DEPARTMENT OF ENGLISH

COURSE OUTCOMES

B.A. I YEAR: Basic English (01)

Course Outcomes:

1. The students know the nature of the subject at U.G.
2. The students acquire more knowledge of various usage of Vocabulary & Basics of Grammar
3. They acquire literary sense & comprehension of the subject.

B.A II YEAR: Basic English (01)

Course Outcomes:

1. To inspire the students to learn the skills of the life through literature.
2. To acquire more knowledge of Vocabulary & Grammar.
3. To improve the writing ability through next level of comprehension.

B.A III YEAR Basic English/MEL (01)

Course Outcomes:

1 .To prepare the students with higher level of Vocabulary & Grammar.
2. To develop the skill of Functional English among the students.
3. To enable the students to read & appreciate the works of Indian writers in English

. B.Sc. I YEAR Basic English (01)

Course Outcomes:

1. The students know the nature of the subject at U.G.
2. The students get more knowledge of various usage of Vocabulary.
3. They acquired the literary sense & comprehension of the subject.

B.Sc. II YEAR Basic English (01)

Course Outcomes:

1. To develop the second level of skills in English Language.
2. To prepare the students with the next level of Vocabulary & Grammar.
3. To develop the comprehension level of the students.
4. The students get more knowledge of structure & semantics.

Programme Outcome (Basic English)

1. They develop sound knowledge of English grammar.
2. Students will be comfortable in oral & written english.
3. Experience life through literature & imbibes moral & human values.
4. They will be familiar to the foreign language.
5. Enjoy reading literature & learns to appreciate different forms of literature.

Programme Specific Outcome (Basic English)

1. Confident in grammar & its usage.
2. Can communicate in english.
3. Learnt life skills through literature.
4. Clears English paper at SDA, FDA examinations.
5. Socially responsible citizens.
6. Capable of deciding their career.

Optional English (21)

Course Outcomes:

B.A I YEAR Optional English (21)

1. To familiarize the students with the rich history & literature of great Britain
2. The students are exposed to the experience of reading the works of Literature.
3. The students will gain an insight into the British accent through Phonology

B.A II YEAR Optional English (21)

Course Outcomes:

1. To acquaint the students with the history & works of English Literature.
2. To make them familiar with the different forms like Novel, Poetry of British English.
3. To acquaint them with the literary terms and literary forms of English.
4. The students can understand the literary values & learn to apply it in practical life.

Optional English (21) PAPER - I

Course Outcomes:

1. To acquaint the students with the nature of Criticism.
2. To make them aware of the Critical Studies in British Literature
3. To acquaint them with the different social trends through Literary Criticism.

Optional English (21) PAPER - II

1. To make them aware of the history of English Language
2. To broaden the scope of studies in Indian Writing in English Literature.
3. To acquaint the students with Indian Poetry as a forms of Litreature.
4. To make the students realise the value of World Classics in Literature

Programme Outcome

Optional English

1. Development of professional & intellectual abilities.
2. Effective Communication Skills.
3. In depth Knowledge of Literature.
4. Insight into the different forms of Literature.
5. Critical evaluation and interpretation of literary text

Programme Specific Outcome

On the completion of the programme the students are able to :

1. Confident in oral & written communication.
2. Critically analyse the works of literature.
3. Are familiar with different genres of literature.
4. Gained adequate knowledge of British & Indian literature.
5. Are comfortable with the British accent .
6. Know the value of english as an International language
7. Develop aesthetic sense

DEPARTMENT OF HINDI

B. A

Programme specific Outcome

BA 1st year:

1. Understanding the origin of Hindi language and its literature.
2. Identifying the dialects of Hindi language family.
3. Analysing the development of Khariboli Hindi.
4. Understanding the concept of history of literature.
5. Understanding the basis of the classification of Hindi literature.
6. Understanding the importance and basis of the names given to each period of Hindi literature.
7. Understanding the features of Adikal, Bhakti kal, Ritikal and Adhunikkal, in context of socio - cultural and political condition of that period.
8. Describing the content and the skill of writings of Bihari in context of the socio cultural condition of his period.

BA 2nd year

1. Describing the spirit of nationalism as well as nature consciousness in Prasad's poem 'Beeti Vibhawari Jaagri' and Nagarjun's 'Unko Pranam'.
2. Describing the dual nature of modern people in present era.
3. Understanding the importance of environmental protection through Shukdev Prasad's essay.
4. Understanding the cultural spirit of Hazariprasad Dwivedi through his essay 'Kya nirash hua jay '
5. Understanding the love for animals as well as people in character sketches of Mahadevi Verma.
6. Understanding the social consciousness of Premchand, Harishankar Parsai, Usha Priyamvada and Manu Bhandari through their short stories.
7. Understanding the role played by the poets of Bhakti cult in literature and society.
8. Describing the progressive nature of sant Kabir and his writings.
9. Describing the krishna leela poetry of Soordas by relating it with his philosophy of his life.
10. Describing the Rama Bhakti poetry of Tulsidas along with the philosophy of Bhakti cult.
11. Understanding the vision of Mira in context of her Krishna Bhakti poetry.

BA 3rd year:

1. Understanding the reason of emergence of Adhunikkal in Hindi literature.
2. Identifying the eminent Hindi writers of each period.
3. Understanding the reason of emergence of Adhunikkal in Hindi literature.
4. Understanding the literary trends of Adhunik kal.
5. Understanding the history of development of Hindi drama, short stories and novels.
6. Understanding the discourse of women and dalits in Hindi literature.
7. Understanding the drama Dhruvswamini written by Prasad in context of struggle for independence of women in patriarchal society.
8. Understanding the vision of Premchand about middle class and his concern for strengthening the freedom movement in India through Gaban novel.
9. Understanding the change in content and style of expression in short stories in

different periods through the stories of Premchand, Agey, Mannu Bhandari, Bhishma Sahani, Swayam Prakash and Udayprakash.

10. Understanding the spirit of nationalism of Bharatendu Harishchandra and Balkrishna Bhatt.
11. Understanding the cultural consciousness of Hazariprasad Dwivedi.
12. Understanding the mythological as well as aesthetic aspect of the river Narmada through a travelogue of Amritlal Bengar.
13. Understanding the thoughts of Mahadevi and Harishankar Parsai about modern society.
14. Understanding the meaning, concept and importance of Functional Hindi.
15. Understanding various forms of Functional Hindi according to its area of application. Understanding the importance of translation.
16. Understanding various forms of writing in media.
17. Understanding the concept of proof reading.
18. Describing the philosophy of life as well as poems of 'Chayawadi' writers Prasad, Nirala, Mahadevi.

Programme Outcome

PO: 1 Consciousness about the issues related to women: The students got scope to gain knowledge and share their ideas about the forms of exploitation faced by women in feudalistic system and also learned about its long drawn effects in society, through the lectures followed by group discussion sessions on women issues, held in the department.

PO: 2 Relation between stories and society: The student gained knowledge about the relation between the socio cultural condition of a society and the short stories through the guest lecturers organized on 'Hindi Kahani Ki Vikas Yatra', where the history of development of Hindi short stories was discussed in relation with the socio cultural impact registered in Hindi stories in different period

PO:3 Concept of various forms of prose : Students gained knowledge about the various forms of prose like 'Rekhachitra, Nibandh, Sanssmaran, Vyangya, Bhashan, Natak, Upanyas from the guest lecture organised on 'Hindi Ki Vividh Gadya Vidhayen'.

PO:4 Knowledge about reality of middle class: The writers like Premchand, Nagarjun made an effort to highlight the mentality of middle class by depicting the actions and behaviour of the persons of middle class in their writings. The students got scope to gain knowledge about the reality of middle class expressed in the writings of Premchand through lectures followed by group discussion sessions.

PO: 5 Cultural consciousnesses and the concept of travelogue: The students gained knowledge about the concept of travelogue and realized the role played by cultural consciousness in writing travelogues, through the lectures organised on the travelogue of Amrit Lal Bengar. .

PO: 6 Art of analyzing 'Sanskritik and Lalit Nibandh Kala: 'Lalit and Sanskritik Nidandh' are considered to be such art forms which are difficult to understand due to the symbols used by the writers to express the deeper realities in their writings. The Students gained knowledge to analyze these art forms through the guest lectures organised on the essays like 'Kutaj' and 'Mere Ram Ki Mukut Bheeg Raha hai'.

PO: 7 Environmental consciousness: The students gained knowledge about the concept of 'Paryavaran' and its role in making human life healthy, by paper presentation and group discussion sessions on 'Paryavaran Sanrakshan' organised in vernacular Hindi class.
PO : 8 Scientific consciousness : Students gained knowledge about this reality that how the outlook of people towards 'Dhumketu' has changed with time and how the new inventions and discoveries brings new light to the world, by the paper presentation and group discussion sessions on 'Dhumketu' organised in vernacular Hindi class.

Programme Specific Outcome

PSO: 1 Understanding the relation between society and literature and analyse the role played by Hindi literature in past and present.
PSO: 2 Understanding the strategy of converting worship into the movement of struggle for cultural freedom.
PSO: 3 Developing skill of writing official letters in functional Hindi.
PSO: 4 Developing philosophy of life inspiring by the vision of eminent writers.
PSO: 5 Indentifying the nature and character of person through his actions.
PSO: 6 Gaining socio cultural consciousness.
PSO: 7 Exploring, analysing and enriching the self knowledge.

DEPARTMENT OF HISTORY

COURCE OUTCOME OF BA HISTORY AND ARCHAEOLOGY

1) Knowing about the collection of archaeology and literary data , analyzing and using the data in the reconstruction of history
2) Tracing out the evidence of early life of the man through tools and materials used by the early man
3) Critical evaluation of culture from period to period and place to place
4) Adoption of outcome moralities of the past events in the life
5) Student can used to make corrections or can change their customs from the historical; knowledge
6) Finding out that how the India became the land of religious diversity and how the people lived with great harmony. And it will helps to retain the national integrity
7) The study of the development of ancient science and technology provoke the students to make better India in scientific manner.
8) Cultural study keeps India at the peak of the cultural evolution.
9) The study of the past society helps to the students in the evaluation of the present society and they will become able to pick out social evils and retain well customs in present social life
10) Growth of nationalism and the contributions of freedom fighters for the Indian independence provoke the students to build integrated nation and the land full of patriots.

Programme Outcomes

PO 1: Knowledge: students gain the knowledge of ancient, medieval and modern Indian history.

PO 2: Understand: background of stone age, Indian civilizations, religions, customs, political history, administration and so on

PO 4: Understand the present existence political , social, religious and economic conditions of the people in various empire or dynasty Analyse the relation between the past and the present is lively presented in the history

PO 5: Develop practical skills helped in the study and understanding of historical events.

They:

a) Draw a historical maps, charts and diagrams
b) Prepare historical models, tool etc.

PO 6: Develop interest in the study of history and activities relating to history as follow

a) Collect ancient arts, old coins and other historical materials
b) Participate in historical drama and historical fests
c) Visit places of historical interests, archaeological sites, museum and archives
d) Read historical documents, maps, chart etc.
e) Play active role in activities of the historical organizations and associations
f) Write articles on historical topics

PO 7: The study of history helps to important moral education

PO 8: History installs the feeling of patriotism in the hearts of the pupils

PO 9: Prepare of various types of competitive examinations

PO 10: Acquaint with range of issues related to Indian history that span distinct areas

BA HISTORY

Programme Outcome Specific outcomes

Semester I: History of India from Pre History age to Kushanas:

On the completion of the course, students are able to:

1) Understand the reconstruction of ancient Indian history.
2) To know the pre historic period on Paleolithic, Mesolithic, Neolithic and Chalcolithic cultures.
3) Understand the Harappan civilization andAryans.
4) Applied the teachings of mahaveera and Buddha.
5) Understand the Mauryan empire, Shatavahanas and Kushanas.
6) To indicate the places in map develop the skill.

Semester II: History of India from Gupta to 1206 AD

1) To know the reconstruction of ancient Indian history on source
2) Understand the establishment of Gupta and Vardhana empires
3) To know the political and cultural history of chalukyas of Badami and Rashtrakutas
4) Understand the south Indian rulers like Pallavas and Cholas
5) To know the foreign invasion and Indian philosophy
6) To identify the places in the map.

Semester III: History of India from 1206 to 1526 AD

1) To know the establishment of new dynasties of Delhi Sultanates

2) Understand the political history of Slave, Khilji, Tughlaq, Sayyid and Lodi dynasties
3) To know the administrative reforms of Allauddin Khiljji and Mahmad Bin Tughlaq
4) Understand the foreign policy of Mahmad Bin Tughlaq
5) To know the rise of Vijayanagara empire and Bahmani dynasty
6) Understand the culture and architecture of south Indian dynasties
7) To improve the skills to locate the places in map

Semester IV: History of India from 1526 to 1707 AD

1) To know the Mughal empire ruled India
2) Understand the extension of empire by Babur, Humayun, Akbar, Jahangir, Shahjahan and Aurangajeb
3) To know the cultural contributions of Mughals
4) To understand the Marathas rule in South India
5) Applied the teachings of the saints of Bhakti movement in India
6) Locating the places in map and improve the skills

Semester V

Paper I; History of India from 1707 to 1857 AD

1) To know the advent of Europeans
2) Understand the expansion and consolidation of British power under Warren Hastings, Cornwallies and Lord Wellesley
3) To know the reforms of Marques Hastings and Bentinc
4) Critically evaluate the great revolt of 1857
5) Indicate the places in map and develop the skill of drawing the India map

Paper II: History of Cultural Karnataka early time to 1336 Ad

1) To know the pre historic period, geographical features and source of Karnataka
2) Understand the dynasties of Shatavahana, Kadamba and Gangas
3) To know the extended the dynasties of Chalukyas of Badami, Rashtrakutas and Chalukyas of Kalyana
4) Understand the dynasties of Kalachuris of Kalyana and Hoyslas and minor dynasties of Karnataka
5) Improve the skill I ton locating the places in map

Semester VI

Paper I: History of India (1858 to 1950 AD)

1) To know the foreign policy and the reforms of Litton, Rippon and Corzon
2) Understand the great personalities like Rajaram Mohanroy, Ranade, Dayanand Saraswati, Vivekananda and others' reformative works
3) To know the constitutional developments on acts of 1909, 1919, 1935 and 1947
4) Understand the rise and growth of Indian National Movements of I, II and III phase
5) Locating the places in India map and improve the skill

Paper III: History and Culture of Karnataka (1336 to 1956 AD)

1) To know the great Vijayanagara empire and Dynasty of Bijapur and Mysore Odeyar ruled in Karnataka
2) Understand the politica;l history of Hyder Ali and Tippu Sultan, great reforms of Cubbon and Bowring
3) To know the reforms made by Krishnaraja Odeyar, Sir M. Vishweshvaraiah and Mirja Ismail
4) Understand the role of Karnataka in the freedom Struggle of India and unification of Karnataka
5) Locating the places in Karnataka map and improve the skill

Department of Political Science

PROGRAMME OUTCOME:

After completion of B.A programme students should be able to –

1.Students enable to develop academic proficiency in the sub fields of Indian government and politics, comparative government, International relations, Public administration, political theory and political ideology.

2 Students enable to analyse politics and policy problem and formulate policy options.

3 Students enable to discuss the major theories and concepts of political science and its subfields and also deliver thoughtful and well articulated presentations of research findings.

PROGRAMME SPECIFIC OUTCOME:

On completion of the B.A students are able to,

- Serve as a politician.
- Work as a teacher in college, schools, and high schools.
- Serve as a political party member, political advisor and well citizen of india.
- Work in elections and political as well as administrative system.
- Can admit to M.A, LLB, MSW, and MBA.
- Can prepare for competitive exams.

COURSE OUTCOME:

BA I year

Political Theory:

- Explaining the nature scope of political science, political theory and approaches to the study of political science- Normative, behavioural.
- Evaluating the theories of state.
- Analyzing the concept of sovereignty, nationalism, modernism and post-modernism.

Western Political Thought

- Providing an insight into the ancient Western Political Thought, ancient Greek Political Thought with focus on Aristotle, Plato.
- Examining the contributions of Acquinas, Augustine, Machiavelli, J. S. Mill and Karl Mark.

BA II year

Indian Political Thoughts:

- Explaining the Indian political thought from ancient India to modern India.
- Analyzing humanist and nationalist thoughts of Basava, Gandhiji, Ambedkar, Nehru, J. P. Narayan and R. M. Lohia.

Comparative Government and politics:

- Studying the nature and scope of comparative government and politics.
- Discussing the constitution of UK and USA and comparative analysis of legislature executive, judicial and party system of UK and USA.

BA III year

Public Administration

- Explaining the nature, scope of P.A.
- Discussing departmental organisation, its units and principles.
- Analysing the role of chief executive and new trends in P.A.

Indian Administration:

- Explaining the administrative structure at centre and state.
- Discussing the personnel administration.
- Analysing budgetary process.

I.N. Organizations:

- Explaining origin nature and evolution of I.N. organization, League of Nations.
- Evaluating the working of U.N. and its organs.

DEPARTMENT OF SOCIOLOGY

COURSE OUTCOMES OF B.A. SOCIOLOGY

COURSE OUTCOMES:

B.A. PART-I, FIRST SEMESTER.

1. Fundamental Principles of Sociology

After Completion of the course, Students are able to Understand;

Unit-I

- After studying students are capable to understand Origin, Development, Scope and Subject matter of Sociology
- They are also Acquired the Knowledge on Relationship of Sociology with other social Sciences and Significance of the study of Sociology

Unit- II

- Students or acquired the skill of analysis of Fundamental sociological concepts like, Society, Community, Association and Institution.

Unit-III

- Understand and acquired the knowledge on the concept of socialization as process of internalization of socio-psychological norms into individual's personality.
- Students are understand the process of social learning as the process of personality development

Unit-IV

- Students are able to understand functional part human society in terms of social interaction and social processes.

Unit-V

- Understand and acquired the knowledge on Culture and Civilization as the fundamental Sociological concepts

COURSE OUTCOMES OF B.A. SOCIOLOGY.

B.A. PART-I, SECOND SEMESTER.

II. Social Institutions and Social Change

Unit-I

- After studying the first chapter students are acquired the knowledge on meaning, nature, functions and importance of social institutions like Marriage. Family and Religion.

Unit-II

- Study of social group help the students to understand necessity of group life, its importance and different types of social groups.

Unit-III

- Study of this chapter enhanced the knowledge of students and made them broad minded persons. Because, they are acquired the problem of social inequality and forms of social stratification.

Unit-IV

- Students are capable enough to control their own behaviour through the study of social control and formal as well as informal means of social control.

Unit-V

- Students are able to analyse the processes of social change and social development. They are also acquired the capability to understand the consequences of globalization.

COURSE OUTCOMES OF B.A. SOCIOLOGY

B.A. PART-II, THIRD SEMESTER.

III. Study of Indian Social Thought.

Unit-I

- Students are Understand the Nature and Importance of social thought along with relationship of social thought with sociology,

Units-II. III, IV and V

- Students are acquired the leadership qualities by studying the thoughts of Manu. Basaveshwara to become social reformer. Students become great leaders by studying Gandhian Principles, Dr. B.R Ambedkar's Thoughts, Jyothi rao pule and Ram Manohara Lohia's Views on Social Revolution and Socialism. Students are also understand the Processes of social change within the frame work and outside the framework of caste system through the study of Prof. M.N. Shrinivas's Social Thoughts.

COURSE OUTCOMES OF B.A. SOCIOLOGY

B.A. PART-II, FOURTH SEMESTER.

IV. Study of Western Social Thought.

- Through the Study of Western social thought students are Understand and acquired the knowledge about the origin. Development of sociology as a separate branch of knowledge.
- Students got the ability to analyse the human society with the help of sociological theories and perspectives by studying contributions of August Comte, Herbert Spence, Emile Durkheim, Karl Marx and Max Weber as the founders of sociology.

COURSE OUTCOMES OF B.A. SOCIOLOGY.

B.A. PART-III, FIFTH SEMESTER.- PAPER-I

V. Study of Indian Society

- In the fifth semester students of sociology understood and acquired the knowledge about Social, Philosophical and cultural heritage of India, through the study of Ashrama System, Varna System, Purusharathas and Shodasa Sanskaras. They are also capable enough to analyse the quality of unity in diversity of Indian society.
- They are also acquired the knowledge of traditional social institutions of india like Family and Marriage
- Students understand the problems of Scheduled caste. Scheduled tribes and OBCs, and they themselves tried to provide solutions to their problems.
- Understand and analyse the caste system as a social institution.
- Understand and analyse the meaning and types of villages in India, and their settlement patterns.

COURSE OUTCOMES OF B.A. SOCIOLOGY.

B.A. PART-III, FIFTH SEMESTER.- PAPER-II

V. Rural development in India.

- Students are able to understand meaning, Objectives, Obstacles and Achievements of Rural Development in India.
- Students are acquired the knowledge about Indian Rural Economy through the study of Land Holding Systems, Land reformation Measures in India, Green revolution and its achievements.
- Students are able to understand Meaning, Objectives of PRIs (Panchayat raj Institutions) Development and Functioning mechanism of PRIs and Structural aspects of 73rd Amendment of Indian Constitution.
- Acquired the knowledge about various rural development programmes like Shrinikhetan, Nilokheri Project, Firka Project and CDP, IRDP and Rural Drinking water programmes, Jalnirmal Yojana and Stree shakti Yojana etc
- Students understand the role of Government and Non Government Organizations as an agents of Rural development in India.

COURSE OUTCOMES OF B.A. SOCIOLOGY.

B.A. PART-III, SIXTH SEMESTER.- PAPER-I

VI. Research Methodology in Social Sciences

- Study of research methodology develop the research thrust among the student,
- Study the research Tools, Types of Methods in social science research, methods of data collection, Editing, coding, tabulating the collected data make the students to conduce positive study of the society.

COURSE OUTCOMES OF B.A. SOCIOLOGY.

B.A. PART-III, SIXTH SEMESTER.- PAPER-II

VI. Social Problems in India

- Study of Meaning, Nature and importance of the study of social problems motivate the students to study of various social problems like Crime, Juvenile Delinquency, Prostitution and HIV AIDS, Corruption and Terrorism etc

PROGRAMME OUTCOME

After Completion of B. A. Degree Programme in Sociology, Students or Candidates are Eligible....

- To become Intelligent, Disciplined and Responsible citizen of the Society.
- Eligible to Pursue Higher Education in Post Graduation Degrees such as M. A. In Sociology, M.S.W., M.B.A., L.L.B., M.A. in Rural Development, Women's Studies, Folk lore, Criminology and Anthropology.
- Candidates are Eligible to Involve and Conduct Research Activities
- Eligible to Appear in Various Competitive Examinations such as UPSC, KPSC, Railways, Banking Sector etc
- Eligible and Expertise to work as Counsellor in Private and Public sector Enterprises, Supervisors in Social Welfare Department, Women and Child Welfare Department and OBCs and Minority Departments etc
- Eligible to become a Social servant as Leader and Social Reformer and a very good Politician.

PROGRAMME SPECIFIC OUTCOMES OF B.A.(Sociology)

After the completion of B. A. Sociology students are able to:

- PSO-1. To Study and Understand the Sociology as a separate branch of knowledge
- PSO-2.To Study and Understand society, Community, Social Institutions, Association and Their Nature, importance and work and Utility.
- PSO-3 To Learn social values, Norms and Culture to become ideal citizens.
- PSO-4. To acquire the knowledge about life and problems of scheduled castes, scheduled tribes and other backward classes and their culture.
- PSO-5. To study of various social problems and to find out remedies.

PSO-6. To create awareness in the society regarding various governmental schemes.

Department of Economics

Programme Outcome

- The students of Economics in Arts programme may able to
- To demonstrate knowledge of empirical tools used in the analysis of data and the graphical and descriptive representation of data
- To learn to application methods and theories of Economics to contemporary Issues.
- To develop entrepreneurship skills and management techniques.
- Know how to conduct Social and Economic Researches.

Programme Specific Outcome

The programme specific outcomes to the students of Economics in Arts programme may able to

- To able to understand basic concepts of economics.
- To demonstrate an understanding of microeconomic and macroeconomic theory.
- To understand the trend in Indian and World Economy.
- To analyze the macroeconomic Policies including fiscal and economic policies of India.
- To provide the knowledge on Methodology of Social sciences.

Course Outcomes

On completion of the course, students of Economics are able to

B.A.I Semester : MICRO ECONOMICS

- Aware of fundamental concepts of economics.
- Able to understand economic approach.
- Know the economic analysis and problem solving.
- Know how to solve basic micro economic problems.
- Analyze consumer behavior and consumer decisions.

B.A.II Semester: MICRO ECONOMICS

- Identify the nature of revenue and cost of production.
- Know the market structure and its role in price and output determination.
- Understand the firm's production processes and decisions.
- Know factor pricing and theories of factor pricing.

B.A.III Semester: MONETARY ECONOMICS

- Understand the concept of money and its functions, monetary standards, value of money and quantity theories of money.
- Know price fluctuations and their impact and policies.
- Identify types of money markets, types of banks and their functioning and policies.

B.A.IV Semester: INTERNATIONAL ECONOMICS

- Understand the theories of international trade and devaluation.
- Know the structure of Balance of payments and determination of foreign exchange rates.
- Understand international financial institutions.

B.A.V Semester: PAPER 1- MACRO ECONOMICS

- Understand the concept of nationalincome, its types and measurement.
- Understand Classical & Keynesian theories of employment.
- Aware of consumption & Investment function.
- Identify the functioning of multiplier and accelerator and their impact.
- Understand fluctuations in economic activitiesand trade cycles.

B.A.V Semester: PAPER 2- INDIAN ECONOMY-I

- Know thorough understanding of Indian Economic System.
- Understand recent structural changes in Indian Economy.
- Identify the changes in human resources in India and its impact and policies.
- Aware of poverty and unemployment in India and its measures.
- Know new economic reforms in India.
- Evaluate the role of agriculture and its policies to improveagricultural productivity in India.
- Aware of agricultural marketing channels and their impact.

B.A.VI Semester :PAPER 1- PUBLIC FINANCE

- Understand the concept of public finance and its theories.
- Know the types and effects of revenues, expenditure and debts of the government.
- Aware of budget and its types.

B.A.VI Semester :PAPER 2- INDIAN ECONOMY-II

- Aware the role, problems and policies of large scale and small scale industrial sectors of Indian Economy.
- Identify the strength and weaknesses of industrial labour, industrial disputes and trade union movement in India.
- Understand the role and functioning of commercial banks, regional rural banks, NABARD and RBI in Indian Economy.
- Know foreign trade position and policies in India.
- Know changes in revenues, expenditure, debt and budget of central government of India.

Department of Psychology

Programme Outcome

1. To gain knowledge of basic concepts of psychology and behaviour
2. To gain an insight into his/her own self
3. To understand others
4. To develop skills in psychometric tests
5. To have knowledge of basic Research Methodology.

Programme - Specific Outcome

1. To be eligible for PG Course in Psychology
2. To apply the psychological concepts in everyday life
3. To specialize in administration of psychometric test
4. To develop skills in counselling

Course Outcome

BA I

1. To understand the biological basis of behaviour and simple process of sensation, perception, learning, intelligence and emotion.
2. To assess personality and develop skills for enhancement of personality
3. To understand differences in intelligence.

BA II

1. To gain in-depth knowledge of social psychology and its application.
2. To develop knowledge about methods like survey, field investigation and attitude scales.

3. To gain understanding of child development (Child psychology) and psychological problems of children

BA III

1. To know basic concepts of Organizational Behaviour, Leadership Theories, Communication Skills.
2. To know an insight into the causes, symptoms of stress and its Management.
3. To be aware of stage specific physical, social, emotional and personality develop and changes as well as hazards in each area.
4. To understand the causes and types of mental disorders.
5. To develop skills in diagnosis, of mental illness, psychotherapy and Counselling.

DEPT.OF MASS COMMUNICATION & JOURNALISM

PROGRAMME OUTCOMES : B.A IN JOURNALISM&MASS COMMU NICATION

- The B.A in Mass communication & Journalism course is designed to provide indepth knowledge about Journalism to the students. They will learn Reporting, Editing, Page Design etc through various softwares.
- The course enables students to develop their own focussed area of interest. Their work related experience can lead to a broad spectrum of culture, media based and artistic activities from interpersonal communication to Newspaper, Radio & Television broadcasting, Public Relations & Advertisement.
- It provides comprehensive knowledge and skills so that, students can work in the field of Print, Electronic & Digital Media as well as in to Academics.
- It provides students an opportunity to critically explore the ways in which world of communication.
- While the emphasis of the course is on the subjects of Journalism & Mass communication. But the course also intends to introduce students to practical experience and knowledge across the other related mediums.

PROGRAMME SPECIFIC OUTCOMES

- Students can work in Newspapers, Magazines, Radio, Television, Advertising agency, Public Relations, News agencies. Apart from this they can work in State Government's Information & Public Relation Dept (KPSC), Union Government's Information Broadcasting Dept, Press Information Bureau, Field Publicity, Prasar Bharti (UPSC)
- They can work as Sub-Editor, Copy Editor, Correspondent, News Editor, Editor, Announcer, News Reader, Programme Executive, Anchor, Content Writer, Script Writer for Radio, TV & Films, Blog Writer, Public Relations Officer (PRO), Photo Journalist, VideoJournalist, Assistant Director (KPSC/UPSC). They can also serve as Academicians.
- They can also work as Freelance Journalist & Freelance Photo Journalist (Apart from their permanent job in other fields). They can also start their own newspaper, magazines and News Agency, Advertising Agency, Public Relation Office.
- Apart from this Students can also work as Cartoonist, Columnist, Analyst, Web Writer, Voice Over Artist, Press Secretary, Media Advisor and can own their You Tube channel.

COURSE OUTCOMES

COURSE: INTRODUCTION TO JOURNALISM

Semester – 1 (Scheme 2019-2022)

Course Outcomes: After completion of the course, the students will able to learn

- What is Mass Communication & Journalism? Functions of Journalism. Press & Democracy.
- History & growth of Indian Journalism. Pioneers of Indian Journalism & language journalism, including kannada journalism. Leading newspapers & periodicals origin and growth.

COURSE: INTRODUCTION TO COMMUNICATION

Semester – 2

Course Outcomes: After completion of the course, the students will able to learn

- Importance of communication. Process of communication, various kinds of communication.
- Mass media and their role. Internet& data bases, Electronic publications, Role of communication in development.

COURSE: WRITING & REPORTING

Semester – 3

Course Outcomes: After completion of the course, the students will able to learn

- What is News? News writing skills &reporting. Style of news writing,
- Principles of News writing. News sources and various types of reporting.

COURSE: EDITING

Semester – 4

Course Outcomes: After completion of the course, the students will able to learn

- Organizational setup of editorial department, how it works? Functions of editorial department, Editing techniques.
- Headline writing, Newspaper design & layout, how to make newspaper attractive.

COURSE: MEDIA LAWS (PAPER-1)

Semester – 5

Course Outcomes: After completion of the course, the students will able to learn

- Indian Constitution, Fundamental rights, Parlimentary privileges,Defamation, Censorship, Right to Privacy, Right Information Act
- Working Journalist Act and necessary, Press commissions and Press Council's Guidelines and Ethics
- News paper and book Registration process, Copy right Act and its usefulness
- Laws related to Broadcasting,telecasting and Advertisement in India, Yellow Journalism, Biased reporting and Ownership of media.

COURSE: RADIO JOURNALISM (PAPER-2)

Semester – 5

Course Outcomes: After completion of the course, the students will able to learn

- Origin & growth of radio. Organizational setup of A.I.R and its functioning. Equipments used for broadcasting. How to produce various kinds of radio programmes.
- How to use different kinds of mikes. How to write news bulletins. Various script writing. Sound editing techniques, mixing & dubbing.

COURSE: PHOTO JOURNALISM & CINEMA (PAPER-1)

Semester – 6

Course Outcomes: After completion of the course, the students will able to learn

- History of photography, legal and ethical aspects of photography. Techniques of photo editing, Types of Camera and caption writing.
- Evolution of cinema. Pioneers of Indian cinema. Current status of Indian cinema industry and Film censorship.
- Various photo editing softwares and their uses.
- Cinema scripting, Kannada Industry prominent directors, movie reviews writing

COURSE: TELEVISION JOURNALISM (PAPER-2)

Semester – 6

Course Outcomes: After completion of the course, the students will able to learn

- Evolution of Television, growth in India. Organizational setup of Doordarshan. Satellite TV channels. Various equipments used in TV studio.
- TV script writing and direction. Various TV programme production. Editing of TV programmes. Light & sound effect.

Department of Geography

Programme Outcomes

PO1. **Knowledge and Understanding of:** 1.The range of Spatio-Temporal analyses of landforms in the world. 2. The evaluation of physiographic divisions. 3. Geomorphologic structure of Karnataka and India. 4. The role of Geographical thought in the world Arial Differentiation. 5. A selection of more specialized optional topics. 6. Statistics as applied to Geographical data.

PO2. **Intellectual Skills**: able to 1.Think logically and organize tasks in to a analytical form assimilate knowledge and ideas based on wide reading and through the internet.

2. Transfer of appropriate knowledge and methods from one topics to another within the subject 4. Understand the Geographical knowledge in a rapidly developing world

5. Construct and test Hypothesis.6. Plan conduct and write a report on a independent team project.

PO3. **Practical Skills:** Students learn to carryout practical work in the field and laboratory with minimal risk. They gain introductory experience in applying each of the following skills and gain greater proficiency in selection of them depending on their choose of optional modules. 1. Interpreting Toposheets and weather maps. 2. Identification of contour lines Isobars and Isohyets. 3. Geographical data analyses techniques. 4. Graphical representation techniques. 5. Analyses the data using appropriate statistical methods and computer packages.

PO4. **Transferable Skills:** 1. Use of IT (word, excel, PowerPoint; processing, use of internet, statistical packages and data bases) 2. Communication of geographical ideas in writing and orally. 3. Ability to work as part of a team. 4. Ability to use library resources. 5. Time management. 6. Carrier planning

PO5. **Geographical Knowledge:** Apply the knowledge of basic Geography, Human Geography and Fundamental process of geographical thought in the Contemporary field.

PO6. **Project / Dissertation Analysis:** Identify the Current Geographical Issues, Formulate the research literature and analyses the project report with meaningful conclusions using principals and methods of geographical hypotheses.

PO7. **Field Investigation:** Use research based knowledge and Research methods including design of the dissertation, analyses and Interpretation of data and development of the information to provide meaningful conclusions.

PO8. **The Geographer and Society:** apply Spatio-temporal issues by the contemporary knowledge to assess land use and land cover, Crop Combination, Crop Concentration and weather forecasting give to Geographical Information System, Global Positioning System, and its importance to the society.

PO9. **Environment and sustainability:** Evaluate the human impact on environment in the present century and Conservation of sustainable development.

PO10. **Ethics:** Apply Ethical Principles and commit to Geospatial ethics and responsibilities and norms of the sustainable development.

PO11. **Field work Survey:** Formulate the Hypothesis and conduct the effective field survey through the questionnaire and Interview Methods.

PO12. **Communication:** Communicate effectively on Geospatial techniques with the GIS, GPS and with society at large, such as a being able to evaluate contemporary issues, effective reports, presentations and receive clear Instructions.

PO13. **Project Management and Finance:** Demonstrate Knowledge and understanding of Geospatial principals and apply these to field work as a member and leader in a field to manage projects and aerial differentiation.

Course Outcomes:

CO1. Critically examine the Geomorphological setting of the world. Know the detail account of the origin of the earth and its major role in the solar system. Students are able to evaluate the various functions of denudation agents which are working in the both surface and interior of the earth.

CO2. Identify and evaluate the uses of the scales in the geographical fields. Students are able to draw the graphical representation of scales and will be know how they are constructed.

CO3. Students will be gain the knowledge about the climatic conditions and surface configuration of ocean basins. They will be known the how they are acting on surface of the earth.

CO4. Students will be able to draw the Graphical Representation of Maps and contour diagrams to examine the various relief features by the contours lines.

CO5. Students will be gain the knowledge about the Physiographic divisions, Human and water resources, agriculture and major crops, as well as transport and tourist centers of Karnataka state. They will understand the Major role of Karnataka State in the Country.

CO6. Students will be able to draw the instruments, signs and symbols of Indian daily weather report. Further students are also able to critically evaluate the weather reports in all four seasons of India.

CO7. Students will be able to know the knowledge about Physiographic divisions, Human and water resources, agriculture and major crops, as well as Minerals and transport system of India. The detail account of the India especially for geographical setting will be used by the students in the all fields.

CO8. Students will be able to identify and evaluate the SOI Toposheets even though color convention, signs and symbols of SOI maps. The students are able to interpretation of topographical maps, cross-section and calculation of exaggeration.

CO9. Students will be able to gain the knowledge of origin and evolution of geographical thought by ancient, middle and modern geographers in the world. The students will be applying the knowledge about major contribution of geographers, themes and emergence.

CO10. Students will be able to draw the various types of projections i.e., simple cylindrical, equal area, Mercator, conical and polar Zenithal Stereographic. The students are also able to sketch the neat diagram of one standard, two standard parallel, Bonne's projection to know the world pattern.

CO11. Students will be able to gain the knowledge about the Human and Economic geography of the world. The Knowledge of the tribes, agriculture and mineral deposits of the world will be used by the students in the all fields.

CO12. Students will be able to apply the knowledge of cartographical representation of the statistical graphs, and diagrams. The Students are also able to apply the techniques of Mean, Median and Mode as well as standard and mean deviation methods in the mathematical fields.

CO13. Students will be able to gain the knowledge about the Environmental Geography i.e., inter dependence between Man and Environment, bio-diversity, conservation of bio-diversity and environmental pollutions. It will be affect on Students activities which are very closely related to environmental protection.

CO14. Students will be able to understand the knowledge of Agricultural and Rural Geography i.e., forming types, agricultural planning, morphological pattern of rural settings and rural continuum. It will be help to critically evaluate the rural background.

CO15. Students will be able to practice the basic Computer applications like M.S Office, M.S. Excel, and Power Point to represent the geographical data. The students are also able to know the components of GIS and apply the modern techniques in mathematical fields.

CO16. Students will be able to formulate the hypothesis, questionnaire, collecting the data and analyze the geographical data in the field survey. The Students will also be able to apply the geographical question by formulating the testable hypothesis.

CO17. Students will be able to Present the dissertation work and geographical data both orally and writing. They will be applying the hypothetical knowledge in their viva-voce and interview method.

Programme Specific Outcomes: **PSOs of B.A Geography**

B.A Part-I

Semester-I

Theory: Geomorphology

On completion of the course, students are able to:

1. Understand the Nature and scope of Geomorphology.
2. Learn about the Origin of the Earth by Nebular Hypothesis and Tidal Theories.
3. Know the Latitudes and longitudes.
4. Know the Interior of the earth.
5. Understand the characteristics of Folds, Faults, Earthquakes and Volcanoes.
6. Understand the various Practicing works of Denudation Agents.

Practical: Scales

On completion of the course, students are able to:

1. Understand the Meaning, Types and Importance of scales.
2. Calculate the Verbal to RF and RF to Verbal Scales.

3. Draw the Graphical Representation of Statement, Comparative, Time, Pace and Diagonal Scales.
4. Learn to actively participate in the Viva-voce and Interview in both orally and writing.

Semester – II

Theory: Climatology and Oceanography

On completion of the course, students are able to:

1. Understand the Structure and Composition of atmosphere, weather and climate.
2. Know the Insulation, Vertical and Horizontal distribution of Temperature.
3. Understand the Pressure and Winds, Humidity and Precipitation.
4. Understand the Origin and Characteristics of Temperate and Tropical Cyclones: Anti-Cyclones.
5. Know the Surface configuration of Oceans, Temperature, Salinity, Tides, Currents and Marine Deposits.

Practical: Maps and Contour Diagrams

On completion of the course, students are able to:

1. Understand the Types and Uses of Maps.
2. Neatly draw the Enlargement and Reduction of Maps by Graphical Methods.
3. Neatly draw the following Relief Feature by contours: Hill, Slopes, Mesa, Saddle, Plateau, Cliff, Spur, Escarpment, ‘U’ and ‘V’ Shaped Valley and Waterfall.
4. Learn to actively participate in the Viva-voce and Interview in both orally and writing.

B.A Part-II

Semester: III

Theory: Regional Geography of Karnataka

On completion of the course, students are able to:

1. Understand the Location, Physiographic Divisions, Drainage System, Climate, Soil and Natural Vegetation of Karnataka.
2. Learn about the Human and water Resource of Karnataka.
3. Understand the Agriculture, Cropping Pattern and its Production.
4. Know the Mineral Resources and Major Industries.
5. Understand the Transports, Ports and Tourist Centers of Karnataka.

Practical: Interpretation of Weather Maps and Instruments

On completion of the course, students are able to:

1. Understand the Study and Interpretation of Indian Daily Weather Reports.
2. Neatly draw the Weather Instruments and its functions.
3. Neatly draw the Sings and Symbols of Weather Maps.
4. Learn to actively participate in the Viva-voce and Interview in both orally and writing.

Semester: IV

Theory: Geography of India

On completion of the course, students are able to:

1. Understand the Location, Physiographic Divisions, Drainage System, Climate, Soil and Natural Vegetation.
2. Know the Human Resources-Spatial Pattern of Population and Population Explosion.
3. Understand the Pattern of Major Crops and Green Revolution.
4. Understand the Mineral, Power Resources and Major Industries.
5. Learn about the Transport and Trade.

Practical: Interpretation of Toposheets

On completion of the course, students are able to:

1. Understand the Marginal Information of Toposheets and Color convention used in SOI Maps.
2. Neatly draw the Signs and Symbols to Represent the Physical and Cultural features.
3. Learn about the Interpretation of SOI Topographical Maps
4. Neatly draw the Cross-section and Calculation of Exaggeration.
5. Learn to actively participate in the Viva-voce and Interview in both orally and writing.

B.A Part-III

Semester: V

Theory Paper-I: Evolution of Geographical Thought

On completion of the course, students are able to:

1. Understand the Nature, Scope and Content of Geographical Thought.
2. Learn about the classical contribution of Geographical thought: Greek, Roman and Indian.
3. Understand the Contributions of Arab Geographers.

4. Know the Major Themes of Alexander Von Humboldt, Carl Ritter and Ratzel.
5. Learn about the Emergence of Modern Geography.

Practical: Paper-I: Map Projection

On completion of the course, students are able to:

1. Understand the classification and Types of Projections.
2. Neatly draw the Simple Cylindrical, Cylindrical Equal Area and Mercator projection.
3. Neatly draw the Conical Projection with one standard, two standards Parallel and Bonne's Projection.
4. Neatly draw the Polar Zenithal Equal Area, Stereographic, Orthomorphic Projection.
5. Learn to actively participate in the Viva-voce and Interview in both orally and writing.

Theory Paper-II: Human and Economic Geography of the World

On completion of the course, students are able to:

1. Understand the Meaning, Nature and Scope of Human and Economic Geography.
2. Learn about the World Physiographic Divisions, Rivers and Climate.
3. Know the Human Races of the World, Major Tribes of the World and India.
4. Understand the Types of Agriculture and Major Crops.
5. Understand the Mineral Resources and Major Industries.

Practical: Paper-II: Statistical Diagrams and Statistics

On completion of the course, students are able to:

1. Neatly sketch the Graphical Representation of Graphs.
2. Neatly draw the Pie, Wind Rose, Dot and Choropleth Maps.
3. Learn about the frequency distribution and Histogram.
4. Understand the calculation of statistical Methods i.e., Mean, Median, Mode, Mean Deviation, Standard Deviation and it Correlation.
5. Learn to actively participate in the Viva-voce and Interview in both orally and writing.

Semester-VI

Theory Paper-I: Environmental Geography

On completion of the course, students are able to:

1. Understand the Definition, Scope and Content of Environmental Geography and Ecosystem.

2. Know the interdependence between Man and Environment, biotic life, Climate, Soil and Water.
3. Understand the Types and Uses of Bio-Diversity, Bio-Diversity at Local, Regional and and Global Level.
4. Learn about the Conservation, Causes and Consequences to Bio-Diversity, Endangered and Endemic species of India.
5. Understand the Types, Causes and Consequences of Environmental Pollution, Measures to control Pollution, Global Warming and Ozone Depletion.

Practical-Paper-I: Computer Application and GIS

On completion of the course, students are able to:

1. Learn about the Basic Computer Application and operating system of MS Word, Excel and Power Point.
2. Practice the Graphical Representation of Data.
3. Understand the Importance and Components of GIS.
4. Learn to actively participate in the Viva-voce and Interview in both orally and writing.

Theory Paper-II: Agriculture and Rural Geography

On completion of the course, students are able to:

1. Understand the Meaning, Nature and Scope of the Agriculture and Rural Geography.
2. Learn about the Types of Forming, Crop Concentration and Crop Combination.
3. Know the Planning and Policies of Agriculture in India, Agro-Climatic Regions of India, Green Revolution and its issues.
4. Understand the Nature and Characteristics of Rural Settlements.
5. Know the Rural De-population, Rural-Urban Continuum, Rural Planning, importance and functions of NREGA.

Practical Paper-II Field Work and Project Report

On completion of the course, students are able to:

1. Understand the formulation of the hypothesis questionnaires which is relevant to field work.
2. Know the method of collecting and primary and secondary data.
3. Learn about the tabulation of collected data and analyzing.
4. Understand the identification of major problem and meaningful conclusion.
5. Apply the testable hypothesis in the relevant fields.

6. Learn to actively participate in the Viva-voce and Interview in both orally and writing.

Department of Botany

B.Sc. Botany

Programme Outcomes

PO1. **Knowledge and understanding of:**

- The range of plant diversity in terms of structure, function and environmental relationships.
- Plant classification and the flora of Karnataka.
- The role of plants in the functioning of the global ecosystem.
- A selection of more specialized, optional topics.
- Statistics as applied to biological data.

PO2. **Intellectual skills – able to:**

- Think logically and organize tasks into a structured form.
- Assimilate knowledge and ideas based on wide reading and through the internet.
- Transfer of appropriate knowledge and methods from one topic to another within the subject.
- Understand the evolving state of knowledge in a rapidly developing field.
- Construct and test hypothesis.
- Plan, conduct and write a report on an independent term project.

PO3. **Practical skills:** Students learn to carry out practical work, in the field and in the laboratory, with minimal risk. They gain introductory experience in applying each of the following skills and gain greater proficiency in selection of them depending on their choice of optional modules.

- Interpreting plant morphology and anatomy.
- Plant identification.
- Vegetation analysis techniques.
- Plant pathology to be added for sharing of field and lab data obtained.

PO4. **Transferable skills:**

- Communication of scientific ideas in writing and orally.
- Ability to work as part of a team.
- Ability to use library resources.
- Time management.
- Career planning.

PO5. **Scientific Knowledge:** Apply the knowledge of basic science, life sciences and fundamental process of plants to study and analyze any plant form.

PO6. **Problem analysis**: Identify the taxonomic position of plants, formulate the research literature, and analyze non reported plants with substantiated conclusions using first principles and methods of nomenclature and classification in Botany.

PO7. **Design/development of solutions**: Design solutions from medicinal plants for health problems, disorders and disease of human beings and estimate the phytochemical content of plants which meet the specified needs to appropriate consideration for the public health.

PO8. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and development of the information to provide valid conclusions.
PO9. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern instruments and equipments for Biochemical estimation, Molecular Biology, Biotechnology, Plant Tissue culture experiments, cellular and physiological activities of plants with an understanding of the application and limitations.
PO10. **The Botanist and society**: Apply reasoning informed by the contextual knowledge to assess plant diversity, its importance for society, health, safety, legal and environmental issues and the consequent responsibilities relevant to the biodiversity conservation practice.
PO11. **Environment and sustainability**: Understand the impact of the plant diversity in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO12. **Ethics**: Apply ethical principles and commit to environmental ethics and responsibilities and norms of the biodiversity conservation.
PO13. **Individual and team work**: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.
PO14. **Project management and finance**: Demonstrate knowledge and understanding of the management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO15. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcomes of B.Sc. Botany

CO1. Critical evaluation of ideas and arguments by collecting relevant information about the plants, so as to recognize the position of plant in the broad classification and phylogenetic level.
CO2. Identify problems and independently propose solutions using creative approaches, acquired through interdisciplinary experiences and a depth and breadth of knowledge/expertise in the field of Plant Identification.
CO3. Accurate interpretation of collected information and use of taxonomic information to evaluate and formulate the position of plant in taxonomy.
CO4. Students will be able to apply the scientific method to questions in botany by formulating testable hypotheses, collecting data that address these hypotheses, and analyzing those data to assess the degree to which their scientific work supports their hypotheses.
CO5. Students will be able to present scientific hypotheses and data both orally and in writing in the formats that are used by practicing scientists.
CO6. Students will be able to access the primary literature, identify relevant works for a particular topic, and evaluate the scientific content of these works.
CO7. Students will be able to apply fundamental mathematical tools (statistics) and physical principles (physics, chemistry) to the analysis of relevant biological situations.
CO8. Students will be able to identify the major groups of organisms with an emphasis on plants and be able to classify them within a phylogenetic framework. Students will be able to compare and contrast the characteristics of plants, algae, and fungi that differentiate them from each other and from other forms of life.

CO9. Students will be able to use the evidence of comparative biology to explain how the theory of evolution offers the only scientific explanation for the unity and diversity of life on earth. They will be able to use specific examples to explicate how descent with modification has shaped plant morphology, physiology, and life history.
CO10. Students will be able to explain how Plants function at the level of the gene, genome, cell, tissue, Flower development. Drawing upon this knowledge, they will be able to give specific examples of the physiological adaptations, development, reproduction and mode of life cycle followed by different forms of plants.
CO11. Students will be able to explain the ecological interconnectedness of life on earth by tracing energy and nutrient flow through the environment. They will be able to relate the physical features of the environment to the structure of populations, communities, and ecosystems.
CO12. Students will be able to demonstrate proficiency in the experimental techniques and methods of analysis appropriate for their area of specialization within biology.

Programme Specific Outcomes: **PSOs of B.Sc. Botany:**

B.Sc. Part-I

Semester-I

Paper-I: Diversity of microbes, algae, fungi and lichens

On completion of the course, students are able to:

- Understand the diversity among Viruses and Viral diseases
- Understand the diversity, structure and reproduction of Bacteria and Bacterial diseases.
- Understand the diversity, structure of Cyanobacteria
- Understand the diversity among Algae.
- Know the systematic, morphology and structure, of Algae.
- Understand the life cycle pattern of Algae.
- Understand the useful and harmful activities of Algae.
- Understand the Biodiversity of Fungi and plant fungal diseases.
- Know the Economic Importance of Fungi.
- Understand the morphological diversity of Lichens.
- Understand the economic importance of the Lichens.

Semester-II:

Paper-II: Diversity of Bryophytes, Pteridophytes and Gymnosperms:

On completion of the course, students are able to:

- Know the taxonomic position, occurrence, thallus structure, reproduction of Bryophytes, Pteridophytes and Gymnosperms.
- Understand the economic importance of the Bryophytes and Pteridophytes and Gymnosperms.
- Know the evolution of Bryophytes and Pteridophytes and Gymnosperms.
- Understand the importance of geological time scale.
- Understand the process of fossils and fossilization.

B.Sc. Part-II

Semester- III

Paper-III: Anatomy and embryology of Angiosperms.

On completion of the course, students are able to:

- Understand the scope & importance of Anatomy.
- Understand the tissues and their types.
- Know the internal structure of primary body of root, stem and leaf in dicots and monocots.
- Know the internal structure of secondary body of root, stem and leaf in dicots.
- Understand the normal and anomalous secondary growth in plants and their causes.
- Gain the knowledge about the quality of wood.
- Learn about the reproductive characteristics of the plant.
- Know the methods of pollination and fertilization.
- Know fertilization, endosperm and embryogeny.

Semester- IV

Paper IV: Plant physiology and Photochemistry.

On completion of the course, students are able to:

- Know importance and scope of plant physiology.
- Understand the plants and plant cells in relation to water.
- Learn about the movement of sap and absorption of water in plant body.
- Understand the process of translocation of solutes in plants.
- Learn and understand about mineral nutrition in plants.
- Understand the process of photosynthesis in higher plants with particular emphasis on light and dark reactions, C3 and C4 pathways.
- Understand the respiration in higher plants with particular emphasis on aerobic and anaerobic respiration.
- Understand the growth and developmental processes in plants.
- Understand the Seed dormancy, physiology of flowering, physiology of senescence plant movements.
- Structure and general features of enzymes.
- Concept of enzyme activity and enzyme inhibition.
- Understand the scope & importance of Photochemistry and Modern medicine.

B.Sc. Part-III

Semester- V

Paper-V: Morphology of Angiosperms and Taxonomy.

On completion of the course, students are able to:

- Understand major modifications in various parts of angiospermic plants.
- Trace the history of development of systems of classification emphasizing angiospermic taxa
- Understand various rules, principles and recommendations of plant nomenclature produces in plant identification.
- Know the conceptual development of “taxonomy” and “systematics‟
- To learn the wide activities in angiosperm and trends in classification.
- Learn about the characters of biologically important families of angiosperms.

- Know the floral variations in angiospermic families.
- Know the process of Herbarium.
- Know the features and functions of Botanical gardens and BSI.

Paper-VI: Ecology and Economic Botany

On completion of the course, students are able to:

- Know the structure and functions of Biosphere.
- Understand plant communities and ecological adaptations in plants.
- Learn about conservation of biodiversity, Non-conventional Energy and Pollution.
- Discover botanical regions of India and vegetation types of Karnataka.
- Understand Bioremediation, Global warming and climate change.
- Understand the role of plants in human welfare.
- Gain knowledge about various plants of economic use.
- Know importance of plants & plant products.
- Understand the chemical contents of the plant products.
- Know about the utility of plant resources.

Semester- VI

Paper-VII: Cell Biology, Genetics and Molecular biology.

On completion of the course, students are able to Understand

- Gain knowledge about "Cell Science".
- Understand Cell wall, Structure and organization of cell membrane, Process of membrane transport and Cell organelles.
- The eukaryotic cell cycle and mitotic and meiotic cell division.
- Learn the scope and importance of molecular biology.
- Know about the genomic organization or living organisms, study of genes genome, chromosome etc.
- Understand the biochemical nature of nucleic acids, their role in living systems, experimental evidences to prove DNA as a genetic material.
- Gain knowledge about the mechanism and essential component required for prokaryotic DNA replication.
- Understand the process of synthesis of proteins and role of genetic code in polypeptide formation.
- The concept of Operon and its structure and regulation.
- Mendelian and Neo-Mendelian genetics
- To study the phenomenon of dominance, laws of segregation, independent assortment of genes.
- To understand the different types of genetic interaction, incomplete dominance,
- Co-dominance, inter allelic genetic interactions, multiple alleles, Linkage and Sex determination in plants.
- Understand the concept of Genetic variation in plants.
- Know the concept of Extra nuclear inheritance in plants.
- Understand the fundamentals of Recombinant DNA Technology.
- Know about the Genetic Engineering.
- Understand the principle and basic protocols for Plant Tissue Culture.

Paper-VIII: Evolution, Plant breeding and Plant Biotechnology

On completion of the course, students are able to:

- Understand the process of evolution
- Understand the science of plant breeding.
- To introduce the student with branch of plant breeding for the survival of human being from starvation.
- To study the techniques of production of new superior crop verities.
- Understand the modern strategies applied in Genetics and Plant Breeding to sequence and analyze genomes
- Get the detail knowledge about modern strategies applied in Plant Breeding for crop improvement i.e. Mass selection, Pureline Selection and Clonal selection.
- Know about exploitation of Heterosis, hybrid and variety development and their release through artificial hybridization.
- Understand the concept, principle and types of sterilization methods.
- Understand the principle and basic protocols for Plant Tissue Culture.
- Understand & perform culture techniques in PTC.
- Understand the fundamentals of Recombinant DNA Technology.
- Know about the Genetic Engineering.
- Know about the applications of PCR, ELISA

Department of Physics

B.Sc Physics

PROGRAMME OUTCOMES

PO1: To enhance the student's academic abilities, personal qualities and transferable skills this will give them an opportunity to develop as responsible citizens.
PO2: To define the basic laws involved in Physics.
PO3: To understand the concepts and significance of the various physical phenomena.
PO4: To carry out experiments to understand the laws and concepts of Physics.
PO5: To apply the theories learnt and the skills acquired to solve real time problems.
PO6: To acquire a wide range of problem solving skills, both analytical and computational and to apply them.
PO7: Impart skills required to gather information from resources and use them.

COURSE OUTCOMES

At the completion of B. Sc. in Physics students are able to,
CO1: Demonstrate a rigorous understanding of the core theories & principles of physics, which includes mechanics, electromagnetism, thermodynamics, & quantum mechanics.
CO2: Learn the Concepts as Quantum Mechanics, Relativity, introduced at degree level in order to understand nature at atomic levels.
CO3: Provide knowledge about material properties and its application for developing technology to ease the problems related to the society.
CO4: Understand the set of physical laws, describing the motion of bodies, under the influence of system of forces.
CO5: Understand the relationship between particles & atom, as well as their creation & decay.
CO6: Relate the structure of atoms & subatomic particles.

CO7: Understand physical properties of molecule the chemical bonds between atom as well as molecular dynamics.
CO8: Analyze the applications of mathematics to the problems in physics & develop suitable mathematical method for such application & for formulation of physical theories.
CO9: Understand the fundamental theory of nature at small scale & levels of atom & sub-atomic particles.

PROGRAMME SPECIFIC OUTCOMES:

SEMESTER-I: Mechanics and Properties of Matter

At the completion of the course students are able,

- To understand basic theorems and concepts of basic physics.
- To understand the dynamics of different types of pendulum and to determine 'g'.
- To understand the elastic properties of matter and expression of bending beam with its application as a cantilever.
- To understand concept of surface tension and its relation with excess pressure and radius of curvature.
- To determine the surface tension by Jaeger's method from experiments.
- To understand concept of fluid flow and pressure energy in fluids.
- To determine Bernoulli's Theorem and its applications: venturimeter, pitot tube.
- To design experiment to determine coefficient of viscosity by using Poiseuillie's equation.
- To understand basic theories related with properties of matter and its application to determine values of various physical quantities associated with matter.
- To develop basic skills to perform experiments to understand the concept from existing theories of Basic physics.
  By performing the experiments students are able to understand the theories of concepts and also obtain the values of some parameters like elasticity, Moment of Inertia, Young' Modulus, Rigidity of Modulus, Stoke's Method , Surface Tension etc.

SEMESTER-II: Kinetic Theory of gases, Thermodynamics, Radiation, Energy Sources and Sound

At the completion of the course students are able,

- To understand and discuss the results of Andrew's experiment and Amagat's experiments.
- To determine van der Wall's equation, Critical constants and concept of Bolye's temperature.
- To understand basic concept of thermodynamics and to distinguish between work done due to Adiabatic and isothermal changes.
- To state laws of thermodynamics and concept of internal energy.
- To understand Carnot's ideal heats engine, Carnot cycle and its efficiency, Carnot's theorem, Otto and Diesel engines with their efficiencies.
- To state first and Second latent heat equations.
- To understand Concept of entropy, Change of entropy in Reversible process and Irreversible process, T-S diagram.
- To learn basic components of simple vapour compression refrigeration, understand its working with Flow diagram.
  By performing the experiments students are able to understand the theories of concepts and also obtain the values of some parameters like Frequency of AC, Velocity of Sound, Thermal conductivity, Specific heat by cooling, verification of Stefan's Law etc.

SEMESTER-III: Geometrical Optics and Electricity.

At the completion of the course students are able,

- To learn Power of lens, Spherical aberration in lens, and to distinguish Chromatic aberration and Achromatism aberration.
- To understand concept of interference pattern due to reflected light in parallel sided thin films and in thin wedge shaped film.
- To demonstrate experimental set up for Newton's rings, theory and its application to determine wavelength of source and refractive index of liquids.
- To demonstrate Michelson Interferometer (experimental setup and its application for measurement of wavelength of monochromatic source).
- To distinguish between Fresnel and Fraunhoffer diffraction.
- To understand theory of plane transmission grating and its resolving power.
- To state Brewster's law and Maluss law for polarization by double refraction in crystals.
- To understand Construction of Polaroid, Quarter and Half wave plates, Nicol prism.
- To learn production and detection of circularly and elliptically polarized light.
- To demonstrate principle and working of Polarimeter or Sacherimeter.
  By performing the experiments students are able to understand the theories of some concepts applications and also obtain the values of some parameters like RC time constant , High resistance by leakage method , Helmholtz galvanometer , Magnetic field along the axis of the coil , Angle of minimum deviation , and also angle of prism by spectroscopic experiments etc.

SEMESTER-IV: Physical optics, Thermoelectricity and Electromagnetic Theory.

At the completion of the course students are able,

- To understand basic concept of current and current density vector.
- To understand Kirchhoff's law by loop analysis.
- To understand and illustrate Network theorem including Thevenin's theorem, Norton's theorem and Maximum power theorem.
- To determine Time constant of L-R and C-R circuit and its physical significances.
- To understand the concept of magnetism and and magnetic properties of materials such as Ferromagnetic, Anti ferromagnetic and Ferrimagnetic.
- To understand the concept of electromagnetic induction, self induction of solenoid, mutual induction of coaxial solenoid
- To illustrate the working of Inductors in series and parallel
- To understand the applications of transformers, losses in transformer, and to distinguish between transformers including closed core transformer, Transformer with tapped secondary, Autotransformer, isolation transformer.
- Apply vector calculus to understand the behavior of static electric and magnetic fields in standard configurations Describe and analyze electromagnetic wave propagation in free-space
- Describe and analyze transmission lines, wave guide
- Understand the basic of fiber optics.
  By performing the experiments students are able to understand the theories of some concepts applications and also obtain the values of some parameters like RP of Telescope , RP of Grating , Capacity by DE Sauty's method, Series and Parallel Resonance circuit , Polarimeter etc.

SEMESTER-V:

PHY 5.1: Classical Mechanics, Quantum Mechanics and Atomic Spectra

At the completion of the course students are able to,

- Apply the basic laws of physics in the areas of classical mechanics, Newtonian gravitation, Types of forces: Forces of Gravitation, Lorentz force, Hooks Force, Frictional Force, and Fundamental Forces of Nature.
- Recognize how observation, experiment and theory work together to continue to expand the frontiers of knowledge of the physical universe.
- Apply basic mathematical tools commonly used in physics, including elementary probability theory, differential and integral calculus, vector calculus, ordinary differential equations, partial differential equations, and linear algebra.
- To solve Lagrange's equation, Properties and simple application of Lagrange's equation (simple pendulum, harmonic oscillator, compound pendulum, atwoods machine).
- To solve Hamiltonian, Hamilton's canonical equation of motion, and to understand Physical significance Advantages and Applications of Hamilton's equations of motion (simple pendulum, compound pendulum, Linear harmonic oscillator).
- To understand Central force, Reduction of two body problem into equivalent one body problem, Motion in inverse square law force field and to state Kepler's laws.
- To apply Rotating coordinates system and to derive the Corioli's force from Lagrangian formulation.
- To develop a knowledge and understanding of the concept that quantum states live in a vector space.
- To solve quantum mechanics problems.
- Formulation of Schrödinger equation-time dependent and time independent forms.
- To derive energy Eigen value and eigen functions particle in a box and 1-D harmonic oscillator.
- To formulate the Schrödinger wave equation in terms of spherical polar coordinates for its application to solve Hydrogen atom problem.
- To understand Postulate of quantum mechanics, operators and use of commutation and commutative algebra of operators to solve quantum mechanics problem.
- State and explain the key properties of vector atom model and the importance of the Pauli Exclusion Principle.
- To explain the observed dependence of atomic spectral lines on externally applied electric and magnetic fields.
- To state and justify the selection rules for various optical spectroscopies in terms of the symmetries of molecular vibrations.
- List different types of atomic and molecular spectra and related instrumentation.
- Describe theories explaining the structure of atoms and the origin of the observed spectra.
- Identify atomic effect such as space quantization and Zeeman Effect.

  By performing the experiments students are able to understand the theories of some concepts , applications and also obtain the values of some parameters like Ionisation potential of Xenon , Thevenin and Norton's theorem , Low pass filter, Characteristics of zener diode , Voltage regulator using Zener diode , CE amplifier Hybrid parameters etc.

PHY 5.2: Molecular Spectra, Lasers, Relativity and Electronics.

At the completion of the course students are able to,

- Understand the basic principle of laser and characteristics.
- Understand the theory of types of lasers.
- Perform the procedures into applications oriented one.
- Study the Einstein's Theory of Emission and Absorption.
- Understand the concept of Raman Effect and Rayleigh's scattering.
- Understand the negative result of michelson morley experiment , galilean and lorentz transformation

- Understand the principles of spectroscopy and special theory of relativity.
- Understand the Theory of relativity provides intellectual food for students interested in theoretical studies.
- To distinguish between P-N diode, Zener diode, LED and Photodiode.
- To understand half wave, full wave and bridge rectifiers and filters: capacitance filter, inductor filter and π filter.
- To demonstrate voltage regulation using Zener diode.
- To understand basic construction and operation of bipolar transistors (NPN and PNP)
- To distinguish between transistor circuit configurations (CB, CE, CC), current gains (α, and β) and their interrelationship.
- To solve problems of electronics using decimal and hexadecimal number system.
  By performing the experiments students are able to understand the theories of some concepts , applications and also obtain the values of some parameters like Plank's constant using Photo cell , High pass filer , Full wave bridge rectifier , Hartely Oscillatof , FET amplifier and LDR etc.

SEMESTER-VI:

PHY 6.1: Solid State Physics, Nuclear Physics and Nanoscience.

Upon completion of the course, students can,

- understand basic concepts and mathematical methods of solid state physics.
- able to practice problem solving by using selected problems in solid state physics
- explore important connections between theory, experiment, and current applications.
- develop a basis for future learning and work experience.
- acquire knowledge in the content areas of nuclear and particle physics, focusing on concepts that are commonly used in this area.
- develop and communicate analytical skills in subatomic physics.
- develop familiarity with the vast areas of nuclear and particle physics as well as develop an interest in these subjects.
- evaluate current constraints, such as regulatory, ethical, political, social and economical, encountered when solving problems in living systems.
- discuss and evaluate state-of-the-art characterization methods for nonmaterial's, and determine nonmaterial safety and handling methods required during characterization.
- understand basic of Nanoscience and nanotechnology.
- understand synthesis and characterization of nanostructures materials.
- understand quantum dots and electron transport.
- understand the applications of Nanoscience and nanotechnology.
  By performing the experiments students are able to understand the theories of some concepts, applications and also obtain the values of some parameters like Hall Effect , Resistivity of a semiconductor by Four Probe Method , X-ray diffraction pattern, Electrical and Thermal conductivity , Characteristics of GM counter and also study the DTL gates.

PHY 6.2: Astrophysics, Computational Physics, Electronics and Communication.

Upon completion of the course, students can,

- able to comprehend, apply, and analyze the most important scientific models governing modern astrophysics and be familiar with the astronomical objects studied by astronomers
- able to comprehend, apply, and analyze the practices and methodologies used by modern astronomers in constructing astrophysical models.
- have a broader understanding and appreciation of the intellectual and cultural benefits gained through astronomy as a science.
- able to design and conduct experiments as well as to analyze and interpret data
- able to design and conduct experiments as well as to analyze and interpret data
- able to function in team and multidisciplinary setting
- able to understand professional and ethical responsibility.

- able to communicate effectively
- give knowledge of some basic electronic components and circuits
  study logic gates and their usage in digital circuits.
- introduce basic aspect of electronic communication systems.
- have foundational knowledge of the Nanoscience and related fields.
- learn about the background on Nanoscience
- understand the synthesis of nanomaterials and their application and the impact of nanomaterials on environment
- apply their learned knowledge to develop Nanomaterial's.
  By performing the experiments students are able to understand the theories of some concepts, applications and also obtain the values of some parameters like Energy gap (Thermistor) , Attenuation of β- radiation , Phase shift Oscillator using OP Amp , Astable multivibrator (using 555timer) etc.

Department of Computer Science

B.Sc Computer Science

PROGRAMME OUTCOMES

PO1 Knowledge and understanding of: Mathematics, science, programming fundamentals, and finding solution for complex prgramming problems.

PO2 Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3 Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4 Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5 Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6 Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO7 Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO8 Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO9 Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO10 Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

COURSE OUTCOME:

CO1 Students will be able to analyze, design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.

CO2 Students can identify problems and formulate solutions for systems and organizations while reconciling conflicting objectives and finding compromises.

CO3 Students can communicate effectively with a range of audiences.

CO4 Students will be able to work effectively as part of a team to develop and deliver quality software artifacts.

CO5 Students can design solutions using approaches that integrate ethical, social, legal, and economic responsibilities.

CO6 Students can recognize the applicability of computing and evaluate its impact on individuals, organizations, and global society.

CO7 Students can evaluate and use appropriate methods and professional standards in computing practice.

CO8 Students can explore historical, current, and emerging techniques and technologies, founded on a commitment to lifelong learning and professional development.

CO9 Students can apply knowledge of computing and mathematics within 4 technical domains.

CO10 Students can apply computing theory and programming principles to practical software design and development.

PROGRAMME SPECIFIC OUTCOMES:

SEMESTER-I: Introduction to Computer Science

On completion of the course, students are able to

- Understand the input and output devices.
- Study the basic ideas of storage devices.
- Understand different types of Computer Networks.
- Understand the concept of Operating System.
- Understand the functions of various hardware components and their building blocks.
- Understand and appreciate Boolean algebraic expressions.
- Understand the concept of Logic circuits.
- Understand the different stages of an instruction execution.
- Understand how different hardware components are related and work in coordination.
- An ability to understand computer buses and input/output peripherals

SEMESTER-II: Programming in C

On completion of the course, students are able to

- Understand how to analyze a given problem and develop an algorithm to solve the problem.
- Improve upon a solution to a problem.
- Use the 'C' language constructs in the right way.
- Design, develop and test programs written in 'C'.
- Use different data types in a computer program.
- Design programs involving decision structures, loops and functions.
- Understand the dynamics of memory by the use of pointers and Structures.

SEMESTER-III: Data Structures using C

On completion of the course, students are able to

- To access how the choices of data structure & algorithm methods impact the performance of program.

- To solve problems based upon different data structure & also write programs.
- Choose an appropriate data structure for a particular problem.
- Be capable to identity the appropriate data structure for given problem.
- Have practical knowledge on the application of data structures.
- Apply tree traverse technique to various applications.

SEMESTER-IV: Object Oriented Programming using C++

On completion of the course, students are able to

- Be able to understand the difference between object oriented programming and procedural oriented language.
- Understand fundamental constructs of OOP.
- Apply object oriented programming concepts in problem solving through C++.
- Gain the basic knowledge on Object Oriented concepts.
- Ability to develop applications using Object Oriented Programming Concepts.
- To understand the role of inheritance, polymorphism, dynamic binding.
- Understand the file handling and error handling mechanisms in C++

SEMESTER-V:

Paper-I: Mathematical Foundation for Computer Science

On completion of the course, students are able to

- Basic idea of Permutations and Combinations, and Probability Concepts.
- Evaluate the probabilities and conditional probabilities.
- Calculate the number of samples needed to construct confidence levels on the mean and variance of a normal distribution.
- Understand the concept of Set Theory.
- Understand the concept of relations and functions.

Paper-II: Visual Programming

On completion of the course, students are able to

- Design, create, build, and debug Visual Basic applications.
- Explore Visual Basic‘s Integrated Development Environment (IDE).
- Implement syntax rules in Visual Basic programs.
- Explain variables and data types used in program development.
- Apply arithmetic operations for displaying numeric output.
- Write and apply decision structures for determining different operations.
- Write and apply loop structures to perform repetitive tasks.
- Write and apply procedures, sub-procedures, and functions to create manageable code.

SEMESTER-VI:

Paper-I: Java and Internet Programming

On completion of the course, students are able to

- Understanding of the principles and practice of object oriented analysis and design in the construction of robust, maintainable programs which satisfy their requirements.
- Ability to implement, compile, test and run Java programs comprising more than one class, to address a particular software problem.
- Demonstrate the principles of object oriented programming.
- Demonstrate the ability to use simple data structures like arrays in a Java program.
- Understand the concept of package, interface, multithreading and File handling in java.
- Ability to make use of members of classes found in the Java API.

Paper-II: Database Management System

On completion of the course, students are

- Able to master the basic concepts and understand the applications of database systems.
- Able to construct an Entity-Relationship (E-R) model from specifications and to transform to relational model.
- Able to construct unary/binary/set/aggregate queries in Relational Algebra.
- Able to understand and apply database normalization principles.
- Able to construct SQL queries to perform CRUD operations on database. (Create, Retrieve, Update, Delete).
- Able to understand principles of database transaction management, database recovery, security.
- Able to analyze Data Base design methodology.
- Able to acquire knowledge in fundamentals of Data Base Management System.
- Able to analyze the difference between traditional file system and DBMS.
- Able to handle with different Data Base languages.
- Capable to draw various data models for Data Base and Write queries mathematically.

Department of Chemistry

Course Outcomes:

Upon completion of the B.Sc. chemistry Course Students will be able to,

CO1. Provide a strong basic foundation in Chemistry that emphasizes reasoning and Analytical problem solving with a molecular perspective.

CO2. Get exposure of breadth of experimental techniques, use of glassware and chemicals.

CO3. Facilitate the learner to make solutions of various molar/normal concentrations.

CO4. Understand the importance of Periodic table of Elements, its role in organizing chemical information.

CO5. Understand the interdisciplinary nature of Chemistry and to integrate knowledge of Mathematics, Physics and other disciplines to a wide variety of chemical problems.

CO6. Achieve the skills to succeed in graduate level, Professional level and the chemical industries like Food processing, Cement, Glass manufacture, Fertilizer, polymers, petrochemical, pharmaceutical, metallurgical, paint industries etc.

CO7. Acquire a foundation of Chemistry of sufficient breadth and the depth to enable them to understand critically interpret the primary chemical literature

CO8. Demonstrate proficiency in qualitative analysis, quantitative methods and critical thinking.

CO9. Deduce simple structure and synthesize simple organic molecules using the studied reactions.

CO10. Understand the bonding models, structures, reactivity's of various organic and inorganic molecules.

Program Specific Outcomes (PSO's) of B.Sc. Chemistry

B.Sc. I Sem: Inorganic, Organic and Physical Chemistry

Upon Completion of this course students will be able to,

1. Describe the structure of atom, state the location, relative charge of the atom, define the atomic number and write the electronic configuration of the atom.
2. Describe the Periodic table as a list of elements arranged so as to demonstrate trends in their physical and chemical properties.
3. Predict and calculate the oxidation numbers and balance chemical reactions.

4. Determine the concentration of solutions using different volumetric analytical methods.
5. Differentiate acids and bases and also predict the acidity and basicity of compounds.
6. Know and recall the fundamental principles of Organic Chemistry that include chemical bonding, isomerism, chemical reactions and mechanism.
7. Describe the physical and chemical characters of solids, liquids and gases.
8. Apply the distribution law for separation techniques.

B.Sc. II Sem: Inorganic, Organic and Physical Chemistry

Upon Completion of this course students will be able to,

1. Explain the formation of Ionic and Covalent bonds. Name molecular and ionic compounds and compare and contrast their physical and chemical properties.
2. Differentiate saturated and unsaturated hydrocarbons, sketch conformations of alkanes & Cyclo alkanes, and predict stabilities of compounds.
3. Describe aromatic and anti-aromatic compounds, reactivity of aromatic compounds and predict stability
4. Predict the order and rate of reaction using different methods of determination. Also compute the reaction rates and predict the mechanism of reactions.
5. Identify components in solution, Can calculate the four colligative properties of solutions.
6. Learn Magnetic Dielectric properties and apply them in engineering applications.

B.Sc. III Sem: Inorganic, Organic and Physical Chemistry

Upon Completion of this course students will be able to,

1. Differentiae the Metals and non-metals and their physical and chemical properties and applications.
2. Analyse the present situation and development trends of metallurgy as profession. Can tell the reducing ability of metals using Ellingham diagrams and also able to understand Defects in crystals.
3. Understand the crystal structure of the solids, predict the number of particles in unit cells.
4. Assign the configurations for the molecules, can arrange the molecules in different Projections.
5. Discuss halogen compounds and their properties.
6. Recognize the alcohol, phenol and ether functional groups and able describe their properties.
7. Apply the laws of thermodynamics to various gas processes and cycles, explain the basic concepts of thermodynamics.
8. Explain the terms pH; K_a, pK_a, pK_b; K_w etc. and apply them in calculations including relationship Kw=KaKb
9. Explain the concept of photochemistry and study Beer-Lamberts law and also able to describe and explain photo physical process.

B.Sc. IV Sem: Inorganic, Organic and Physical Chemistry

Upon Completion of this course students will be able to,

1. Understand the Basics of Nuclear Chemistry and its applications in various fields.
2. Compare and contrast between Inorganic and Organic Polymers.
3. Understand causes and effects of various Environmental pollution and preventions measures of pollutions.
4. Discuss the properties of and synthetic methods of carbonyl compounds, Carboxylic acids, amines and organometallic compounds and their applications.
5. Understand different adsorption isotherms and Calculate Michalis constant for enzyme substrate binding.
6. Apply Phase Equilibria for various component systems also calculate degrees of freedom.

B.Sc. V Sem: Inorganic, Organic and Physical Chemistry

Upon Completion of this course students will be able to,

1. Describe and differentiate between simple salts, double salts and complex compounds and calculate the Effective atomic number in different complexes.
2. Understand the fundamentals principles of Organotranistion metal Chemistry and basics of

18 electron rules.
3. Discuss different structural patterns of metal clusters.
4. Understand the technique's involved in Gravimetric analysis.
5. Describe the Preparation, properties and applications of Alloys, Glass, Cement and Nano materials.
6. Discuss the classification, aromaticity, synthesis and applications ofheterocyclic Compounds and alkaloids.
7. Understand the basics of Pericyclic reactions and its types.
8. Describe and apply various Spectral (UV, IR, Molecular) in the structuralanalysis of compounds.
9. Differentiate between strong and weak electrolytes and able to calculate the transport Number.
10. Understand the various theories of reaction rates.

B.Sc. VISem:Inorganic, Organic and Physical Chemistry

Upon Completion of this course students will be able to,

1. Apply the VBT to different coordination complexes, explain the methods of determinations of magnetic properties, importance of chelates.
2. Understand the role of Haemoglobin, myoglobin and chlorophyll in biological systems.
3. Understand the use of various analytical techniques in determining/separation of compounds/mixtures.
4. Explain the structure, synthesis and importance of different bio organic compounds (Carbohydrates, Amino acid, Proteins and Vitamins).
5. Interpret the basic principles of NMR Spectroscopy and its application in structural interpretation of organic compounds.
6. Know the therapeutic uses of drugs and their synthetic methods.
7. Calculate the electrode potential and cell potential of electrode and electrochemical cell and know the importance of electrochemical cells and batteries in present era.
8. Contrast and compare macro molecules and micro molecules and able to determine the molecular weights of polymer molecules.
9. Describe the particle and wave nature of electrons and understand different theories of atom and their energy.

DEPARTMENT OF ZOOLOGY (B Sc)

Programme Outcome:

1. PO1 - Students gain knowledge and skill in the fundamentals of animal sciences, understands the complex interactions among various living organisms.
2. PO2 – Analyse complex interactions among the various animals of different phyla, their distribution and their relationship with the environment.
3. PO3 – Apply the knowledge of internal structure of cell, its functions in control of various metabolic functions of organisms.
4. PO4 – Understands the complex evolutionary processes and behaviour of animals.
5. PO5 – Correlates the physiological processes of animals and relationship of organ systems.
6. PO6 – Understanding of environmental conservation processes and its importance, pollution control and biodiversity and protection of endangered species.
7. PO7 – Gain knowledge of Agro based Small Scale industries like sericulture, fish farming, butterfly farming and vermicompost preparation.
8. PO8 – Understands about various concepts of genetics and its importance in human health.
9. PO9 - Apply ethical principles and commit to professional ethics and responsibilities in delivering his duties

10. PO10 – Apply the knowledge and understanding of Zoology to one's own life and work.
11. PO11 – Develops empathy and love towards the animals.

Course Outcomes:

1. PSO1. Understand the nature and basic concepts of cell biology, genetics, taxonomy, physiology, ecology and applied Zoology
2. PSO2. Analyse the relationships among animals, plants and microbes
3. PSO3. Perform procedures as per laboratory standards in the areas of Taxonomy, Physiology, Ecology, Cell biology, Genetics, Applied Zoology, Clinical science, tools and techniques of Zoology, Toxicology, Entomology, Nematology Sericulture, Biochemistry, Fish biology, Animal biotechnology, Immunology and research methodology.
4. PSO4. Understand the applications of biological sciences in Apiculture, Aquaculture, Agriculture and Medicine
5. PSO5. Gains knowledge about research methodologies, effective communication and skills of problem solving methods
6. PSO6. Contributes the knowledge for Nation building.

Programme specific Outcomes:

Semester I

Paper 1.1: Non - chordate

1. Student are able to understand the fundamental principles of systematic in which the animals are how to classify according to their characters and what are the theories which have to followed for classification is studied. International rules of nomenclature and classification is studied.
2. Different groups of invertebrate animals are studied in this course including Protozoa, Porifera, coelenterate, Plathyhelminthes, Aschelminthes, Annelida, Arthropoda, Mollusca and Echinodermata. General characters and classification upto order are studied. Some special features, organs, pathogenecity, life history and significance are studied here.

Practical 1.1

1. Study of museum specimens:- Identified and classified the specimens which are present the departmental museum by the students for a practical knowledge of them.

Semester II

Paper 2.1: Chordata

1. Different groups of Chordate/vertebrate animals are studied in this course including Protochordates, cyclostomata, Pisces, Amphibia, Reptilia, Aves & Mammalia General characters and classification upto order are studied. Some special features, organs, Osteology & comparative anatomy.

Practical 2.1

1. Study of museum specimens:- Identified and classified the specimens which are present the departmental museum by the students for a practical knowledge of them.
2. Osteology & comparative anatomy of different animal groups are studied practically with specimans.

Semester III

Paper 3.1: Histology, Evolution, Palaeontology & Biostatistics

1. In this part we teach about differentiation and organization of cells and maintenance of tissues. It helps to get a better idea about their structure and function.

2. Study of different dye and stains help the student to get a practical knowledge of handling the tissues for microtomy studies. It helps them for laboratory preparations and expertise in laboratory techniques.
3. Statistics used in biology. What are the parameters, what are the methods of determination, and how it analyzed are to be taught here.
4. To understand Origin of life with respect to prokyariotic and eukaryotic cells.
5. Understand the evidences of organic evolution by anatomical embryological list, paleontological, physiological, genetics and molecular biology evidences.
6. Understand theories of organic evolution, isolation, speciation.
7. Understand geological time scale, methods and classification of animal distribution and factors affecting animal distribution.
8. To know the types of Fossils and to understand the process of fossilization.
9. To understand the events occurred in the life history of earth through geological time scale.
10. And specifically know about the Mesozoic reptiles and Indian Dinosaurs.

Practical 3.1

1. To identify the different types of tissue through permanent slide observation
2. To prepare permanent tissue slides through serial slides.
3. To observe and study the Mesozoic reptiles, evolution of man and Horse, vestigial organs, connecting links and living fossils through pictorial representation.

Semester IV

Paper 4.1: Molecular cell biology & developmental biology

1. From this segment of the syllabus student aware about the size, shapem structure and function of cells and different cell organelles. This will help the students for a better understanding of cell and its cycle.
2. Understand the Scope of cell biology, because cell is the basic unit of life.
3. Understand the Main distinguishing characters between plant cell and animal cell.
4. To study and understand the whole cell organelles with their structure and function.
5. Understand the cell cycle and know the importance of various cells in body of organisms.
6. Understand the various applications of cells by using cell biology like study of various types of tumour.
7. Understand the Animal cells and various cell organelles by using microphotographs.
8. Aware the students for Cancer and carcinogenic agents.
9. Understand the Tools and Techniques in Molecular Biology.
10. Understand the term ELISA technique and DNA finger printing.
11. To understand the process of fertilization and its types. The developmental aspects in different animals and cleavage types.

Practical 4.1

1. Students are able to learn about the types of stains and fixatives which are used to make and observe slides of tissues and microscopic biodiversity.
2. To prepare slides for mitosis, meiosis and Polytene chromosomes and dissection of organic chick egg for chick embryo mounting.

Semester V

Paper 5.1: Biochemistry & Physiology

1. To understand Digestion and absorption of proteins, Carbohydrates and lipids.
2. To understand Fat body: Structure, physiology, biochemistry, functions. Integration of carbohydrate, fat and acid metabolism
3. Muscle: structure, physiology and biochemistry and muscle contraction.
4. Excretion and water balance: Structure and function of malphigian tubules. Water balance and nitrogen excretion.

5. Understand the structure and function of carbohydrate, amino acids, proteins, and lipids.
6. Understand the concept Enzymes and also Vitamins and minerals.
7. Understand the Principle role of Vitamins in metabolism and Deficiency diseases.
8. Understand the reproductive system to Understand the Endocrine system and Mechanism of hormone action.

Practical 5.1

1. Understand the test of Identification of carbohydrates, like Solubility test, Molisch's test,
2. Iodine test, Benedict's test, Barfoed's test, Phosphoric acid test and Osazone test.
3. Study the Qualitative test for fats, normal and abnormal constituents of urine.
4. Understand the detection of amino acids.
5. Haemoglobin estimation, haematin crystals and clotting time from blood sample.

Semester V
Paper 5.2: Ethology & Applied Zoology

1. Here we understand the types of animal behaviour and social organization of animals, parental care, courtship behaviour, coloration & mimicry, nesting behaviour
2. Understands concepts of fisheries, fishing tools and site selection
3. CO2 Aqua culture systems, induced breeding techniques, post harvesting techniques
4. Gives knowledge of silk worm rearing CO2 Mulberry cultivation
5. CO3 Pests and diseases associated with silk worm and mulberry.
6. Various process involved in silk production.
7. To understand the commercial process involving in the vermiculture , apiculture, poultry and dairy.

Practical 5.2

1. To understand the different castes in social insects, courtship behaviour, parental care, coloration and mimicry and types of nests through pictorial representation.
2. To study the commercially important crustaceans, molluscans and fishes.

Semester VI
Paper 6.1: Ecology, Zoogeography & Wildlife biology

1. Distribution of fauna in different realms interaction Understand Animal behaviour and response of animals to different instincts CO3 Interaction of biota abiota
2. Various kinds of Animal adaptations imparts knowledge to the student regarding environment and conservation biology.
3. Gains knowledge in the areas of responses to Laws of limiting factor, Laws of minimum, Laws of tolerance and Tragedy of commons.
4. Types of ecosystem – freshwater, marine and terrestrial,
5. Population characteristics and dynamics – conceptual approach
6. Growth curves and pyramids; sigmoid curve, J curve and hyperbola; logistic equation and concepts relating to growth.
7. The students will be well equipped to become very competent in research or teaching fields after completion of this course
8. .Know the biotic and abiotic components of ecosystem. Food chain & food web in ecosystem.

9. Understand diversity among various groups of animal kingdom.
10. Understand Animal community & ecological adaptation in animals. Scope , importance and management of biodiversity.
11. To understand Scope , importance and management of biodiversity
12. Understand the Population and community ecology, wetland forest and their conservation.

13. To understands the Biosphere: Introduction, hydrosphere, Biology lithosphere, atmosphere.
14. To understand Pollution: Kinds of pollution and pollutants (Air,Water, Agricultural).
15. To understands Noise pollution: Characteristics of sound, source and effects of noise pollution.
16. To understand Pesticide pollution: Pesticides and their kinds,possible sources and pathways of pesticide Pollution. Impact of pesticides on living organisms.

Practical 6.1

1. To analyze the water for dissolved oxygen, carbon di oxide, hardness, chloride, alkalinity & pH.
2. To understand the pind ecosystem and know the distribution of animal life on earth and learn Baout the insitu & ex situ conservatory areas in India. And know about the threatened species of animals' catagorized according to RED DATA book.
3. To learn the ecological aadaptaions and morphological peculiarities of specific group of animals.

Semester VI

Paper 6.2: Genetics, Biotechnology & nanotechnology

1. Understanding of basic concepts of genetics, laws of inheritance and central dogma of biology CO6 Understanding of genetic basis of evolution, human karyotyping.
2. Understanding of in vitro culturing of organisms and production of transgenic animals.
3. Gains skills in medical, environmental biotechnology, biopesticides, Biotechnology of aquaculture and use of animals as bioreactors.
4. This insight allows students to take into consideration about ethical issues involved in production transgenic animals and BT products.
5. To understand the various instruments and techniques involved in Biotechnology
6. The understand the basics of Nano materials and the technology involved in it.

Practical 6.2

1. To learn and observe the specimans of mutant forms of Drosophila.
2. To karyotype the chromosomes to identify different genetic disorders.
3. To solve genetic problems.