semester-III Language: BA – DSC 6 Course Title: Indian literature in English Translation	1) Understand the meaning and methods of translation 2) Comprehend the scope of translation in the modern age 3) Have knowledge of Indian writers and literature in general 4) Appreciate the translated text
Semester-IV Language: Basic English (BA/BSW)	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

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Semester-IV **Language: Basic English** **(BCOM/BBA/BHM)**	**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**
Semester-IV **Language: Basic English** **(BSC/BCA/GMT)**	**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**
Semester-IV **Language: BA ENGLISH**	**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**
Semester-IV **Language: BA OPTIONAL ENGLISH**	**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**

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DEPARTMENT OF SOCIOLOGY

COURSE OUTCOME

Course	Outcomes
B.A.-I Semester (NEP) 21BA 2C1S01 DSC-1 Understanding Sociology	At the end of the course, students understand the nature and role of sociology in changing the world. They comprehend the uniqueness of sociological imagination in the study of new world. It helps to recognize different perspectives perceiving the working of social groups. The students would differentiate between sociology's two purposes – Science and Social Reform. The focus on current issues helps the learner to acquaint with solutions so as to attain happiness and keep their society away from crises and evils.
B.A.-I Semester (NEP) 21BA 2C2S02 DSC-2 Changing Social Institutions in India	The students will be able to identify the new forms taken by institutions of family and marriage. Sensitise to the conflicting norms of secularism and living by one's religious beliefs. The students also learn to appreciate the role of education and challenges in making education accessible to all. Recognize the social nature of economy and work. They will learn about how to make use of opportunities offered by democracy and the threats it faces. It h unlimited scope to undertake micro research work and communicate effectively.
B.A.-II Semester (NEP) 21BA 2C3S03 DSC-3 Western Sociological Thought	In this course, students contextualise the social and intellectu background of sociologists. Appreciate the contemporary classical sociological thought. Also, appreciate the need for thinking in theoretical terms and concepts. Lastly, demonstrate basic understanding of theory and research.
B.A.-II Semester (NEP) 21BA 2C4S04 DSC-4 Sociology of Rural Life in India	The students understand the myths and realities of village India constructed by western and Indian scholars. They learn about changes in land tenure system and consequences. And appreciate the role of traditional social institutions and how they have responded to forces change. They will learn to make an informed analysis of various development programmes and challenges encountered.
B.A.-III Semester (NEP) 21BA 3C3S05 DSC-6 Social Stratification	Students after the completion of course learn to understand the nature and role of social stratification and recognize different types of stratification and mobility. Critically understand and analyze different theories of social stratification.

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B.A.-III Semester (NEP) 21BA 3C3S06 DSC-4 Sociology of Urban life in India	At the end of the course, students will be able to define the basic concepts of urban sociology. It helps to identify and describe different types of city. Analytically understand theoretical issues related to urban society and critically evaluate urban policies.
B.A.-IV Semester (NEP) 21BA 4C4S07 DSC-4 Sociology of Marginalized Groups	At the end of the course, students gain knowledge of marginalization and marginalized groups in India. It helps to understand the impact of powerlessness in social life. They develop ability to participate and critically view efforts undertaken to address inequalities.
B.A.-IV Semester (NEP) 21BA 4C4S08 DSC-4 Population and Society	The students will be able to define the basic concepts of population studies. They will acquaint with the skills of understanding the dynamics of population from sociological perspectives. Also , learn about problems around India's population. It helps to develop critical approach for analyzing population policies.
B.A.-I Semester (NEP) OEC - 1 Indian Society : Continuity and change	Students after completion of this course are able to analyze the nature and direction of change in Indian Society basically from traditional to modernity of social institutions. Understand the indicators of change and participation in democratic process. Examine the changing conditions of socially excluded groups through movement for social justice. Critically look at the two way street of globalization and its impact on Indian society and communicate in clear terms.
B.A.-II Semester (NEP) OEC - 2 Social Development in India	At the end of the course, students are able to distinguish between growth and development and appreciate the importance of social component development along with the need for sustainable and inclusive human development. They will be able to recognize the necessity for focus on changing social values to realise the full potential growth.
B.A.-III Semester (NEP) OEC - 3 Sociology of Food Culture.	In this course, students will be able to learn social and cultural dimensions of food system from production consumption, and new ways of thinking about the apparently mundane , every day act f eating. It provides a broad conceptual frame work, based on the proposition that the food systems and food consumption patterns of contemporary societies are the products of the complex interplay of the social forces of change and innovation.

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BA.-IV Semester (NEP) OEC - 4 Sociology of Tourism and Management	This course helps the learner to learn about the relationship between Tourism, Culture and cultural change. It will throw light on the social, cultural and economic impacts of tourism on local communities. It helps to understand the relationship between tourism and consumption and also the principles of tourism management.

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DEPARTMENT OF POLITICAL SCIENCE

COURSE OUTCOME

Course	Outcomes
B.A.-I Semester (NEP) 21BA 2C1S0PS1 DSC-1 BASIC CONCEPTS IN POLITICAL SCINCE	Develop an understanding about the nature and philosophy of political science and its interface with society. enable the student to develop qualities of responsible and active citizens in a democracy
B.A.-I Semester (NEP) 21BA 2C2PS2 DSC-2 POLITICAL THEORY	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.
B.A.-II Semester (NEP) 21BA2C3PS3 DSC-3 WESTERN POLITICAL THOUGHT	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
B.A.-II Semester (NEP) 21BA2C4PS4 DSC-4 INDIAN NATIONAL MOVEMENT AND CONSTITUTIONAL DEVELOPMENT	contemplate on how colonial rule was overthrown by the Indian Nationalists. acquaints the students with the problems of Independent India.To enable the students understand the role of India in World affairs and the contributions of great men towards freedom.
B.A.-III Semester (NEP) 21BA3C5PS5 DSC- 5-INDIAN GOVERNMENT AND POLITICS	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 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.

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B.A.-III Semester (NEP) 21BA3C6PS6 PARLIAMENTARY PROCEDURES IN INDIA	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.
B.A.-IV Semester (NEP) 21BA4C7PS7 DSC -7: ANCIENT INDIAN POLITICAL IDEAS AND INSTITUTIONS	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 analyzethe 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.
B.A.-IV Semester (NEP) 21BA4C8PS8 DSC -8: MODERN POLITICAL ANALYSIS	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 studentsts understand and evaluate Governments. It aims at scientifically assessing the functioning of the government as result oriented institutions.
B.A.-I Semester (NEP) OEC - 1 HUMAN RIGHTS	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.
B.A.-II Semester (NEP) OEC - 2 : INDIAN POLITY: ISSUES AND ONCERNS	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
B.A.-III/ IV Semester (NEP) 21AECC2IC AECC:INDIA AND INDIAN CONSTITUTION	The purpose of the course is to help students to learn and explain the journey of India as a republic. They will, through this paper appreciate the varied perspective of describing India, its political culture, essence of its traditions, values and ideals of freedom struggle, sacrifices made and the constitution as India's conscience. It will help them determine the role and responsibilities of citizens as enshrined in the constitution giving insights in to the world of knowledge system India has had. The course also covers the goals and policies framed under the constitution for the national well-being. This will enable the students to demonstrate how vibrant is our constitution and the various institutions that are functional under it.

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DEPARTMENT OF HISTORY

COURSE OUTCOME

Course	Outcomes
BAHIS 101 Ancient Indian History (From Indus Valley to Kushana's	The paper enables students understand ancient Indian history i.e. from Indus valley to Kushanas. Students learn about the achievements of the emperors in this period.
BAHIS 201 Ancient Indian History (From Gupta's to 1206 A.D.)	The paper imparts the knowledge about Indian History with regard to Guptas till 1206 A.D. It deals with kings and rulers, their achievements, battles and contributions till 1206 A.D.
BAHIS OE 202 History of Karnataka (Early to 1565 A.D.)	It enables students know the history of Karnataka. It gives information about the various kingdoms, king, rulers, their respective colonies or areas, wars, contribution to politics, architecture, art and literature till the period of 1565 A.D
BAHIS 301 Medieval Indian History (1206 A.D. to 1526 A.D.)	The paper explains about medieval era in Indian History i.e. from 1206 A.D to 1526 A.D. It imparts the knowledge about the emperors, battles fought, achievements, their regions, contribution to different fields etc.
BAHIS OE 302 World History Heritage Sites of India	The open elective paper aims at providing the information about various historical heritage sites of India.
BAHIS 301 Medieval Indian History	It open Medieval Indian History
BAHIS OE 402 Heritage Tourism of India	The open Elective paper gives knowledge about Heritage tourism of India.
BAHIS 501 Modern Indian	The open elective paper provides knowledge about modern History i.e. from a period of 1707 A.D. to 1856 A.D. It gives information about various

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History (From 1707 A.D. to 1856 A.D.)	kingdoms, emperors their regions of this era.
BAHIS 502 History of Karnataka UP TO 1336 A.D.	It imparts knowledge about the History of Karnataka up to 1336 A.D. It throws light on the kings, empires, battles, achievements and contribution to various fields etc.

BAHIS OE 503 Historical Heritage of Karnataka	The open Elective paper gives knowledge about Historical Heritage of Karnataka
BAHIS 601 Modern Indian History (From 1857 A.D. TO 1950 A.D.)	The paper deals about modern Indian History from the period of 1857 A.D. TO 1950 A.D. All the historical changes, impacts during this time are learnt.
BAHIS 602 History of Hyderabad Karnataka (Post-Vijayanagara to 1956 A.D.)	It gives information about the history of Hyderabad Karnataka from Post-Vijayanagara to 1956 A.D. The various changes brought about by various kings in their rules are discussed.
BAHIS 603 Project Work*	The students are given an opportunity to do a Project Work on the research conducted by them with their respective topics. By this students are able to understand their applicative skill of the knowledge gained.

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DEPARTMENT OF ECONOMICS

COURSE OUTCOME

Course	Outcomes
B.A.-I Semester (NEP) DSC-1 Basic Economics	By the end of the course the student will be able to: 1. Identify the facets of an economic problem, 2. Explain the operation of a market system, 3. Analyse the production and cost relationships of a firm, 4. Evaluate the pricing decisions under different mark structures; and 5. Understand pricing strategies
B.A.-I Semester (NEP) DSC-2 Indian Economy	By the end of the course the student will be able to: 1. Understand the current problems of Indian Economy 2. Identify the factors contributing to the recent growth of t Indian economy 3. Evaluate impact of LPG policies on economic growth in India 4. Analyse the sector specific policies adopted for achieving t aspirational goals 5. Review various economic policies adopted
B.A.-II Semester (NEP) 21BA2C3EC3 DSC-3 Principals of Economics	At the end of the course the student should be able to: Understand the operation of the overall economic system; Calculate national income and related aggregates; 3. Explain t relationship between macroeconomic aggregates; 4. Analyse t nature of business cycles and policies towards controlling them; Evaluate the macroeconomic policies for solving major problems li poverty and unemployment
B.A.-II Semester (NEP) 21BA2C4EC4 DSC-4 Karnataka Economy	At the end of the course the student should be able to: Understand the nature of economic growth and problems Karnataka state; 2. Explain the process of structural growth Karnataka economy; 3. Evaluate the policies and programm undertaken by the Govt. of Karnataka for bringing about soci economic development
B.A.-III Semester (NEP) 21BA3C5EC5 DSC-5 Micro Economics	After the successful completion of the course, the student will able to: CO1: Understand introductory economic concepts. CO Recognize basic supply and demand analysis. CO3: Recognize t structure and the role of costs in the economy. CO4: Describe, usi graphs, the various market models: perfect competition, monopo monopolistic competition, and oligopoly. CO5: Explain ho equilibrium is achieved in the various market models. CO6: Identi problem areas in the economy, and possible solutions, using t analytical

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B.A.-III Semester (NEP) 21BA3C6EC6 DSC-6 Mathematical Economics	After the successful completion of the course, the student will able to: CO1: Perform basic operations in Sets and functions a Matrix algebra. CO2: Calculate limits, derivatives of Econon functions and identify the nature of relationship. CO3: Calcula maxima and minima of function
B.A.-IV Semester (NEP) 21BA4C7EC7 DSC-7 MACRO ECONOMICS	After the successful completion of the course, the student will able to: CO1: Understand the Theories of National Incon Accounting CO2: Explain the process of Consumption and Investme Functions CO3: Evaluate the Concept of Multiplier and Inflation
B.A.-IV Semester (NEP) 21BA4C8EC8 DSC-8 Statistics for Economics	After the successful completion of the course, the student will able to: CO1: Understand the nature of Data and their presentatio CO2: Calculate Descriptive statistics like measures of centr tendency and dispersion; CO3: Apply statistical techniques li correlation and regression in Economic analysis.
B.A.-I Semester (NEP) OEC - 1 Basics of Indian Economy	. By the end of the course the student will be able to: 1. Trace the evolution of Indian Economy 2. Identify the structural features and constraints of the Indi economy 3. Evaluate planning models and strategy adopted in India 4. Analyse the sector specific problems and contributions towar overall economic growth 5. Review various economic policies adopted
B.A.-II Semester (NEP) OEC - 2 Business Environment	At the end of the course the student should be able to: 1. Explain t elements of Business environment. 2. Identify the environment constraints in the growth of a business firm. 3. Analyse the ways utilize the current environmental conditions to achieve high business growth.

BA-IV SEMESTER (NEP

OEC-4

Karnataka Economy

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Bachelor of commerce (B.com)

Course module

First basic language : English

Second basic language : Kannada/Hindi/Additional English/Telugu

Compulsory papers:

1. 1st semester : IC,FA-1,BE,PPBM-1
2. 2nd semester : EVS,FA-2,ME,PPBM-2,OE
3. 3rd semester : CF,CA-1,MM,QT-1,OE
4. 4th semester : CA,CA-2,CLSP,QT-2,OE
5. 5th semester : PPA,BL,FM,CA-1,BE,IT-1,OE
6. 6th semester : CA,FS,MA,CA-2,HRM,IT-2
7. OPEN ELECTIVE PAPERS

Totally, there are 21 open elective papers. Of which the student shall study any three papers in II, III, IV & V semesters according to their choices. Flexibility is provided to the students in choosing OEP.

Combinations

1. Tax procedures and practice
2. Computers
3. General

Programme outcome

Bachelor of Commerce is very vast and wide in handling many papers. The word Commerce itself a Gigantic word to imagine because number of subjects are tagged and linked to one another. The students who are pursuing their course have so many options in their career after completing this course. Nowadays this program is in more demand due to ample of opportunities in future life and in building career.

- The students who have completed B.Com can move further in doing professional course like Chartered Accountants. A lot of demand for this course specially B.Com students
- Further B.Com graduates can do M com and MBA along with this they can become master in social work.
- Student of this course can apply for various competitive exams like banking and other KPSC exams also to get settled in their career.
- These graduates have the opportunities in working at various local, National and international companies.
- B.Com students are gifted in grabbing the opportunity to get specialised in tax courses on the competitions.
- Additional to this B.Com graduates are also welcome to do law course LLB for extra additional qualification for practice in law.
- Teaching field also welcomes them soon after the completing PG course to serve as guest faculty.
- Finally this course feels the graduate with Full fledged knowledge in the field of Commerce which are helpful for them in future which builds a beautiful career.

Specific program outcome

The graduate coming out of their course will be loaded with knowledge in various fields of Commerce and practical experiences in solving the business problems.

These students will definitely become part in building Indian economy and in making India as a developed country this program has the power of connecting or beginning out the students to extent

DEPARTMENT OF COMMERCE (B.Com)

COURSE OUTCOME

Course	Outcomes
FINANCIAL ACCOUNTING –I	To enable the students to recollect the basics of accounting and prepare them to understand advanced treatments in preparation of final accounts. To enable the students to convert the single-entry system into the double-entry system and make them to understand the accounting of consignment and branch accounts.
PRINCIPLES AND PRACTICES OF BUSINESS MANAGEMENT-I	To understand the basics of management and its evolution to manage the business entities effectively by getting the insights into the managerial functions.
FINANCIAL ACCOUNTING-II	To make the students to understand various issues of partnership firms and accounting aspects of different forms of business.
PRINCIPLES AND PRACTICES OF BUSINESS MANAGEMENT-II	To enable the students to understand managerial functions and their significance to steer the business entity on a right track.
CORPORATE ACCOUNTING-I	To workout accounting issues from the inception to the liquidation of companies.
MARKETING MANAGEMENT	To study and critically analyse the basic concepts of marketing and to impart the knowledge on recent issues in marketing.
QUANTITATIVE TECHNIQUES-I	o equip the students with necessary statistical tools to analyse the business performance to take appropriate decisions
CORPORATE ACCOUNTING –II	To acquaint the students with accounting issues on bank accounts, insolvency accounts, insurance claims, self-balancing ledgers, and valuation of goodwill.
COMPANY LAW AND SECRETARIAL PRACTICE	To orient the students towards strategic position and role of the company secretary and motivate them to find their career spot in that lucrative area
QUANTITATIVE TECHNIQUES –II	To equip the students with statistical tools to analyse the data inputs to come out with scientific inference and to forecast the trends.
PRINCIPLES AND PRACTICES OF AUDITING	To enable the students to appraise the whole process of auditing
BUSINESS LAWS	To equip the students with comprehensive provisions on contracts, to throw light on Sale of Goods Act and Intellectual Property Rights.

FINANCIAL MANAGEMENT	To provide a conceptual understanding on financial management and enable the students to take important financial decisions by applying appropriate techniques and approaches
COST ACCOUNTING –I	To make the students have a comprehensive understanding of cost concepts and enable the students to examine different techniques and approaches for cost control.
INCOME TAX-I	To provide the students an insight into basic concepts of income tax and enable the students to compute income from employment, house property and business &profession by considering income tax provisions.
CONTEMPORARY AUDITING	To orient the students with the knowledge of audit of company and other entities, preparation of audit report and observe the professional ethics to be followed while auditing the accounts in the light of contemporary issues
FINANCIAL SERVICES	To equip the students with the knowledge of various financial services which support the economic activities and to enable them to find a place in financial services sector for their career growth.
MANAGEMENT ACCOUNTING	To enable the students to analyse financial statements of business enterprises to take prudent managerial decisions.
COST ACCOUNTING-II	To equip the students with various methods and techniques of costing to take cost-effective business decisions.
HUMAN RESOURCE MANAGEMENT	To orient the students with various issues of management of human resources to improve the productivity of business entities.
INCOME TAX –II	To provide the students an understanding on the Income Tax provisions on capital gains, income from other sources and whole gamut of other provisions with respect to computation of total income of individuals, HUF and firms.

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I SEM

Subject: Fundamentals of Algebra and Calculus

Code:21BSC1C1MTL

COURSE OUTCOME STATEMENT

At the end of the course, students will be able to ….

1. Learn to solve system of linear equations.
2. 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.
3. Sketch curves in Cartesian, polar and pedal equations.
4. Students will be familiar with the techniques of integration and differentiation of function with real variables.
5. Identify and apply the intermediate value theorems and L'Hospital rule.

Subject: Algebra and Calculus Lab

Code: 21BSC1C1MTP

COURSE OUTCOME STATEMENT

At the end of the course, students will be able to ….

1. Learn Free and Open Source Software (FOSS) tools for computer programming.
2. Solve problem on algebra and calculus theory studied in MATDSCT 1.1 by using FOSS software's.
3. Acquire knowledge of applications of algebra and calculus through FOSS.

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II SEM

Subject: Algebra and Calculus

Code: 21BSC2C2MTL

COURSE OUTCOME STATEMENT

At the end of the course, students will be able to ….

1. Recognize the mathematical objects called Groups.
2. Link the fundamental concepts of groups and symmetries of geometrical objects.
3. Explain the significance of the notions of Cosets, normal subgroups and factor groups.
4. Understand the concept of differentiation and fundamental theorems in differentiation and various rules.
5. Find the extreme values of functions of two variables.

Subject: Practicals based on Algebra and Calculus – II

Code: 21BSC2C2MTP

COURSE OUTCOME STATEMENT

At the end of the course, students will be able to ….

1. Learn Free and Open Source Software (FOSS) tools for computer programming.
2. Solve problem on algebra and calculus theory studied in MATDSCT 1.1 by using FOSS software's.
3. Acquire knowledge of applications of algebra and calculus through FOSS.

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III SEM

Subject: Ordinary Differential Equations & Real Analysis-I

Code: 21BSC3C3MTL

COURSE OUTCOME STATEMENT

At the end of the course, students will be able to ….

1. Distinguish between linear, nonlinear, partial and ordinary differential equations.
2. Recognize and solve an exact differential equation.
3. Recognize and solve a linear differential equation by use of an integrating factor.
4. Make a change of variables to reduce a differential equation to a known form.
5. Find particular solutions to initial value problems.
6. Solve basic application problems described by first order differential equations and total Differential Equations.

Subject: Practical on Ordinary Differential Equations & Real Analysis – I

Code: 21BSC3C3MTP

COURSE OUTCOME STATEMENT

At the end of the course, students will be able to ….

1. Gain hands-on experience of Free and Open Source software (FOSS) tools or computer programming.
2. Solve exact differential equations.
3. Plot orthogonal trajectories.
4. Find complementary function and particular integral of linear and homogeneous differential equations.

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5. Acquire knowledge of applications of real analysis and differential equations.
6. Verify convergence/divergence of different types of series.

IV SEM

Subject: Integral Transform & Partial Differential Equations

Code: 21BSC4C4MTL

COURSE OUTCOME STATEMENT

At the end of the course, students will be able to ….

1. Solve system of first order simultaneous differential equations.
2. Find Laplace transform of some basic functions.
3. Apply Convolution theorem for solving problems.
4. Solve second order linear partial differential equations in two variables with constant Coefficients by finding complimentary function and particular integral.

Subject: Practical on Integral Transform & Partial Differential Equations.

Code: 21BSC4C4MTP

COURSE OUTCOME STATEMENT

At the end of the course, students will be able to ….

1. Learn Free and Open Source software (FOSS) tools or computer programming.
2. Solve problems on Partial Differential Equations and Integral Forms.
3. Find Laplace transform of various functions.
4. Find the Fourier Transform of periodic functions.
5. Solve differential equations by using Integral transforms.

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Special functions and PDE – I – 4.2 Special Functions and Partial Differential Equations - I	concept of C-R equations. It enables the students to recognize the major classifications of PDEs and to be competent in solving linear PDEs using classical solution methods.

B.Sc.- V Semester Integral transforms Applied Mathematics – 5.2	Enables the students to recognize the different methods of finding Laplace transforms and Fourier transforms of different functions. They apply the knowledge of L.T, F.T in finding the solutions of differential equations, initial value problems and boundary value problems. It enables the students to learn about scalar and cross product of vectors in 2 and 3 dimensions represented as differential forms or tensors, the vector-valued functions of a real variable and their curves and intrinsic geometry.
B.Sc.-V Semester Optional – I Graph Theory - I	Enables the students to model and solve real-world problems using graphs and trees, both quantitatively and qualitatively.
B.Sc.- VI Semester Trigonometry, Topology and Fuzzy Sets – 6.1 Numerical Analysis – 6.2	Enables the students to define and illustrate the concept of topological spaces and continuous functions and to define connectedness and compactness and to illustrate the concepts of separation axioms. It enables the students to derive numerical methods of approximating the solution of problems of continuous mathematics.
B.Sc. VI Semester Optional – II Graph Theory - II	Enables the students to model and solve real-world problems using graphs and trees, both quantitatively and qualitatively.
Project Work	There is a project for B.Sc. VIth semester for 100 marks (70 for External and 30 for internal) of any one of the optional subjects of their choice.

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DEPARTMENT OF MATHEMATICS

COURSE OUTCOMES

Course	Outcomes
B.Sc. – I Semester Algebra – 1.1 Mathematical logic, Theory of equations, Matrices Calculus – 1.2	Enables the students to students to learn about mathematical logic in the study of theoretical computer science, polynomials, and algebraic equations, applications of matrices and determinants to solve equations. Enables the students to learn about successive differentiation in the field of engineering, partial derivatives, total derivative in the field of geometry, applied mathematics
B.Sc.- II Semester Algebra – 2.1 Abstract Algebra, Sequences and series of real numbers Advanced Calculus – 2.2 Differentiability, Integral calculus, line and multiple integrals and gamma and beta functions	Enables the students to learn about the properties implied by the definitions of groups and rings, use the definitions of convergence as they apply to sequences, series and functions. Enables the students to compute limits, derivatives of algebraic, trigonometric, inverse trigonometric, exponential and logarithmic functions.
B.Sc.-III Semester Algebra – 3.1 Linear algebra, Rings, Integral domains and fields Differential Equations - 3.2 Differential equation and Total Differential Equation	Enables the students to solve systems of linear equations, recognize the concepts of the terms span, linear independence, basis, and dimension and apply these concepts to various vector spaces and subspaces. It enables the students to solve differential equations of first order using graphical, numerical and analytical methods and solve and apply linear differential equations of second order.
B.Sc.-IV Semester Real and Complex Analysis – 4.1 Complex Analysis and Real Analysis	Enables the students to apply the mean value theorems and the fundamental theorem of calculus to problems in the context of real analysis. To represent complex numbers algebraically and geometrically and to apply the

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DEPARTMENT OF BIOTECHNOLOGY

Course Module: Bachelor of Science (B.Sc)
First Basic Language: English
Second Basic Languages: Kannada/Hindi/Additional English.

Compulsory Papers:

1. Indian Society: Continuity and Change & Digital Fluency (I Semester)
2. Social Development in India & Environmental Studies (II Semester)
3. India and Indian Constitution & Artificial Intelligence (III Semester)
4. Open Elective Papers:

Optional Subjects:

The student shall opt any one of the subject combinations given below. Each combination consists of two optional subjects with the same weightage.

Subject Combinations:

1. Biotechnology, Botany,
2. Biotechnology, Chemistry
3. Biotechnology, Zoology

Programme Outcome

The students who are studying B.Sc in Life Sciences will have ample opportunities to do higher education like B.Ed, Master degree in Chemistry, Zoology, Botany, Microbiology, Biotechnology, Bioinformatics, Molecular Biology, Environmental Science, Wildlife Zoology & Management, Food & Nutrition and Marine Biology. After Master's degree they can pursue their Ph.D (Research) in any one of the above listed subjects. Later they can become Scientists by continuing their research in universities and R & D wings of Life Science related industries. Another better opportunity for Life Science students is to obtain jobs in food industries as quality control officers, technicians, experts etc. One more potential area which provides excellent job opportunities in R & D wing and marketing field by offering handsome salary is Pharmaceutical industries and Biotech industries also provide some opportunities on par with pharmaceutical

industries. Inspite of all these opportunities in the field of Science they can also appear for UPSC & KPSC and other competitive examinations. One more interesting thing is that they can start self employment activities like Biotechnology Consulting, Biotechnology Research Services, Agricultural Biotechnology, Dairy, Poultry, Apiculture, Sericulture, Aquaculture etc.

Specific Programme Outcome

After the completion of course, students are enabled to acquire sufficient knowledge, variety of laboratory skills, art of applying knowledge and experiences to solve problems, ability to get jobs, capacity to establish industries related to livestock rearing and inturn become self reliant. By the virtue of the knowledge, skills and experiences acquired during six semesters. The student can work in various capacities efficiently both in government and corporate sectors and in other private organizations with attractive packages. Apart from all, the student ultimately develop a multi-faceted personality to lead his life in the society.

DEPARTMENT OF BIOTECHNOLOGY(NEP)

Course	Outcomes
B.Sc. I-SEM(NEP) **Cell Biology and Genetics**	Student should be able to understand the structure and function of the cell organelles, the chromatin structure and its location and the basic principle of life, how a cell divides leading to the growth of an organism and also reproduces to form new organisms. How a cell communicates with its neighbouring cells. They should acquire the knowledge about the principles of inheritance, Mendel's laws and the deviations, in addition to how the environment plays an important role by interacting with genetic factors.
B.Sc. II-SEM(NEP) **Microbiological Method**	Students will be able to understand and explain basic principles and different kinds of microscopes. They should be able to explain the process of different sterilization and staining techniques. They should understand and compare various types of stains and dyes. They should be able to understand the role of drugs in disease control and their mechanism of action.
B.Sc. III-SEM(NEP) **Biomolecules**	Students will be able to acquire knowledge about types of biomolecules, structure, and their functions. They will be able to demonstrate the skills to perform bioanalytical techniques They can apply comprehensive innovations and skills of biomolecules to the biotechnology field.

B.Sc. IV-SEM(NEP) **Molecular Biology**	Students will be able to study the advancements in molecular biology with the latest trends. They will acquire the knowledge of structure, functional relationship of proteins and nucleic acids. They will be aware about the basic cellular processes such as transcription, translation, DNA replication and repair mechanisms.
B.Sc. V-SEM(NEP) Plant Biotechnology(5.1)	This course aims to equip students with a comprehensive understanding of plant biology, covering areas such as physiology, genetics, and molecular biology. Students will learn to apply biotechnological tools like plant tissue culture and genetic engineering, along with molecular markers and genomic approaches for genetic mapping and breeding programs. The course prepares students to address real-world challenges in agriculture, food security, and environmental sustainability through the application of plant biotechnology approaches.
B.Sc. V-SEM(NEP) Animal Biotechnology(5.2)	This course aims to equip students with a comprehensive understanding of cultured cell biology,covering aspects such as adhesion, proliferation, differentiation, Morphology and Identification. Additionally, it develops into the manipulation of animal reproduction, exploring techniques like artificial insemination, embryo transfer, invitro fertilization, and somatic cell cloning, while addressing ethical consideration and applications like recombinant vaccines and probiotics. This course emphasizes staying abreast of recent advances and applications in theses fields.

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Bachelor of Science (B.Sc.)

Course Module

First Basic Language	:	English
Second Basic Language	:	Kannada/Hindi/Additional English/Telugu

Compulsory Papers:-

1. Indian Constitution (I Semester)
2. Environmental Studies (II Semester)
3. Fundamentals of Computer Applications (III & IV Semester)
4. OPEN Elective Papers

Totally there are 21 Open Elective Papers. Of which the student shall study a three papers in II III IV & Environmental Studies Semesters according to their Choices. Flexibility is provided to the students in choosing Open Elective Papers.

Optional Subjects:
The students shall opt any one of the subject combination given below. Each combination consists of three optional subjects with the same weight-age.

Subject Combinations:

Physics	Chemistry	Mathematics
Physics	Mathematics	Computer Science
Physics	Mathematics	Statistics
Chemistry	Botany	Zoology
Chemistry	Botany	Bio-Technology
Chemistry	Zoology	Bio-Technology
Computer Science	Mathematics	Statistics

Programme Outcome

The Students pursuing their Bachelor Degree in Science have wide opportunities to do higher studies such as B.Ed., Post Graduate Studies in different subjects. After Masters Degree they can pursue their Ph.D [Research] in any one of the above listed subjects. Later they can become scientists by continuing their research in Universities and R & D wings of related industries and organizations like DRDO, ISRO, BARC, IISc, NCBS, ICAR, TIFR, etc. Life Science students also find opportunities in Food Industries as quality control officers, Technicians, Experts etc. One more potential area which provides excellent job opportunities with handsome salary is R & D wing and marketing field of Pharmaceutical Industry. Bio-Tech industries also provide some opportunities on par with Pharmaceutical industries.
In addition to all these opportunities in the field of science, they can also appear for UPSC, KPSC, KEA, BSRB, SSC, RRB and other Competitive Examinations.

Specific Programme Outcome

At the end of the course, the programme enables the students to acquire sufficient theoretical knowledge, instrumental skills and practical experience in using devices, instruments, and machineries and to work in research laboratories. This programme help the student get jobs in both Government and Private organizations and industries. This programme also helps the students to realize and take up the responsibility to take innovative steps to meet the energy needs of the eco-friendly society

DEPARTMENT OF PHYSICS

COURSE OUTCOMES

Course	Outcomes
B.Sc. – I Semester PHY 101: Mechanics & Properties of Matter	Fundamentals of mechanics of rigid and elastic bodies are studied. An understanding of space and time is correlated in different frames of reference. A detailed study of properties of regular bodies enables the students to apply in related industries.
B.Sc.- II Semester PHY 201: Heat, Thermodynamics, Waves & Oscillations	The principles of Calorimetry, Waves and oscillations, the development of Thermodynamics, challenges of Low Temperature Physics and Cryogenics, Ultrasonics, the Magical Beats, acoustics of buildings and Microphones are thoroughly studied.
PHY OET 201: Mechanics and Properties of matter	Fundamentals of Newtonian mechanics is introduced, which gives an understanding of basics of physics.
B.Sc. – III Semester PHY 301: Electricity, Vector Analysis & Electromagnetic theory	A detailed study of current electricity, electronics and basic network theorems helps the students to understand higher electronics. The fundamentals of vector analysis enables the student to express the advanced theoretical and experimental facts and inventions, The understanding of the universe and its origin, applications of electromagnetic waves is studies using Universal Maxwell's equation.
PHY OET 301: Thermodynamics, waves and oscillations	Heat and thermodynamics, Radiation, Low temperature, Waves and Oscillations are introduced.
B.Sc. IV Semester PHY 401: Physical Optics, Fibre Optics and Relativity.	The advanced Optical phenomenon and their uses are studied together with experiments to verify the phenomenon. The principles and vast usage of Optical Fibres in modern telecommunication system and medicine are the highlights of the study. The relativistic ideas of fundamental units are studied.
PHY OET 401: Electronics and Theory of Relativity	Basic ideas of electrical components, wave optics, Optical fibers, Display devices and Special theory of Relativity are introduced.
B.Sc. V Semester PHY 501: Paper 5.1 Atomic Physics, Molecular Physics and Lasers.	A detailed progressive study to understand the Structure of Atom, Models of Atom, Atomic Spectra and Molecular Spectra and their vast applications in material science are highlighted. Raman effect which revolutionized the application in industry and medicine, lasers in medicinal physics are introduced and studied.

PHY OEP 501: Atomic, Energy and Astrophysics	Ideal of atomic models, laser and Raman Effect, Super conductivity, energy physics and Astrophysics are introduced.
PHY 502: Paper 5.2 Statistical Mechanics, Quantum Mechanics and Electronics – I	The basic principles of Statistical Mechanics, Quantum Mechanics and Electronics in research oriented applications are studied. Devices like Semiconductor diodes, Bipolar Junction Transistor, FET, MOSFET, Oscillators, Multi vibrators, Flip flop circuits are included in the study.
B.Sc. VI Semester PHY 601: Paper 6.1 Nuclear Physics, Solid State Physics, Astrophysics and Biophysics	A detailed study of Nucleus, its properties and Nuclear Spectroscopy with its applications towards nuclear medicine, energy physics is studied. Non conventional energy sources like solar, wind, tidal, bio energies are typically studied and challenges the students to design alternate eco-friendly energy sources. The fundamentals of Astrophysics like stars, temperatures of stars, HR diagrams are introduced. The cell and its structure and physical phenomenon in the anatomy of humans are studied in Biophysics
PHY 602: Paper 6.2 Materials Science & Electronics - II	The latest forth coming and challenging branch in Physics i.e., Material Science, Nanoscience, applications of Nanomaterials are introduced and their applications are highlighted. Digital electronics, modulation and demodulation in Telecommunication and physics of TV and antenna are studies in detail. Different projects to design alternate energy sources, electronics devices to help in creating clean and green society are given to stake holders.
Project Work	There is a project for B.Sc. VIth semester for 100 marks (70 for External and 30 for internal) of any one of the optional subjects of their choice.

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DEPARTMENT OF CHEMISTRY

COURSE OUTCOMES

Course	Outcomes
B.Sc – I Sem CHT-101	**INORGANIC CHEMISTRY:** Students will learn about, Chemical bonding, Quantum mechanics, Periodic properties. **ORGANIC CHEMISTRY:** Gain the knowledge about the basic reaction and their mechanism along with hybridization of orbitals. **PHYSICAL CHEMISTRY:** learned basics in physical properties of gas, liquids and amorphous solids.
B.Sc – II Sem CHT-201	**INORGANIC CHEMISTRY:** In this semester, they will learn about, Valence bond theory, Some compounds of p-block elements. **ORGANIC CHEMISTRY:** Alkanes and cycloalkanes, Alkenes, Dienes and Alkynes, Nomenclature of benzene derivatives. **PHYSICAL CHEMISTRY:** The rate, order and molecularity of reaction and half life period. Second order reaction with examples.
B.Sc – III Sem CHT-301	**INORGANIC CHEMISTRY:** Introduction and definition, position in the periodic table, Lanthanides, Actinides. **ORGANIC CHEMISTRY:** Organic halogen compounds, Carboxylic acids and acid derivatives. **PHYSICAL CHEMISTRY:** Quantum mechanics, Thermodynamics, Limitations of first law of thermodynamics.
B.Sc – IV Sem CHT-401	**INORGANIC CHEMISTRY:** Introduction, nomenclature of coordination compounds. Werner's theory of complexes, experimental evidences in support of Werner's theory. **ORGANIC CHEMISTRY:** Ethers: Definition, nomenclature, methods of preparation, Preparation of aldehydes and ketones by alcohols. **PHYSICAL CHEMISTRY:** Different types of solutions with examples, Statement and meaning of terms, Concept of vapor pressure.
B.Sc – V Sem CHT-501	**INORGANIC CHEMISTRY:** Origin magnetic behavior, Magnetic properties of complexes, Electronic spectra of transition metal complexes. **ORGANIC CHEMISTRY:** Introduction and types of

DEPARTMENT OF BOTANY

COURSE OUTCOMES

Course	Outcomes
B.Sc- I Semester –Botany- Code 201 Viruses, Bacteria, Cyan bacteria, Algae , Fungi and Lichens	Paper I Diversity in Vascular Plants 1.) Understand the diversity among Algae. 2.) Understand the Biodiversity of Fungi 3.) Know the Economic Importance of Algae and Fungi
B.Sc- II Semester – Botany- Bryophytes, Pteridophytes, Paleobotany and Gymnosperms.	Paper-II 1. Understand the morphological diversity of Bryophytes 2. Understand the economic importance of bryophytes 3. Understand the morphological diversity of Bryophytes, Ptevidophytes and Gymnosperms
B.Sc- III Semester – Botany- Histology, Anatomy , Embryology and Polynology	Paper-III 1. Know various Tissue systems 2. Perform the techniques in Anatomy 3. Understand the scope and importance of Plant Anatomy
B.Sc- IV Semester – Botany- Plant Ecology and Environmental Biology	Paper- IV 1. Know the scope and Importance of the discipline 2. Understand plant communities and Geological aelaptations in plants 3. Learn about consecution of biodiversity, Non-Conventional energy and pollution.
B.Sc- V Semester – Botany- Plant Morphology, Taxonomy and Economic Botany	Paper-V 1. Understand the role of plants in Human Welfare. 2. Gain knowledge about various plants of economic use 3. Know importance of plants and plant products. 4. Understand the chemical contents of the plant products. 5. Know about the utility of plant resources.
B.Sc- VI Semester – Botany- Cell Biology and Cytogenetic	Paper- VI 1. Gain knowledge about cell science 2. Understand cell wall plasma membrane, cell organelles and cell division. 3. Understand the process of synthesis of proteins and role of genetic code in polypeptide formation

B.Sc- VII Semester – Botany- Plant Breeding , Biotechnology and Plant Tissue culture	Paper- VII 1. Understand the science of plant beading 2. To study the techniques of production of new supervisor crop verities 3. Understand the concept, principles and types of sterilization methods.
B.Sc- VIII Semester – Botany Plant Physiology	Paper- VIII 1. Know importance and scope of plant physiology 2. Understand the process of photosynthesis in higher plants with particular emphasis on light and dark reactions Cz and Ca path ways. Learn about the movement of sap and absorption of water in plant body.

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DEPARTMENT OF ZOOLOGY

COURSE OUTCOMES

Course	Outcomes
B.Sc – I Sem Z-1 Biology of Non-Chordata	Students will learn about primitive creatures and other advanced invertebrate animals living in the nature along with their general characters, nomenclature, identification, significances and association with human beings.
B.Sc – II Sem Z-2 Biology of Chordata & Comparative Anatomy	In this course students will learn about the characters of higher animals including human beings and their interactions with others. In comparative anatomy they compare the different systems in different animals and it helps them to understand the evolutionary significances, similarities, dissimilarities and advancement of organisms from lower level to higher level.
III Sem OEC- Taxonomy & Sericulture	In this open elective course students will learn about biosystematics and also about different taxonomic categories that helps them to identify the organisms easily. In sericulture they will understand about the rearing of silk moth and also about culturing of mulberry trees, which enables them to get self employed and to earn good money.
B.Sc – III Sem Z-3 Economic Zoology & Histology	In economic zoology subject all units are directly related to economical aspects of the human welfare and make the students to develop their own farms like Dairy, Poultry,
OEC – Medical Zoology & Parasitology	Sericulture, Apiculture & Aquaculture. Apart from that histology portion teaches the structure and nature of tissues of organisms including human beings which helps in studying pathological aspects of human diseases and are eligible to work in clinical laboratories. In Medical Zoology paper students will try to learn about the various diseases and their causative organisms, symptoms of the diseases and their preventive measures. By acquiring basic knowledge about these diseases they will be in a position to be aware of them. So it helps in the maintenance of the healthy society. Parasitology paper reveals about the effects of pathogens and their vectors which affects both plants and animals.

B.Sc – IV Sem Z-4 Physiology & Bio-Chemistry	These two parts of the paper are highly essential to understand the body systems, their mechanisms and metabolic activities of the human body. Bio-Chemistry part deals with the chemical composition of cells, tissues, organs and systems, interaction of chemical substances, importance of these as nutrients in
OEC – Dairy Farming	providing energy, build up of body mass, strength etc. The knowledge acquired in these units help the students to get ability to work in medical field, pharmaceutical field, clinical laboratory field as scientists, experts and many more. Dairy farming is the most common occupation of villagers in India. By studying cattle rearing based on the scientific methods and marketing of milk and its byproducts, one can lead his life comfortably even by providing job opportunities to others. This is the most reliable and affordable self employment.
B.Sc – V Sem Z-5.1 Cell Biology & Developmental Biology	This paper makes the students to enrich the knowledge in Life Sciences especially about the fundamental, functional & structural unit of life i.e., cell. The second part of this paper Developmental biology gives thorough information about the development and continuation of organisms including human beings.
B.Sc –V Sem Z-5.2 Environmental Biology & Wildlife Zoology	This paper enables the students to understand our habitats, ecosystems, natural resources, pollutions, anthropogenic pressure on nature, ecological imbalances, causes and solutions of all these and life of wild animals, threats to wild animals,
OEC – Poultry & Apiculture	conservation, climate changes, green house effect etc. The knowledge of all these aspect in present days is highly essential for conservation of nature & wild animals and sustainable development. Poultry is the rearing of fouls and Apiculture is rearing of honeybees are the most suitable self employment job opportunities for rural students. By studying and applying scientific knowledge in these fields students can earn attractive amount and also solve unemployment upto some extent by providing jobs to others. All these OEC papers prescribed in the zoology subject are providing abundant knowledge to develop self employment and job opportunities, ultimately for the welfare of human beings.

B.Sc – VI Sem Z-6.1 Genetics & Biotechnology	Modern and advanced knowledge of the biology will be obtained by studying this paper. Students will get the information about the genes, gene structure, inheritance, gene regulation in protein synthesis, abnormalities of genes and genetic disorders etc. Genetics is emerged as most potential subject in biology by dealing with genes and their inheritance. Biotechnology is a multidisciplinary subject which employs modern technology in dealing of genes & their manipulations in various fields. As a result of which most essential products like human insulin, Bt cotton, Golden rice, hormone production, synthesis of desired proteins & enzymes and other products for the welfare of human beings at lower cost.
B.Sc – VI Sem Z-6.2 Ethology & Evolution	Ethology is recently bifurcated branch of the biology which deals with behavior of organisms. By learning the ethology students will come to know the life activities, nature, mental status etc which help the animals in better survival, identification of its own species and mates, escaping from predators , finding preys etc. To understand the successful survival, adaptation and continuation of living beings, on this planet earth from generation to generation can be possible by studying this paper. Evolution paper makes the students to enrich their knowledge in origin of life on the planet earth and evolutionary history of life from single cell to present day advanced plants & animals with the help of their fossil remains. By the end of this course student will gain utmost knowledge about the living organisms and ability to lead life on his own by developing skills in various fields of life.

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Bachelor of Business Administration (BBA)

Course module

First basic language : English

Second basic language : Kannada/Hindi/Additional English/Telugu

Compulsory papers:

1. 1st semester : PPM,QT,AFM,IC
2. 2nd semester : EVS,ME,BRM,OB
3. 3rd semester : CF,MM,FM,HRM
4. 4th semester : CA,EDP,FMI,BPSA
5. 5th semester : BL,MA,CM,SPL
6. 6th semester : IBM,PMA,TM,SPL
7. OPEN ELECTIVE PAPERS.

Totally, there are 21 open elective papers. Of which the student shall study any three papers in II,III, & V semesters according to their choices. Flexibility is provided to the students in choosing OEP.

Programme outcome

BBA course is a branch of Commerce, Bachelor of Business Administration this course is related to management there are ample opportunities to the students who are pursuing their degree in this course, now a days this course have wide network and related to all other departments

After completion of this course the students will gain the abilities in.

- Pursuing master degree in MBA.
- Applying knowledge of Management theories and practices to solve business problems.
- Faster analytical and critical thinking.
- Ability to develop ethical and value based leadership.
- Applying e business solutions in current environment led by technology .
- Ability to understand analyse and communicate regional, National, Global economic legal and ethical aspects of business.
- Finally this course inherited the qualities of leading them self and others in the achievement of organisational goals contributions effectively to a team environment.
- Student can go for higher studies in B. Ed, Company Secretary Course and Management.
- Teaching field also welcomes them soon after the completing PG course to serve as guest faculty.

Specific program outcome

Finally the students will be back by sufficient knowledge variety of skills in taking business problems ability to get jobs capacity to handle social responsibilities and become self independent. While pursuing this course the students must undergo 6 semesters in each semester they are multiple by different skills knowledge and thoughts in order to lead a successful career life

DEPARTMENT OF COMMERCE (B.B.A)

COURSE OUTCOME

Course	Outcomes
Paper 1.4 - principles and practices of management	To acquaint the students with the functions of management
Paper 1.5 accounting for managers	To develop an insight for students with respect to accounting postulates, principles and utilization of financial and accounting information for planning, decision-making and control.
Paper 1.6 quantitative techniques for managers	To enable the students use simple statistical tools and analyses to solve business related problems
Paper 2.5 business research methods	To familiarize the students with the nature and methods of research and its applications
Paper 2.6 organization behaviour	To orient the students to organizational behaviour and to appraise its relationship with managerial functions, organisational change and development
Paper 3.4 marketing management	To familiarize the students with the marketing concepts and develop their analytical skills, as well as conceptual abilities.
Paper 3.5 financial management	To familiarize the students with the financial environment of business, especially the financial markets
Paper 3.6 human resource management	To provide students with an understanding of the human resources management frame-work.
Paper 4.4 entrepreneurship developments	To familiarize the students to Understand the concept of Entrepreneurship skill and development.
Paper 4.5 financial markets and institutions	To equip students with the overview of financial system in general and financial markets and institutions in particular
Paper 4.6 businesses policy & strategic analysis	To enable the students to develop a holistic perspective of enterprise critical from the point of the view of the top executives
Paper 5.1 business laws	To create Legal Awareness in students for decision making
Paper 5.2 management accounting	This course equips the students with accounting techniques to be used for taking managerial decisions
Paper 5.3 cost management	This paper enables the students to develop cost management skills.

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Master of commerce (M.com)

Course module

Compulsory papers:

1. **1st semester** :Organisation Behaviour, Market Structure & Analysis, Financial Management, Advanced Marketing Management, Accounting Standards & Corporate Reporting and Financial Markets & Institutions.
2. **2nd semester** :Banking System & Evaluation, Contemporary Issues In Accounting, Business Environment & Government Policy, Operations Research For Business Decisions, International Financial Reporting & Standards and Investment Management.
3. **3rd semester** :Business Research Methods, Strategic Management, Accounting For Managerial Decisions, Strategic Human Resources Management, Corporate Tax Planning & Management and Financial Derivatives.
4. **4th semester** :International Business, Business Ethics And Corporate Governance, Strategic Cost Management, Project Report, Corporate Tax Planning & Management-II And International Financial Management.
5. **OPEN ELECTIVE PAPERS**

   Totally, there are 21 open elective papers. Of which the student shall study any three papers in II & III semesters according to their choices. Flexibility is provided to the students in choosing OEP.

   Specialisations

   1. Accounting and tax
   2. Finance

Programme outcome

Master of Commerce is very vast and wide in handling many papers. The word Commerce itself a Gigantic word to imagine because number of subjects are tagged and linked to one another. The students who are pursuing their course have so many options in their career after completing this course. Now a day this program is in more demand due to ample of opportunities in future life and in building career.

- Impart the students with higher level knowledge and understanding of contemporary trends in commerce and business finance
- Equip the students to evaluate environmental factors that influence business operation with the conceptual requirements and skills on preparation and interpretation of financial statements
- Prepare the students to apply Statistical methods and proficient use of tools for modeling and analysis of business data
- Facilitate the students to apply capital budgeting techniques for investment decisions
- Prepare students to appraise the structure and operations of banking system

- Prepare the students for an in depth analysis of investment, portfolio management, investment banking and liquidation of investments
- Develop competency in the students about the laws and regulations, and roles of commercial, government and central banks in controlling money market and inflation
- Facilitate the students to analyse and frame micro financing schemes for rural banking
- Impart the students the concept of risk mitigation in financial sectors and their role in investment decisions of individuals and business enterprises
- Provide guidance to students to plan and undertake independent research in a chosen discipline
- Train the students on teamwork, lifelong learning and continuous professional development
- The students who have completed M.Com can move further in research work like M.phil & PhD.
- M.Com graduates can start a new venture.
- Student of this course can apply for various competitive exams like Banking and other UPSC, KPSC & SSC exams also to get settled in their career.
- These graduates have the opportunities in working at various local, National and international companies.
- M.Com students are gifted in grabbing the opportunity to get specialised in tax & finance courses on the competitions.
- Additional to this M.Com graduates are also welcome to do Law (LLB), Company Secretary (CS) & Charted Accountant (CA) for extra additional qualification.
- Teaching field also welcomes them soon after qualifying KSET/NET to serve as guest faculty/ Assistant Professor.
- Finally this course feels the graduate with Full fledged knowledge in the field of Commerce which are helpful for them in future which builds a beautiful career.

Specific program outcome

The aim of this Programme is to develop Commerce professionals with specialised skills and applied competencies in theoretical and practical knowledge of Accounting & Tax and Finance catering to the contemporary needs of industry and academia by providing student-centric learning ambience backed with critical thinking and problem solving capabilities.

The objective of this Programme is to provide a systematic and rigorous learning and exposure to Accounting & Tax and Finance related disciplines. The main objective of this Programme is to train the student to develop conceptual, applied and research skills as well as competencies required for effective problem solving and right decision making in routine and special activities relevant to financial management and Accounting & Tax Transactions of a business.

DEPARTMENT OF POST GRADUATE STUDIES IN COMMERCE

Course	Outcomes
M.Com -I semester	To remind the basics in economics, accountancy and familiarise the students with the principles of organisation behaviour, they learn different concepts and practices contributed by various authors. This helps them in studying the behaviour of employees in the organisation. Along with these papers students will gain practical knowledge in accounting concepts or financial markets & institutions which ever they opt as a specialisation.
M.Com-II semester	In order to enrich the student knowledge in field of accountancy the students will be learning contemporary issues in accounting and to gain the analytical skills of analyzing practical problems students are going to study operational research along with that IFRS & Invest Management will provide a essential knowledge in the field of corporate sector.
M.Com -III semester	This semester paper aims to provide knowledge in the field of research to solve the practical business problems , strategic human resource will provide the managing the human resource in the organisation with a new techniques and students will get knowledge in the field of financial statement analysis through the study of accounting for managerial decisions.
M.Com -IV semester	The students will be provided with the subjects relating to International business management helps in knowing India foreign trade and strategic cost management will helps students to gain knowledge in modern concepts in cost management and also the students are exposed to project work with reference to their specialization

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DEPARTMENT OF BACHELOR OF COMPUTER APPLICATIONS (BCA and BSc)

COURSE OUTCOMES

Course	Outcomes
BCA I Sem : Computer applications & Programming	Students learn basic computer applications & programming . which helps to learn basic idea and design their own documents for academic purpose
B.Sc (CS) I Sem : Computers Fundamental	Students learn basic computer applications and its usage in different platform. so later they can work for documentation about the academic syllabus.
BCA II Sem : DBMS and OOPS	Students going to learn database concepts and OOPs. After competition of this syllabus students can create database for any runtime applications.
B.Sc(CS) II Sem : Office Automation	Students can understand the skills of making automation work for different default basic applications.
BCA III Sem: Computer Applications, data structure and operating system	Learning about different OS platform and data relationships. Once if they come out from this subject students will gain knowledge of data relationships in memory management.
B.Sc(CS) III Sem :OOPs with C++	OOPS concepts which increases real world entity relationships to build real time applications from users or students.
BCA IV Sem : DWDM,VB,E-Commerce	Interface designing numerical methods, runtime business and data storage learning. Basic things for database design interface for runtime applications . students will learn online business mechanisms.
B.Sc(CS) IV Sem : Data Structure	Students can gain knowledge of how data related each other for run time applications. One of the critical issues in information technology about data. By reading this subject students can gain knowledge of data relationships in memory management.
BCA V Sem : SE,CN,AI,Java,CG	A core subject includes designing, creating attractive interfaces. Students will come up with programming skill to design runtime applications.

B.Sc(CS) V Sem : DBMS, VB	Database linking and interface designing . this subject gives clear understanding on designing of general purpose software creations.
BCA VI Sem :IP,SP,MM,C #,,Unix, WT	Web applications and deploying mechanism. Final stage of students can come out with standard software design mechanisms . Students can design core code for specific purpose software.
B.Sc(CS) VI Sem: CG JAVA	Methods of creating graphics and OOPS concepts by learning this subjects students can gain interface designing and runtime software creation which helps in any user service oriented sectors.

DEPARTMENT OF BACHELOR OF COMPUTER APPLICATIONS (BCA & BSc -NEP)

COURSE OUTCOMES

Course	Outcomes
BCA I Sem : Programming in C	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
BCA I Sem : Web Designing	At the end of the course, students will be able to: • Be familiar with different web design theories and terminology. • Analyze a web page and identify its elements and attributes. • Create web pages using XHTML and Cascading Style Sheets. • Build dynamic web pages using JavaScript (Client side programming).
BCA II Sem : Data Structures using C	At the end of the course, students will be able to: • Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms • Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs • Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs • Demonstrate different methods for traversing trees • Compare alternative implementations of data structures with respect to performance • Describe the concept of recursion; give examples of its use. • Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing

BCA II Sem : Object Oriented Concepts using JAVA	At the end of the course, students will be able to: • Understand the features of Java and the architecture of JVM. • Write, compile, and execute Java programs that may include basic data types and control flow constructs and how typecasting is done. • Identify classes, objects, members of a class and relationships among them needed for a specific problem and demonstrate the concepts of polymorphism and inheritance. • The students will be able to demonstrate programs based on interfaces and threads and explain the benefits of JAVA's Exceptional handling mechanism compared to other Programming Language. • Write, compile, execute Java programs that include GUIs and event driven programming and also programs based on files
BCA III Sem : Database Management System	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.
BCA III Sem : C# and Dot Net Framework	At the end of the course, students will be able to: • Describe Object Oriented Programming concepts like Inheritance and Polymorphism in C# programming language. • Interpret and Develop Interfaces for real-time applications. • Build custom collections and generics in C#.

BCA III Sem : Computer Communication And Networks	At the end of the course, students will be able to: • Explain the transmission technique of digital data between two or more computers and a computer network that allows computers to exchange data. • Apply the basics of data communication and various types of computer networks in real world applications. • Compare the different layers of protocols. • Compare the key networking protocols and their hierarchical relationship in the conceptual model like TCP/IP and OSI.
BCA IV Sem : Python Programming	At the end of the course, students will be able to: • Explain the basic concepts of Python Programming. • Demonstrate proficiency in the handling of loops and creation of functions. • Identify the methods to create and manipulate lists, tuples and dictionaries. • Discover the commonly used operations involving file handling. • Interpret the concepts of Object-Oriented Programming as used in Python. • Develop the emerging applications of relevant fields using Python.
BCA IV Sem : Computer Multimedia & Animation	At the end of the course, students will be able to: • Write a well-designed, interactive Web site with respect to current standards and practices. • Demonstrate in-depth knowledge of an industry-standard multimedia development tool and its associated scripting language. • Determine the appropriate use of interactive versus standalone Web applications.
BCA IV Sem : Operating System Concepts	At the end of the course, students will be able to: • Explain the fundamentals of the operating system. • Comprehend multithreaded programming, process management, process synchronization, memory management and storage management. • Compare the performance of Scheduling Algorithms. • Identify the features of I/O and File handling methods.

B.Sc(CS) I Sem : Data Structures using C	At the end of the course, students will be able to: • Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms. • Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs. • Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs. • Demonstrate different methods for traversing trees. • Compare alternative implementations of data structures with respect to performance. • Describe the concept of recursion; give examples of its use. • Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing
B.Sc(CS) II Sem :	At the end of the course, students will be able to: • Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms • Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs • Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs • Demonstrate different methods for traversing trees • Compare alternative implementations of data structures with respect to performance • Describe the concept of recursion; give examples of its use. • Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing
B.Sc(CS) III Sem :	At the end of the course, students will be able to: • Understand the features of Java and the architecture of JVM. • Write, compile, and execute Java programs that may include basic data types and control flow constructs and how typecasting is done. • Identify classes, objects, members of a class and relationships among them needed for a specific problem and demonstrate the concepts of polymorphism and inheritance.

	• The students will be able to demonstrate programs based on interfaces and threads and explain the benefits of JAVA's Exceptional handling mechanism compared to other Programming Language. • Write, compile, execute Java programs that include GUIs and event driven programming and also programs based on files
B.Sc(CS) IV Sem : Database Management System	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.

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Internal Quality Assurance Cell (IQAC),
VEERASHAIVA COLLEGE,
BELLARY-KARNATAKA.

PRINCIPAL
VEERASHAIVA COLLEGE
BALLARI

V.V.Sangha's

Veerashaiva College, Ballari – 583104.

(Affiliated to Vijayanagara Sri Krishnadevaraya University, Ballari)

Bachelor Computer Applications and Bachelor of Computer Science

Course Module:

About the course: Academic Aims

To give experience of undertaking a significant individual design and development exercise from conception through to design, implementation and delivery.

The students can study different area subjects apart from computer science and applications papers like , Indian constitution ,Environment studies ,sociology , History ,Optional English , Regional languages etc.,

Learning Outcomes:

What types of computer specialists may be produced?

Developing countries, in common with those where the use of computers has reached a higher level, need people with specific knowledge and skills. It is possible to make a broad distinction between those who provide and maintain computer systems but are not directly concerned with their use, and those who actually use computer systems. In the user group, one can also distinguish between those who specialize in data processing, which may be in a scientific, administrative, industrial or commercial environment, and those working in the area of information systems, again in differing contexts.

With these practical distinctions in mind, a more detailed classification is the following: System programmers, with special knowledge and the ability to develop the software required to make computer systems effective in relation to operating systems, compilers, interpreters, communications software and networking. Applications programmers, with knowledge of specific fields of application and of data-processing techniques, and the ability to construct substantial programs and packaged software for users.

The successful student will be experienced and empowered in undertaking significant academic work in a self disciplined, organized, and professional manner from conception to documentation.

Specific Programme Outcome:

The focus of the program is on preparing graduates for software development careers that

emphasize mathematical, scientific, and engineering applications.

The program also prepares students for their careers by emphasizing communication, teamwork, ethics, and by examining the local, global, and societal impacts of innovation and technological advancement. At the time of graduation, all students will:

1. Possess a strong foundation in the software development process;
2. be able to solve problems using a variety of programming languages and have extensive experience with at least one high-level language;
3. Have a background in computer hardware and experience with a variety of operating systems;
4. Possess an extensive background in mathematics and an appreciation of the scientific method;
5. Have an understanding of the theoretical foundations of computing;
6. Have developed effective communication skills and have experience working with teams;
7. Possess an understanding of professional, ethical, legal, security and social issues and responsibilities.

V.V. Sangha's
VEERASHAIVA COLEGE, BALLARI
(Affiliated to Vijayanagara Sri Krishnadevaraya University, Ballari)
Master of Science (M.Sc.)

Courses Offered:

The students shall opt any one of the subject given below. Each Subject has 4 Theory Papers and 2 Practical for each semester

Subjects:

1. **M.Sc. in Physics [Solid State Physics as Specialization]**
2. M.Sc. in Chemistry [General Chemistry as Specialization]
3. M.Sc. in Zoology [ ]

Programme Outcome

The Students pursuing their Master's Degree in Science have wide opportunities to do higher studies such as M.Phil., PhD [Research] in any one of the above listed subjects. Later they can become scientists by continuing their research in Universities and R & D wings of related industries and organizations like DRDO, ISRO, BARC, IISc, NCBS, ICAR, TIFR, etc. Life Science students also find opportunities in Food Industries as quality control officers, Technicians, Experts etc. One more potential area which provides excellent job opportunities with handsome salary is R & D wing and marketing field of Pharmaceutical Industry. Bio-Tech industries also provide some opportunities on par with Pharmaceutical industries.

In addition to all these opportunities in the field of science, they can also appear for UPSC, KPSC, KEA, BSRB, SSC, RRB and other Competitive Examinations.

Specific Programme Outcome

At the end of the course, the programme enables the students to acquire sufficient theoretical knowledge, instrumental skills and practical experience in using devices, instruments, and machineries and to work in research laboratories. This programme helps the student to get jobs in both Government and Private organizations and industries. This programme also helps the students to realize and take up the responsibility to take innovative steps to meet the energy needs of the eco-friendly society. Soon after the completion of M.Sc. in physics, they can strive to get entry in to organizations like DRDO, ISRO, BARC, IISc, NCBS, ICAR, TIFR by taking entrance exams conducted by respective organizations.

DEPARTMENT OF POST GRADUATE STUDIES IN PHYSICS

Course	Outcomes
M.Sc. – I Semester PH HCT110: Mathematical Physics I PH HCT120: Quantum Mechanics 1 PH HCT130: Atomic, Molecular and Optical Physics PH HCT140: Electronics PH HCP 150: Electronics Lab PH HCP 160: General and Computational Lab	An understanding and solving of differential equation is exercised thoroughly with various methods, like special functions, Fourier Series, integral transform, matrices, tensors which enables the students to solve any analytical treatment, also the students learn HTML learning of Fortran Language. And a detailed study of Fundamentals of Quantum Mechanics and Electronics, Atomic, Molecular and Optical Physics
M.Sc. – II Semester PH HCT 210: Mathematical Physics II PH HCT 220: Quantum Mechanics II PH SCT 230: Elements of Solid State Physics PH SCT 240: Nuclear Physics PH OET 251: General Physics PH HCP 260: Practical III PH HCP 270: Practical IV	Advanced Mathematical Physics, Quantum Mechanics are explored together with Elements of Solid State Physics, Nuclear Physics. This study enables the students to develop skills for fabrication of electronic devices and to know nuclear instruments. The student is given an opportunity to apt General Physics as Open Elective Subject in which optics, electricity and magnetism, atomic and nuclear physics are studied.
M.Sc. – III Semester PH HCT 310: Classical Mechanics PH HCT 320: Electrodynamics and Plasma Physics PH SCT 330: Solid State Physics I PH SCT 340: Solid State Physics II PH OET 351: Energy Science PH HCP 350: Practical V-Solid State Physics I PH HCP 360: Practical VI-Solid State Physics II	The student specializes in Solid State Physics, essentials of advanced electronics and its devices. Also, a detailed study of Classical Mechanics, Electrodynamics is reviewed to understand space and energy. An introduction to plasma Physics and its production is given. The student is given an opportunity to apt Energy Science in which non-conventional sources of energy, Bio-fuel, Hydrogen as fuel and to develop skills to manufacture energy in large scale.
M.Sc. – IV Semester PH HCT 410: Statistical Mechanics PH HCT 420: Analytical Techniques and Instrumentation PH SCT 430: Solid State Physics III PH SCT 440: Solid State Physics IV PH PROJECT: 200 Marks	The specialized study in Solid State Physics is enhanced together with a detailed studies in Statistical Mechanics is done. The student is made to develop analytical techniques to design devices and instruments. Student is made to work on unique project to enhance the practical knowledge of the relevant topics.

COURSE OUTCOMES
SEMESTER 1
CHI HCT: 1.1 -Concepts and Models of Inorganic Chemistry
Outcomes:

- To know the structure and bonding in molecules / ions and predict the structure of molecules / ions.
- To learn the periodic properties of the different groups of compounds focusing on production methods and application of selected elements and compounds.
- To know the different definitions of acids / bases and predict the reactions between acids and bases.
- To learn the selected crystal structures and to explain what kind of parameters that affects the crystal structure of a compound.
- To be able to describe the stability of metal complexes by the use of formation constants and to calculate thermodynamic parameters from them.
- To be able to name coordination compounds and to be able to draw the structure based on it's name.

CHO HCT: 1.2- Theoretical Organic Chemistry

- To understand the basic concepts and mechanism in organic chemistry.
- To know stereochemistry and various possible conformations of organic compounds and how it affects the reaction outcome.
- To learn the stereochemistry substitution and aromaticity.
- To identify the stereochemical notation.
- To be able to recognize the types of isomers in geometric isomers.
- To get an idea about the various kinetic and thermodynamic factors which control the organic reactions.
- To familiarize the various types of aromatic substitution reaction and their Mechanism.

CHP HCT: 1.3- Chemical Thermodynamics and Chemical Kinetics

- To know the basic concepts in classical thermodynamics and to learn the thermodynamic aspects of various processes and reactions
- To understand the different aspects of statistical thermodynamics and its applications.
- To understand the Maxwell's relationships, spontaneity, equlibria-Temperature, pressure dependence of thermodynamic quantities
- To study the concept of thermodynamic probability
- To learn the Maxwell – Boltzmann, Fermi – Dirac and Bohr's Einstein statistics Comparison and applicationsTo know about the Partition functions
- To know the detail study of Simultaneous reaction

CSA SCT: 1.4- Analytical Chemistry – I

- To know the Limitations of analytical methods, classifications of errors, accuracy, precision, minimization of errors, significant figures and computations, mean and standard deviation.
- To understand the practical and theoretical application of Titrimetic and Gravimetric analysis.
- To know the Principle, distribution law, choice of solvents for extraction, synergic extraction, techniques-batch, continuous and multiple extractions and applications.

SEMESTER 2

CHI HCT: 2.1- Coordination Chemistry.

- To know the structure and bonding of important coordination compounds
- To understand the magnetic properties of complexes and to know how magnetic moments can be employed for the interpretation of their structure
- To get an overview about the stereochemistry of coordination compounds

CHO HCT: 2.2- Heterocyclic Chemistry, Natural Products Reagents in Organic Synthesis.

- To understand the IUPAC nomenclature of heterocyclic ring systems (3-7 memberd rings and simple fused systems)
- To know the methods of synthesis, electorphilic and nucleophilic substitutions reactions of pyrrole, furon, thiophene, pyridine ring systems. Compression of basecity of pyridine, piperidine and pyrrole.
- To get an overview chemistry of Natural Products Alkaloids Terpenoids and steroids.
- Carbohydrates, Proteins and Nucleic acids.
- To understand the reagents in organic synthesis, applications of reagents in organic synthesis and functional group transformation

CHP HCT: 2.3- Electro-, Quantum- and Photochemistry.

- To understand the basic and application of Electrochemistry.
- To know the methods and applications Debye-Huckel theory of strong electrolytes, Debye Huckel – Onsager equation.
- To understand the basic Introduction, reversible and irreversible electrodes. Polarization, Ohmic overvoltage, concentration overvoltage, activation overvoltage.
- To known the basic and application of Quantum Mechanics in chemistry.
- To get brief about, Wave function, particle duality of material particles, de Broglie equation, Heisenberg uncertainty principle. Concept of operators (operator – operand), algebra of operators.

CSA-SCT 2.4- Analytical Chemistry-II.

- To understand the basic Introduction about Group Theory and Symmetry,
- To known about Symmetry elements & Symmetry operations, groups and their applications.
- To get brief about, Electromagnetic radiation and its applications.
- To known about spectroscopy and basics, application of UV-Visible Spectroscopy.
- To known basic about, Flame Photometry and Atomic Absorption Spectrometry, atomic Emission Spectrometry and Inductively Coupled Plasma, nephelometry and Turbidometry.

SEMESTER 3

CHS HCT: 3.1- Spectroscopy – I

- To get brief about, the rotation of molecules.
- To known basic and application about, Vibrating diatomic molecule.
- To known basic and application about, Raman Spectroscopy.
- To get brief about, Infra Red Spectroscopy, Introduction – Molecular vibrations – Mode of Vibrations, calculation of vibrational frequencies, instrumentation-– FT – IR Spectrometer.
- To known basic and application about, HNMR Spectroscopy, Introduction – Nuclear spin and magnetic moment, origin of NMR spectra
- To understand the basic and application of X-Ray Diffraction, X-Ray diffraction, Bragg's laws, Miller indices laws.

CHI HCT: 3.2 NUCLEAR CHEMISTRY AND MATERIALS SCIENCE

- To known basic and application about, nuclear chemistry
- To get brief about, Induced radioactivity, nuclear fission, fusion.
- To understand and basic and application about, materials science, Atomic packing in crystals.
- To known about, Electronic Properties and Band Theory applications.

CHP HCT: 3.3 Advanced Physical Chemistry

- To known about, Statistical Thermodynamics, Concepts of distribution, thermodynamic probability and most probable distribution.
- Brief resume of concepts of laws of thermodynamics.
- To known about, Application of variation theorem Quantum Mechanics.
- To understand and basic and application about, Solid State Chemistry, Bonding and conductivity, mechanism.

CSE SCT: 3.5 ENVIRONMENTAL AND BIOCHEMICAL ANALYSIS

- To known about, Application of Environmental Segments, Air Pollution and Soil Pollution

- To understand and basic and Classification of pollutants and their characteristics, sources, prevention and control.
- To known about, Hydrologic cycle, sources, criteria and standards of water quality.
- To understand and basic and application about of Physical and chemical properties of soils.

OET SCT: 3.1-Analytical and Organic Chemistry

- To understand Principles of Chromatography.
- To known about, Introduction, classification of organic compounds, Gas Liquid Chromatography.
- To known about, Principles, apparatus, preparations of plates HPLC Principles.
- To known about, Principles, apparatus, preparations of Thin Layer Chromatography.
- To get the Introduction, classification of organic compounds.

SEMESTER 4

CHO HCT – 4.1- ADVANCED ORGANIC CHEMISTRY

- To be able to known the Introduction, classification, sterols, hormones, androgens, oestrogens.
- To be able to understand the Synthesis and therapeutic applications of non-steroidal hormones.
- To become familiar with Classification, terminology and principle of stereoselectivity, Strategy of stereoselective synthesis.
- To be able to describe the Catalytic hydrogenation, alkylation, stereoselective formation of double bond.
- To known the Interaction of electromagnetic radiation with matter, types of excitations, Jablonski diagram, fate of excited molecule, quantum yield, transfer of excited energy.
- To be able to understand the, Photochemistry and Rearrangement in Heterocycles.

CHI HCT: 4.2 ADVANCED INORGANIC CHEMISTRY

- To known the interaction of metal Ions in Biological Systems.
- To be able to describe the metal deficiency chelation therapy and metal complexes as drugs.
- To known about the Chlorophyll and its role in photosynthesis, transport and storage of dioxygen.
- To be able to understand the, Fundamental reactions, Organometallic Reaction mechanisms and catalysis.
- To learn the Inorganic pigments, molecular materials and fullerides.

CHS HCT: 4.3 SPECTROSCOPY AND CHROMATOGRAPHY

- To known about the principle, apparatus-columns, sample application, mobile phase, stationary phase, detectors, applications
- To known the Introduction and Basic theory about Mass Spectroscopy, types of ions – molecular ion, fragment ion, meta stable ion, base peak, factors affecting fragmentation, intensity of M+ peaks

- To be able to describe the Principles of Fluorescence, Phosphorescence, and Chemiluminescence.

CSP SCT: 4.4 POLYMER SCIENCE AND TECHNOLOGY

- To known about the, Basic Concepts of polymers and Classification of polymers.
- To become familiar with Polymerization conditions and polymer reactions. Polymerization in homogenous and heterogeneous systems, Polymerization Techniques.
- To learn the, analysis and testing of polymers-chemical analysis of polymers,
- To known about the, Polymer structure and physical properties-crystalline melting poit Tm-melting points of homogenous series.
- To known about the, Chemical and physical properties of commercial polymers.
- To be able to understand the, Biomedical polymers: contact lens, dental polymers, artificial heart, kidney skin and blood cells.

CHI HCP-4.7 PROJECT WORK/THESIS/DISSERTATION

- Project work / Thesis / Dissertation shall be carried out under the supervision of a qualified teacher in the concerned Department.
- A student may however, in certain cases, be permitted to work for the project in an Industrial/Research Organization, on the recommendation of the Head of the Department. In such cases, the project work shall be jointly supervised by a faculty of the Department and an Engineer / Scientist from the organization and the student shall be instructed to meet the faculty periodically and to attend the review committee meetings for evaluating the progress.
- The Project Report/Thesis / Dissertation report / Drawings prepared according to approved guidelines and duly signed by the supervisor(s) and the Head of the Department shall be submitted to the concerned department.
- The deadline for submission of final Project Report / Thesis / Dissertation is within 30 calendar days from the last working day of the semester in which Project / Thesis / Dissertation is done.
- If a student fails to submit the Project Report / Thesis / Dissertation on or before the specified deadline he / she is deemed to have not completed the Project Work / Thesis / dissertation and shall re-register the same in a subsequent semester.
- A student who has acquired the minimum number of total credits prescribed in the Curriculum for the award of Masters Degree will not be permitted to enroll for more courses to improve his/her cumulative grade point average (CGPA).

Course Code	Paper	
ZOT-HCT 1.1	**Animal systematics**	• In this paper, students will learn about the principles of taxonomy, Species concepts, Procedure of collections, preservation, enrating, cataloging, and identification, Phylogenetic interrelationship various invertebrates. • Upon completion of this paper, student will able understand the animals, their inter relationship and integration in their ecosystem. Student also able identify animals, classify them based on their salient features.
ZOT-HCT 1.2	**Biology of non-chordates**	• The main concepts of this paper are types of locomotion and locomotors organs, Food and feeding habits of non-chordates, the animal respiration and excretion, organs system for respiration and excretion and mechanism and nervous system and reproduction systems in some the primitive animals advanced animals. • Upon completion of this paper, students are able to understand the certain physiological aspects like locomotion, excretion, nervous system and reproduction in non-chordates. • Students will be able perform hands-on practice on certain physiological features of animals.
ZOT-HCT- 1.3	**Cell and molecular biology**	• In this paper, students will learn about the cells and their organelle, Molecular organization and functions aspects of orgnaelles, • Molecular events during different stages of cell cycle, organic complexes of cells, Semi conservation of double stranded DNA, Genetic transposition. Immunology as a tool in biology and medicine. • At the end of this paper, students are able identify animal and plant cells and their composition, extraction of DNA, RNA and other aspects of the cells. • Upon completion of this paper students are able conduct experiments related to cells and their components.
ZOT-HCT- 1.4	**Aquatic biology**	• This paper comprises aquatic biology, physicochemical and biological parameters of freshwater and marine water, tropic condition and aquatic environment, interrelation of abiotic and biotic components of water body, energy flow etc. • Upon completion, students are able to differentiate all

		aquatic animals respect to their habitat and feeding system. • Student are able to estimate some physico chemical parameters like pH, Turbidity, EC, Chloride, Alkalinity, DO, CO2 Hardness of water
ZOT: HCT-2.1	**Biology of chordates**	• In this paper students will study the Origin of chordate in the light of recent theories, life cycle of some protochordates and significance. Fishes and diversity, Breeding behaviour and parental care of living Amphibia, Extinct reptiles, Adaptive radiation in living reptiles, Poisonous and non-poisonous snakes in India. • Further flight adaptations and mechanism, breeding behaviour will be covered. In mammals origin and evolution, Adaptive radiation in Marsupials. Diversity and evolution will be covered. • In the end the study students will be in a position to understand the animals under chordate, their diversity and distribution, and adaptive radiations. Students will also able to identify the species based on their salient feature
ZOT: HCT-2.2-	**Developmental biology**	• In this paper students will learn about Developmental Biology, Anatomical, and Experimental approach to Developmental biology, cloning in mammals and the Stem cell research and regenerative medicine. • They also learn about early development, biochemical and physiological gradients. • Upon completion of this paper students take up the experimental work on certain lower grade organism with respect to reproduction.
ZOT: SCT-2.3	**- Wildlife biology and conservation**	• In this paper, student will learn about the historical accounts on wild life conservation, its importance, natural resources, distribution of animals in several biogeographic regions of India and their biology. • They also learn about India-Project Tiger, Project Gir Lion, Project hangul, musk deer project, Manipur Deer project, Project Elephant, Crocodile Breeding Project, Great Indian Bustard project. Wildlife legislations and Wildlife Act, 1972. • Upon completion of this paper students can able to understand the complete fauna and their distribution in different geographical region.

ZOT: OET-2.1 -	**Human physiology**	• In this paper students will learn about functions of different organs system in human, physiology of cardiac muscles, cardiac arrhythmias, ECG myocardial infarction and cardiac arrest, blood circulation, Nutrition and balanced diet and vitamins, transport of gases, • Micturition and diuretics and Renal failure and dialysis. • In completion, students can be aware of all the vital organs, their physiological functions, hormonal regulation, and cell integrity. • Students can able to conduct several experiment related to human physiology.
Paper : HCT-3.1-	**Biology of reproduction 56 hours**	• In this paper students will learn about Sex differentiation and development of gonads, Biogenesis of gonadal hormones. • Students also learn about Anatomy and physiology of male reproductive system.. • Upon completion of this paper student are able to understand the complete reproductive system including both male and female, students will be able prepare the models and demonstrate them
ZOT : HCT-3.2-	**Animal physiology**	• In this paper student will going to learn about the Transport of gases in animals, principle and physics involved in reparation, Body temperature in 'cold blooded' animals. Osmotic regulation and enzyme regulation, Muscle and movement, biomechanics, Neuronal circuits, and Genral principles of chemical senses. • After completion of this paper student will be able explain physiological aspect of animals with demonstration tools and kits.
ZOT : SCT-3.1	**Environmental biology**	• In this paper student will going to learn about Environment, different spheres, Components of ecosystem, Energy flow in ecosystem, Biogeochemical cycles (N,C,P cycles). • Student will also learn about renewable and non – renewable resources, utilization of land and water, and Environmental pollution, human health and Human rights. • Upon completion of this paper student will be aware of environmental issues, protection of natural resources and regulation for protection.

ZOT: HCT-4.1	**Biodiversity**	• In this paper students will study the values of biodiversity, consumptive use and productive use, hot spots of biodiversity and endemism and endemic species. • Students also study the possible threats to biodiversity like overexploitation, pollution and biodiversity legislation, Role of Biotechnology in assessment of biodiversity and bioresources • upon completion of this paper student can able understand disseminate the knowledge on biodiversity and its importance to the stakeholders
ZOT: HCT-4.2	**Animal behaviour**	• In this paper students will understand the basics of animal behaviour-brief history, Motivation and conflict behaviour, Stimuli and communication, Ecological aspects of behaviour and Courtship and ritual behaviour. • Upon completion this paper student will have a thorough knowledge on animal behaviour and conflicts.
ZOT: HCT-4.3	**Project**	• In this paper, studen6t will be taught how to chose the topic for research, searching literature, collection and sample and perseveration, data entry and computation etc. • Upon leaning a brief on the above aspects, the students can choose the burning issues in zoology, select their research area and collect the literature pertaining to their research. • Planning will be done to conduct their research either survey or wet lab experiments. • Students can conduct experiments in order to get their research result and try to analyze their data. • Student able to start writing theses and finally submit o the University for Evaluation.
ZOT: SCT-4.4	**Endocrinology**	• In this paper student will learn about the evolution of endocrine function and concept of neuroendocrine system, mechanism of signal transduction, comparative morphology in vertebrates. Glands and their secretion, Hormones of the different origin and their metabolism.

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