

Languages

ENGLISH

After the completion of the course the students will be able to

PAPER I

Communicate effectively using simple English

Make real life conversation and speak confidently

Use different grammatical sentence structures

Improve accent and pronunciation

Develop ideas and power of imagination

Develop respect and appreciation for all cultures

PAPER II

Explore narrative techniques

Nurture value based ideas

Improve vocabulary knowledge

Get introduction to theatre through one act play genre

Indulge in day to day conversation

Get practice with listening activities

Hone creative talents

PAPER III

Employ reading strategies like drawing inferences, skimming, scanning etc.

Compare their culture with other cultures and broaden their perspectives

Cultivate appreciation for poetry

Get introduced to translation skills with respect to drama

Improve English writing skills and techniques like report writing, note making, summarizing etc

Learn creative and freewriting

Telugu

Programme Outcomes

- Creates awareness of society and respect for language and literature.
- Interest to knowledge and traditions.
- Inculcates moral values.
- Employability in the areas of teaching & Press

Course Outcomes

I semester

- Knowledge of mythologies and epics
- Writing skills
- Story writing techniques
- Knowledge of Telugu grammar

II Semester

- Illustrates greatness of devotion
- Know the customs, traditions and rituals of Telugu people.
- Provides introduction to genre of novels

III semester

- Depicts virtues like charity and truth and explores the teacher student relation
- Conveys message of National Integration
- Personality Development
- Prosody of Telugu language

Hindi

Programme Outcomes

- Developing the Consciousness of important of Hindi language.
- Developing the knowledge of Literature.
- Analyzing the relation between literature and the society.
- Developing the knowledge of our national and official language.
- Consciousness about issues of our society.
- Developing the cultural and environmental consciousness.

- Developing writing skills through essays writing.
- Art of analyzing the “ Sanskritik and Lalit Nibandh Kala”.

I Semester

- Understanding the concept of History of the Hindi Literature.
- Understanding the literature trends
- Developing the writing skills through the essays writing.
- Identifying the eminent Hindi writers of each periods,
- Understanding the vocabulary of our Official language.

II Semester

- Understanding the concept of Hindi prose.
- Developing the writing skill through literartrice and general essays.
- Developing the Hindi reading skills through short stories
- Developing the writing skills through grammar
- Developing the letter writing.
- Understanding the importance of translation.

III semester

- Understanding the concept of Hindi old and Modern poetry
- Understanding the literature trends of Bhakti kal
- Understanding the relation between society and literature and analuse the role played by Hindi literature in past and present.
- Understanding the role played by the poets of Bhakti kal in literature and society.
- Describe the progressive nature of sant kabir and his writings.
- Describe the philosophy of life as well as poems of Hindi writers Aluru Baragi,Rajani Tilak,Jaishankar prsad, Mahadevi Verma etc.

Foundation Courses-Semester I

HUMAN VALUES AND PROFESSIONAL ETHICS

By the end of the course during the first semester with 2 hours a week and 2 credits the students will be able to

CO1 Acquire social value orientation

CO2 Focus on character development

CO3 Develop reasoning ability and make their own decisions

CO4 Get deeper understanding of society

CO5 Display positive human behavior and actions in daily life

ENVIRONMENTAL STUDIES

CO1 Get a broad understanding of environment and human impact on environment

CO2 Understand and learn the concepts of eco system, biodiversity and conservation, food chains, food webs and ecological pyramids

CO3 Use ICT tools to find the causes of environment pollution, the consequences and possible solutions

CO4 Get introduction to environmental ACT and various laws related to protection of environment

CO4 Get a overview of issues like global warming, ozone layer depletion and greenhouse effect.

LEADERSHIP EDUCATION

CO1 Understand key components of organizational management and leadership

CO2 Fundamental concepts of organizational behavior and individual differences

CO3 know the importance of interpersonal relationship within an organization

CO4 Understand the techniques of transactional behavior in interpersonal relationship

CO5 Know the characteristics, stages and types of group dynamics and its key elements

CO6 Know and improve team building and management skills.

Foundation course

CSS I

CO1 Understand and use familiar words and basic phrases

CO2 Improve active listening comprehension skills

CO3 Practice listening for local as well as global comprehension

CO4 Improve English sentence formations with a focus on tenses, articles, prepositions etc

CO5 Employ reading strategies like skimming, scanning, using schema etc

CO5 Improve reading comprehension skills

CSS II

CO1 Foster speaking skills

CO2 Acquire and use information transfer skills

CO3 Learn letter sound relationship and to decode letters into their respective sounds

CO4 Map sounds into spellings

CO5 Know the importance of accent and intonation in communication

CO6 Practice and improve good pronunciation in English

CSS III

CO1 Acquire basic mechanics of writing

CO2 Practice higher order writing skills like summarizing, paraphrasing

CO3 Know and do personal SWOT analysis

CO4 Learn soft skills and know their importance in personal and professional life

CO5 Use soft skills in everyday life and at workplace

Information and Communication Technology – I

Course Outcomes

After the completion of the course the students will be able to

Semester II

- Understand the progress of information and communication technologies and their role in modern world
- Acknowledging the role of technologies in modern society and the potential of social web
- Students recognize the ethical, Social and moral issues and implications surrounding the use of technology
- Improve their technical knowledge.

Information and Communication Technology –II

Semester III

- ICT in education has both positive as well as negative impact on students and teachers, But it depends on how it is been used by them
- Know that technology makes education more easier and simpler for learning and teaching.
- Acquire the skills to use ICT to seek support and to enhance their studies
- Know Growing trends in ICT application in office

Entrepreneurship

Course Outcomes

- Understand the role of entrepreneurship in the successful commercial application of innovation
- Motivate personal attributes that enable best use of entrepreneurial opportunities
- To acquaint with the operational procedures of start-ups

Analytical Skills

Course Outcomes

- Recognize the importance of critical thinking in analysis
- Understand the concept of analysis
- Identify the different aspects of analysis
- Use the analytical process to arrive at a decision

BSC Course Outcomes

PHYSICS

PAPER I

- Mechanics and Properties of Matter
- Attain common level in basic mechanics
- Acquire engineering skills and practical knowledge
- Get knowledge on Sonar system acrobatics and space rackets

PAPER II

- Waves and Oscillations
- Get fundamental knowledge of waves and oscillations
- Acquire practical knowledge which can be applied to everyday life
- Get acquainted with the functioning of vibrating musical instruments.
- Understand applications of ultrasonics

PAPER III

- Wave Optics
- Attain a common level in basics of light
- Know well about optics, laser, fiber optics and application of lasers and fiber optics
- Learn interference diffraction and polarization and gets acquainted with many experiments associated with it.

PAPER IV

- Thermodynamics and Radiation Physics
- Know basics of Thermodynamics
- Study the process of production of low temperatures and refrigeration
- Get familiarized with electrical circuits, electrical connections, storage devices and their working
- Know about logic circuits and their applications which enables them to design circuits of their own

PAPER VI

Renewable Energy

- Identify, define and present issues related to renewable energy technologies

- Relate environmental degradation to various factors like energy production, air and water pollution, greenhouse effect, global warming, acid rain etc.
- Understand working principles of solar system like solar cooker, solar cell etc and energy resources in India
- Analyze conversion of biomass into fuels through fermentation, pyrolysis, gasification and combustion
- Acquire basics of ocean energy and its various forms, wave energy technologies and its advantages, electrolysis of water and uses of hydrogen as fuel

Mathematics

Course Outcomes

Paper – I Differential equations

Upon completion of the course student should be able

- Learn various techniques of getting exact solutions of creation solvable first order differential equations and linear differential equations of second order.
- To recognize ODES and system of ODES concepts that are encountered in the real world
- Know picards method obtaining and successive approximations of solutions of first order ordinary differential equations passing through a given point in the plane.
- To analyze real world scenarios to recognize when ordinary differential equations or system of ODES are appropriate, formulate problems about the scenarios, creativity model these scenarios(Using Technology, if appropriate) inorder to solve the problems using multiple approaches, judge if the results are reasonable, and then interpret and clearly communicate the results.

Paper II

Solid Geometry

Upon completion of the course students should be able

- To understand geometrical terminology for angles, triangles, quadrilaterals and circles.
- To use geometrical results to determine unknown angles.
- To recognize line and triangles, quadrilaterals and circles and shapes based on these.

Paper III

Abstract Algebra

Upon successful completion of abstract algebra students will be able to.

- To learn properties implied by the definitions of groups.
- Use various canonical types of groups(including cyclic groups and groups of permutations)
- Analyze and demonstrate examples of subgroups, normal subgroups and quotient groups.
- Use the concepts of isomorphism and homomorphism.
- Produce rigorous proofs of propositions arising in the context of abstract algebra.

Paper IV

Real Analysis

Upon successful completion of real analysis students will be able to

- Describe the real line as a complete, ordered field.
- Understand basic properties of real number system such as least upper bound property and order property.
- Realize importance of bounded, convergent, Cauchy and monotonic sequences of real numbers, find their limit superior and limit inferior.
- Determine the continuity, differentiability and integrality of functions defined as subsets of the real line.
- Produce rigorous proofs of results that arise in the context of real analysis.

Paper V A

Ring theory and Vector calculus

Upon successful completion of Rings students will be able to

- Assess properties implied by the definitions of rings
- Use various canonical types of rings(including polynomial rings and modular rings)
- Analyze and demonstrate examples of ideals and quotient ring.
- Analyze vectors differentiation, integration and application.
- Produce rigorous proofs of results that arise in the context of vector integration applications.

Paper V B

Linear Algebra

Upon successful completion of Linear algebra, students will be able to

- Solve systems of linear equations
- Recognize the concepts of the terms span, linear independence, basis and dimension, and apply these concepts of various vector spaces and subspaces.
- Use matrix algebra and the related matrices to linear transformations.
- Compute and use Eigen vectors and Eigen values.
- Determine and use orthogonally

Paper VI

Numerical Analysis

Upon successful completion of numerical analysis a student will be able to

- Obtain numerical solutions of algebraic and transcendental equations
- Find numerical solutions of system of linear equations and check the accuracy of the solutions.
- Implement a variety of numerical algorithms using appropriate technology.
- Compare the viability of different approaches to the numerical solution of nonlinear equations, Interpolation and approximation, numerical differentiation and integration, solution of linear

Chemistry

Inorganic & Organic Chemistry

Semester I

- Able to recall the properties, applications and the chemical reactivity of P-block elements
- Able to the bonding models, structures, reactivity and applications of Boron hydrides and organ metallics.
- The students familiar about the inorganic halogen compounds.
- Gain knowledge about basics of atomic structure, preparation and properties of acyclic and alicyclic hydrocarbons.
- Improve their theoretical knowledge about chemical reactions.

Salt Analysis Practical

- Will be able to prepare Lab reagents independently.
- Will be able to identify Anions and cations in the given salt by qualitative analysis.

- How to engage in safe laboratory practices by handling laboratory glassware equipment and chemical reagents approximately.

Physical and General Chemistry

Semester II

- Can able to predict the more stable conformer and its stereo chemistry.
- Gain knowledge about characteristics of gaseous and liquid states
- They get will exposure about solids
- Able to apply the concepts of Colloids & gels
- Able to learn depth knowledge fundamentals for both ionic and covalent compounds including electro negatives bond distances and band energies with M.O diagrams

Mixture Analysis -II

- Will be able to identify anions and cations in the given salt mixture by qualitative analysis

Inorganic & Organic Chemistry

Semester III

- Able to synthesis hydroxy compounds, carbonyl compound and carboxylic acids and other organic compounds
- Able to the bonding models, structures, reacting and applications of metal carbonyls
- Able describe bonding models that can be applied to a consideration of the properties of transition metal compounds.
- The student familiar about transition elements
- Able to the prediction of mechanism for organic reactions
- Students are expected to apply their knowledge to problem solve, deduce structure and synthesize simple organic molecules using the statical reactions

Titrimetric Analysis and Organic functional Group reactions

- Acquire practical skills in quantitative estimation by Dichromacy, Idiocy and complexometric
- Able to the distinction between qualitative and quantitative chemical analysis
- Will be able to identify functional group by organic functional group reactions

Spectroscopy and Physical Chemistry

- Will be able to calculate molecular weight by applying the principles of colligative properties.

- Can be able to identify the no of components by applying phase rule and able to describe interaction between colloidal particles.
- Can be able to elucidate the structure of organic compound by using spectral technique.
- Able to determine the structure of organic molecules using IR & NMR
- Able to apply Nrenst equation to different electrochemical systems
- Able recognize different types of electro chemical cells.

Physical chemistry & IR Spectral analysis

- Able determine the structure of organic molecules using IR spectroscopy
- Able to an understanding of methods for problem solving in physical chemistry.
- Able to explain the principles of selected instructs methods with in electro analytical and spectrophotometric method and main components in such analytical instrumenting

Inorganic, Organic & Physical Chemistry V A

- Able to bonding models, structures of coordination compounds & predict the magnetic & Spectral properties of coordination compounds
- Able to synthesize the nitro and other organic compounds
- Able to the application of mathematical tool to calculate thermodynamic & Kinetic properties
- Able to state and apply the laws of thermodynamic perform calculation with ideal and real gases. Design practical engine by using thermodynamic cycles. To predict chemical equilibrium and spontaneity of reactions by using thermodynamics principles.

Organic Chemistry Practical

- Will be able to identify functional group by organic functional group reactions

Inorganic, Organic and Physical Chemistry

Semester VI B

- Able to apply knowledge in biochemical reactions
- Able to the reactivity, synthesis of Amino acids
- Able to predict the outcome and mechanism of some simple organic reactions using a basic of the relative reactions of functional group
- Improve their knowledge about by light
- Able to the application of mathematical tool to calculate thermodynamic & Kinetic properties

Physical Chemistry Practical

- Able to a foundation in the fundamentals of fluid mechanics.
- Able to design simple pipe systems to deliver fluids under specified conditions

Analytical Methods in Chemistry

- Able to explain the theoretical principles and important application of classical analytical methods within titration and various techniques within gravitational and coulometric method
- Able to the theoretical principles of various separation techniques in chromatography applications of chromatographic techniques
- Able to assess and suggest a suitable analytical method for a specific purpose and evaluate sensitivity important source of interference and eons and also suggest alternate analytical method for qualitative assurance

Practical VI A

- Able to acquire practical skills in qualitative estimation by dichrometry, Idometry and complements
- Method for calibration and sampling applied to qualitative analysis

Organic spectroscopic techniques

Semester VI C1

- Can differentiate conjugated from unconjugated presence of unsaturation & aromatic nature by U.V Visible spectroscopy
- Able to elucidate the structure of organic compound by using spectral techniques

VI C1 Practical

- Able to calculate a limiting reagent, yield and percentage of yield
- How to synthesis of a organic compound

Advances of Organic reactions VI C2

- How to use their understanding of organic mechanism to predict the outcome of reactions
- Improve their knowledge about chemical reactions which are carried out by light
- How to synthesis of a molecule
- Students are expected to apply their knowledge to problem solve, deduce structure and synthesis of organic compounds

VI C2 Practical

- Able to application of statistical method for evaluation of laboratory data

- Able to explain the principles of selected instruments methods within electromagnetic method and spectroscopic method
- Able to develop skills in procedures and instrumental methods applied in analytical practical tasks of physical chemistry.
- Method for calibration and sampling applied to instrumental analysis

Pharmaceutical & Medicinal Chemistry

VI C3

- This subject helps in correlating the pharmacology of a disease and its mitigation or cure. This also act as a stepping stone for use of sophisticated analytical and computational tools by these students.
- Prepare students for professional participation in chemical industries so as to adopt themselves to jobs which are problem solving
- Able to understanding of the basic biological and pharmacological interactions by using both natural products and total synthesis of bioactive molecules

Project work

- Able to apply hands on experience of the research principles and methods in chemistry
- Apply the concepts and theories of a range of advanced topics in chemistry to research in a particular area.

Department of Computer Science

Course Outcomes

After completion of the course the students will be able to

I Semester

Computer Fundamentals and Photoshop

- Understand the concept of input and output devices of computers(and how it works, understanding binary, hexadecimal and octal number systems)
- The student is able to explore the basic knowledge of computer hardware and software.
- Use basic selection tools and edge refinement to isolate and edit part of an image.
- The student is able to design and edit banners and visiting cards etc.

II Semester

Programming In “C”

- Understand a functional hierarchical code organization
- Ability to define and manage data structures based on problem subject domain.

- Understand a defensive programming concept ability & to handle possible errors during program
- Analyze a given problem and develop an algorithm to solve the problem.
- Design, develop and test programs written in “C”

III Semester

Object oriented programming using Java

- Develop problem solving and programming skills using OOP concept
- Use an integrated development environment to write, compile, run and test simple object oriented java programs.
- Become familiar with the fundamentals and acquire programming skills in the java language

IV Semester

Data Structures

- Students know how arrays, records, linked lists, stacks, queues, trees and graphs are represented in memory and its applications.
- Describe common applications for arrays records , linked lists, stacks, queues, tree and graphs.
- Write programs that use arrays, records, linked lists, stacks, queues, tree and graphs.
- Compare and contrast the benefits of dynamic and static data structures implementations.

V Semester

Data Base Management system

- Student knows database structure and its design
- Describe the functional elements of relational database management systems.
- Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQW
- Design ER-model to represent simple data base application scenarios and convert the ER models to relational tablets and formulate SQW queries on data.

Software Engineering

- Ability to gather and specify requirements of the software projects
- Identify, formulate, and solve complex engineering problems by applying principles of engineering, Science and mathematics.
- Ability to work in a team as well as dependently on software projects.

V Semester

Web Technologies

- To design interactive webpages using HTML and style sheets.
- To design programming web pages with JavaScript and DOM
- To practice latest web technologies and tools by conducting experiments.

BOTANY

PAPER I

Microbial Diversity, Algae & Fungi

CO1 Prepare slides, identify the material and draw diagrams exactly as it appears

CO2 Observe and identify microbes and lower groups of plants on their own

CO3 Demonstrate the techniques of inoculation and preparation of media etc

CO4 Identify the material in the slides

CO5 Analyze and ascertain the plant diseases due to viruses, bacteria & fungi and their symptoms

PAPER II

Diversity of Archegoniate & Plant Anatomy

CO1 Demonstrate the techniques of section cutting, identifying the material and drawing the exact figures

CO2 Compare and contrast the morphological, anatomical and reproductive features of vascular plants

CO3 Evaluate the ecological and economic value of microbes, thallophytes & Pteridophytes

CO4 Recall and explain the evolutionary trends among amphibians of plant kingdom for their shift to land habitat

CO5 Classify and compare pteridophytes gymnosperms based on their morphology, anatomy, reproduction and life cycles.

PAPER III

Plant Taxonomy & Embryology

- CO1 Critically understand various taxonomical aids for identifying angiosperms
- CO2 Identify the local angiosperms of the families prescribed to their genera and species and prepare herbarium
- CO3 Exhibit skills of preparing slides, identify and draw figures of plant twigs and flowers
- CO4 Prepare and preserve specimens of local wild plants using herbarium techniques
- CO5 Illustrate and interpret various aspects of embryology

PAPER IV

Plant Physiology and Metabolism

- CO1 Comprehend the importance of water in plant life and mechanics for transport of water
- CO2 Evaluate the role of minerals in plant nutrients and their deficiency
- CO3 Interpret the role of enzymes in plant metabolism
- CO4 Conduct lab and field experiments pertaining to plant physiology
- CO5 Estimate the quantitative and qualitative expressions using experimental results and calculations
- CO6 Demonstrate the factors responsible for growth and development in plants

PAPER V

Cell Biology, Genetics & Plant Breeding

- CO1 Distinguish prokaryotic & Eukaryotic cells and design the model of a cell
- CO2 Demonstrate mitosis & Meiosis in the laboratory and identify different stages of division
- CO3 Identify and explain the cellular parts of a cell from picture and prepare models
- CO4 Solve the problems related to crosses and gene interaction
- CO5 Demonstrating plant breeding techniques such as emasculation

PAPER VI

Plant Ecology & Phytogeography

CO1 Know principles and practices of propagation and nursery management for horticultural crops

CO2 Know nursery establishment and nursery rules and regulations

CO3 Study scope and importance of horticulture, classification of plants

CO4 Know seed production technology of horticultural crops

CO5 Learn the techniques, types, methods and tools of gardening

Zoology

PAPER I

Animal Diversity-Nonchordates

Study different groups of invertebrate animals including protozoa, porifera, coelenterate, platyhelminthes, annelida, arthropoda, mollusca and echinodermata

Know general characters and classification of animals

Study different systems of invertebrate animals such as leech, cockroach, prawn Etc

Understand different structures and muscular regions of animals

PAPER II

Animal Diversity-Chordates

Deep knowledge of the diversity in form, structure and habits of vertebrates

Learn general character and classification of different classes of vertebrates

Understand the vertebrate evolutionary tree

Obtain an overview of economically important vertebrates

Classify all the vertebrate phyla up to class

PAPER III

Cytology Genetics and Evolution

Attain knowledge about the fundamental structure, bio chemistry and function of the cell.

Understand ultra structure of prokaryotic and eukaryotic cells

Study the mechanism and complications of cell division

Study the underlying genetics mechanism operating in man and state

Understand the principles and techniques involved in DNA technology

PAPER IV

Embryology, Physiology and Ecology

Study various stages of developing embryo

Study initial developmental procedures involved in frog

Form a perspective of health and biology through the study of human physiology

Study different systems and their inherent disorders and deficiencies

Knowledge regarding principles and management of environmental science

PAPER V

Observe chromosomal arrangements during cell division

Study chromosomal observation in man

Gain broad knowledge of conventional biotechnology procedure

Perform routine analysis

Learn mechanism of enzyme action and other related information

PAPER VI

Immunology

Understand the principles of mechanism of immunology

Learn malfunctioning and disorder of immune system

Gain a broad understanding of microbes and their economic importance

Understand the scope and importance of clinical immunology and creating an awareness about the inherent dangers of microbes

Students will be able to identify the cellular and molecular basis of immune response