Course Outcomes

DEPARTMENT OF ENGLISH

General English (Semester 1, 2 & 3)

Course Outcomes:

- To develop comprehensive ability to prepare paragraphs, short notes objectivetypes of Questions & Answers.
- To imparts vocabulary and four component skills such as phonology, morphology, Semantics and syntax

Course Specific Outcome:

Semester:1

- Learners will be able to read and comprehend literary pieces.
- Enriches vocabulary and grammatical sense
- Ability to use appropriate Vocabulary according to situation
- Gains ability to write discourses on topics of interest or relevance

Semester:2

- Able to use different forms and formats of written correspondence
- Motivate the students to speak English meaningfully
- Facilitates to improve critical thinking

Semester:3

- Enhances higher order skills such as analytical skills, problem solving, reviewing and critical thinking
- Much emphasis on student learning activity specifically intra-class and inter- class student learning activity
- Aims to enrich the capabilities of reading writing and learning so as to pursue their personal, academic and career goals through the acquisition and improvement of language skills.

Communication Skills and Soft Skills (Sem2,3 & 4)

Course outcomes:

- To enable the stakeholders to enhance their four skills- listening, Speaking, Reading and Writing
- To promote the fifth Skill i.e *"Thinking*" in English
- To equip themselves with soft skills

Course Specific Outcome:

Semester:2

- Generates creative thinking competencies
- Inculcates technical & communication skills to encounter the challengers of the future
- Enhances one's active vocabulary for effective expression
- Enriches communication skills to face competitive Examinations.

Semester:3

- Enables undergraduate learners to cope with the academic taks to be carried out in English across the curriculum
- The course assists the learners to organise paragraphs and writing essays
- Develop outlines for essays before developing them into essays

Semester:4

- Aims to gain self learning in soft & drafting skills
- Imparts vital skills such as intra &inter-personal skills, Verbal & Non- Verbal skills
- Promotes employability skills

DEPARTMENT OF TELUGU

Course outcome of General Telugu (language)

- Create awareness on Telugu language and literature like kavyas, Natakas , vyakaranam etc.
- Develops reading ability to solve verbal and Non verbal communication of the students.
- To bring language skills among the students.
- Enlightens the students about human values and affects their attitudes.
- Develops research bent of mind.

Course specific out come

Semester :1

- Developing interest and respect towards ancient literature and creative writers.
- Students knows how poetry is useful in reforming the society
- Studies short stories which reflects draught condition in Rayalaseema.
- As well as learns about the formation of sentences.

Semester :2

- Students can develops personality and soft skills by studying this subject.
- Brings awareness on Epics, Dalith literature and origin of the Telugu language.
- Learns about the greatness and heritage of Telugu literature.

Semester : 3:

- Introduced specifically the genre of fiction. So student acquired knowledge of day today life and intricacies of human existence.
- After studying of Kavyas, Puranas, student get respect towards the great ancient and modern poets.

Semester : 4:

- It enhance and enrich language skills and Develops reasoning ability to solveverbal and non-verbal communications.
- Helped the stakeholders to adjust with the current trends in language and literature.
- Student can mold his own personality in a good manner after study of the subject.

DEPARTMENT OF MATHEMATICS

COURSE OUTCOMES

- By Learning mathematics programme in UG Course the students are able in finding the simplest way of numerical solutions of problems facing in physics, chemistry, computer science and other problems in their general life.

- All mathematics students learn required skills in mathematics for their higher studies.

- Students learn all kinds of trips and tricks to find he solutions easily in competitive exams.

Course specific outcomes

Differential equations (Paper-I)

Students will able to

- Extract the solution of differential equations of the first order and of the first degree by variables separable, Homogeneous and Non-Homogeneous methods.
- Find a solution of differential equations of the first order and of a degree higher than the first by using methods of solvable for p, x and y.
- Compute all the solutions of second and higher order linear differential equations with constant coefficients, linear equations with variable coefficients.
- Solve simultaneous linear equations with constant coefficients and total differential equations.
- Form partial differential equations.
- Find the solution of First order partial differential equations for some standard types.
- Use inverse Laplace transform to return familiar functions
- Apply Laplace transform to solve second order linear differential equation and simultaneous linear differential equations.

Solid Geometry -3D (Paper-II, Paper code-)

Students will able to

- Get awareness about the three dimensional geometry along with visualization
- Be able to apply 3-D geometry for the construction
- Describe the various forms of equation of a plane, line, Sphere, Cone and Cylinder.
- Find the angle between planes, Bisector planes, Perpendicular distance from a point to a plane, Image of a line on a plane, Intersection of two lines
- Define coplanar lines and illustrate
- Compute the angle between a line and a plane, length of perpendicular from a point to a line
- Define skew lines and calculate the Shortest distance between two skew lines

Abstract Algebra (Paper-III)

Students will able to

- Find whether given set with respect to given binary operation is a group/Abelian group
- Find subgroups-Normal subgroups
- Define subgroup, center, Normalizer of a subgroup.
- Find cycles and transpositions of a given permutations.
- Prove Lagrange's theorem ,Euler's theorem and Fermat's theorem
- Define cyclic groups.
- Prove a group has no proper subgroup if it is cyclic group of prime order.
- Define normal subgroups, quotient groups and index of a subgroup.
- Define homomorphism, kernel of a homomorphism, isomorphism.
- Prove Cayley's theorem , the fundamental theorem of homomorphism for groups
- Establish isomorphism between two algebraic structures (groups) if any

Real analysis (Paper-IV)

Students will be able to

- find limit of a function using $\in -\delta$ definition
- decide the continuity of a function on a domain
- decide the differentiability of a function on a domain
- decide the R-Inerrability of a function on an interval

Ring theory and Vector calculus (Paper-V)

Students will be able to

- apply the properties of rings, fields and integral domains on algebraic structures
- Find and interpret the gradient curl, divergence for a function at a given point
- Interpret line, surface and volume integrals
- Evaluate integrals by using Green's Theorem, Stokes theorem, Gauss's Theorem

Laplace Transforms and its applications (Paper-VI)

Students will able to

- Solve Ordinary differential equations with constant coefficients
- Solve Ordinary differential equations with variable coefficients
- Solve simultaneous differential equations.
- Solve Partial differential equations.
- Solve integral equations using Laplace and inverse Laplace transforms
- Evaluate integrals by using Beta and Gamma functions.

Linear Algebra -1(Paper –VII)

Students will be able to

- Define Vector Space, Quotient space Direct sum, linear span and linear independence, dependence and basis
- Apply the properties of vector spaces on algebraic structures
- Find rank and nullity of the given system of linear equations

Fourier series and Fourier Transforms (Paper-VIII -A1)

- Students will able to
- Find Fourier series expansions for given functions in various intervals.
- Find Fourier transforms of given functions and apply them to solve integral equations.

Numerical Analysis (Paper-VIII –A2)

Students will able to

- Find the solutions of algebraic and transcendental equations using numerical methods
- Evaluate an approximate value of derivatives and integrals using interpolation formulae.

Linear Algebra -II (Paper-VIII)

Students will able to

- Find the rank of a matrix using echelon and normal forms.

- Find the characteristic equation, eigen values and eigen vectors of a matrix
- Find Orthonormal basis using Gram-Schmidt orthogonalisation process
- Compute inverse of a matrix using Cayley – Hamilton Theorem

DEPARTMENT OF PHYSICS

COURSE OUTCOMES OF PHYSICS

Students graduating with a B.Sc. in Physics should be able to:

- Students will demonstrate proficiency in mathematics and the mathematical concepts needed for a proper understanding of physics.
- Students will demonstrate knowledge of mechanics, waves, optics, electromagnetism, modern physics, quantum mechanics, and thermal physics, basic electronics and be able to apply this knowledge to analyze a variety of physical phenomena.
- Students will show that they have learned laboratory skills, enabling them to take measurements in a physics laboratory and analyze the measurements to draw valid conclusions.
- Students will be capable of oral and written scientific communication, present seminars, involve active participation in group discussion and will prove that they can think critically and work independently.

Specific outcomes of Physics

Paper I

- To enable the students to understand Newtonian Mechanics and to apply Newton<s laws to explain natural occurring phenomena.
- To enable the students to see relation between linear and rotational motion.
- To acquire basic essentialities of special theory of Relativity and understand how laws and principles of Physics changes when objects moves with high velocities.
- To enable the students to acquire knowledge about different apparatus and how handle them.

Paper II

- To understand simple harmonic motion and causes for damped oscillations.
- To Understand Production and propagation of different waves in Elastic media.
- To acquire the Knowledge of Ultrasonics and their applications in different cases

Paper III

- To understand different aberrations in lenses and their elimination methods
- To understand the wave phenomena of light.
- To study basics of Lasers and fiber optics and their uses
- To get familiarity about travelling microscope and spectrometer and to use them in the experiments.

Paper IV

- To Understand Laws of Thermodynamics and their applications.
- To acquire the knowledge about different methods of attaining low temperatures and their uses in daily life.
- To study different laws of thermal radiations , their applications and limitations.

Paper V

- To understand the laws of electrostatics and their applications.
- To study principles of electromagnetism and their applications.
- To understand the basic relation between electric and magnetic fields.
- To acquire basic skills in connecting circuit elements in basics electric circuits

Paper VI

- To understand the essentials of quantum mechanics and principles of modern physics.
- To acquire knowledge about basic concepts of spectroscopy and its uses
- To acquire the knowledge about different experimental techniques in solid state physics.

Paper VII

- To explain relation between physical quantities in electricity and magnetism.
- To understand physics of semiconductors and their applications in electronic circuits.
- To acquire knowledge of logic gates and their uses simple circuits.
- To analyze logic gates and there uses in verifying basic laws in digital circuits.

Paper VIII

- To understand the physics of the nuclei and nuclear reactions.
- To study about different types of particle accelerators and detectors.
- To acquire knowledge of fundamental particles and their classification

DEPARTMENT OF CHEMISTRY

COURSE OUTCOMES

- Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories including those in Analytical, Inorganic, Organic and Physical Chemistry.
- Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.
- Students will be able to clearly communicate the results of scientific work in oral, written and electronic formats to both the scientists and public at large.
- Students will be able to explain why chemistry is an integral activity for addressing social, economic, and environmental.
- Students will be able to apply scientific concepts to face their life situations.
- Students are able to use modern instrumentation and classical techniques to design experiments and to properly record the results of their experiment.
- Knowing the proper procedures and regulations for safe handling and use of chemicals and can follow the proper procedures and regulations for safe handling of chemicals.
- safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine fields.
- Students are able to find more job opportunities in industries or in govt or in private sector.

Specific outcomes

Paper I- (Inorganic & Organic Chemistry

- Evaluates the periodic properties of elements
- Estimates the types of chemical bonding
- Explains industrial applications of organo metallic compounds.
- Describes the fundamental principles of organic chemistry that include nomenclature, chemical bonding, hybridization and geometry of molecules, stereo chemistry, chemical reactions and mechanisms.

Paper II - (Physical and General Chemistry)

- Applies physical laws related to gases, liquids, solids and solutions in daily life circumstances.
- Students will be able to skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.
- Explains industrial applications of colloids and adsorption phenomenon.

Paper III - (Inorganic & Organic Chemistry)

- Explains industrial applications of halogen compounds, alcohols, carbonyl compounds, carboxylic compounds and active methylene compounds.
- Describes characteristic properties of d and f block elements.
- Explains the structure of metal carbonyls.
- Explains theories of bonding in metals.

Paper IV - (Physical and General Chemistry)

- Interprets the spectral data of various organic compounds
- Explains concept of spectra in chemical characterization.
- Applies phase rule to various systems.
- Applies the concept of phase rule, colligative properties and electro chemistry in daily life/ industries.

Paper V - (Inorganic, Organic and physical Chemistry)

- ✓ Knows the importance of coordination chemistry in real life situations.
- ✓ Describes the structure and stereochemistry of transition metal complexes..
- ✓ Explains the bonding in metal complexes using VBT & CFT .
- ✓ Applies the concept of heterocyclic compounds in medical field.
- ✓ Applies concept of fluorescence, phosphorescence and chemiluminescence in daily life.
- ✓ Illustrates examples for fluorescence, phosphorescence and chemiluminescence in daily life.
- ✓ Applies the laws of chemical kinetics in biology, geology, engineering etc.

Paper VI (Chemistry and Industry- separation techniques, drugs and pesticides)

- Applies the concept of principles of chromatography in industries.
- Acquires the knowledge of therapeutic activity uses and side effects of drugs.
- Acquires the knowledge of types, functions and uses of pesticides.
- Students will gain an understanding of how health, disease and modern medicine are all rooted in biological chemistry.

Paper VII (Inorganic, Organic and physical Chemistry)

- Draws structures of different types of proteins.
- Predicts the feasibility of a reaction and knows the occurrence of minerals.
- Identifies carbohydrates by using various tests.
- Applies the laws of Thermodynamics in biology, geology, engineering etc.
- Explains the functions of essential elements in biological systems and toxic effects of non essential elements.

Paper VIII (Chemistry and Industry- spectroscopy, material science, Green chemistry)

- Explains the importance of 12 principles of green chemistry.

- Explains fundamental uniqueness of the chemical & physical properties of nanomaterials and other potential impact in science, engineering, medicine and the environment.
- Elucidates molecular structure and also determines organic and inorganic compounds qualitatively & quantitatively.
- Interprets the spectral data of various organic compounds.
- Finds applications of super conductors in the field of engineering and technology, telecommunications, computing, maglev trains etc.

Clusters:

Environmental chemistry:

- Develops an understanding the professional and safety responsibilities residing in working on environmental problems.
- Develops an understanding of the ethical standards for the responsible conduct of scientific research and its applications.
- Analytical Chemistry:
- Students are encouraged to participate in an appropriate field experience or research activity as part of their curriculum.
- Finds broad applications in pharmacy industries, food, chemical, agriculture industries and in science labs.
- Enhances their job opportunities and communication skills

Industrial Chemistry:

- Acquires the knowledge of the fundamental theory of operations and production management.
- Emphasizes the technical ,analytical and communication skills needed for a professional career in chemistry.

DEPARTMENT OF COMPUTER SCIENCE

Program Outcomes:

- To enable the students to be inquisitive about things and events around them
- To acquire the courage to question beliefs and practices
- To enable the students to ask what, how and why and find their answer by critically observing, experimenting, consulting, discussing and reasoning
- To record honestly their observations and experimental results in the laboratory or outside it
- To enable students to be guided by facts, reasons and logic and do not biased in one way or the other
- To encourage for new discoveries and inventions by sustained and dedicated work
- Capable of adapting to new technologies and constantly upgrade their skills with an attitude towards independent and lifelong learning
- To make the students to understand the environmental issues and challenges
- To develop skills in handling complex problems in data analysis and research design

Course Outcomes:

At the end of the B.Sc Computer Science Programme, graduates will be able to

- **Critical Thinking:** Apply knowledge of Computer Science to identify, analyze problems and to provide effective solution in the area of Computing.
- **Analytical skill:** Ability to design, develop algorithms and provide software solutions to cater the industrial needs.
- **Employability Skills:** Inculcate skills to excel in the fields of Information Technology and its Enabled services, Government and Private sectors, Teaching and Research.
- **Ethics:** Instill ethical responsibilities, human and professional values and make their contribution to the society.
- **Self Directed and Life-long Learning:** Engaged in lifelong learning to equip them to the changing environment and be prepared to take-up mastering programmes.

Course Specific Outcomes:

Paper-I: Programming in C:

Upon successful completion of this course, students will be able to

- Understand the basic terminology used in computer programming
- Write, compile and debug programs in C language.
- Use different data types in a computer program.
- Design programs involving decision structures, loops and functions.
- Explain the difference between call by value and call by reference
- Understand the dynamics of memory by the use of pointers and Structures.
- Use different data structures and create/update basic data files.

C Programming Lab:

Upon successful completion of this lab Course, student will be able to

- Understand the basic concept of C Programming, and its different modules.
- Acquire knowledge about the basic concept of writing a program.
- Explain the role of constants, variables, identifiers, operators, type conversion and other building blocks of C Language.
- Use the conditional expressions and looping statements to solve problems associated with conditions and repetitions.
- Demonstrate the role of Functions involving the idea of modularity.
- Understand the concept of Array and pointers dealing with memory management.
- Use the structures and unions through which derived data types can be formed.
- Understand the file handling for permanent storage of data.

Paper-II: Object Oriented Programming through C++ and Java:

Upon successful completion of this course, Student will be able to

- Gain the basic knowledge on Object Oriented concepts.
- Develop applications using Object Oriented Programming Concepts
- Demonstrate the differences between traditional imperative design and object oriented design

- Explain class structures as fundamental, modular building blocks
- Understand the role of inheritance, polymorphism, dynamic binding and generic structures in building reusable code
- Implement features of object oriented programming to solve real world problems

Object Oriented Programming LAB:

Upon successful completion of this course, students will be able to

- Apply object-oriented programming features to program design and implementation
- Understand object-oriented concepts and how they are supported by C++ and JAVA
- Understand implementation issues related to object-oriented techniques.
- Analyze, use, and create functions, classes, to overload operators.
- Use inheritance and Pointers when creating or using classes and create templates common to many object-oriented languages such as classes, message passing, overloading and inheritance.
- Design interactive programs with a simple GUI interface using an object-oriented programming language.
- Choose and apply appropriate advanced object-oriented programming concepts.

Paper-III: Object Oriented Programming with JAVA:

Upon successful completion of this course, student will be 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;
- 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;
- Use simple data structures like arrays in a Java program.
- Understand the concept of package, interface, multithreading and File handling in java.
- Use members of classes found in the Java API (such as the Math class).
- Employ various types of selection constructs in a Java program.

OBJECT ORIENTED PROGRAMMING USING JAVA LAB:

Upon successful completion of this course, students will be able to

- Understand programming language concepts, particularly Java and object-oriented concepts.
- Write, debug, and document well-structured Java applications
- Implement Java classes from specifications and effectively create and use objects from predefined class libraries
- Understand the behavior of primitive data types, object references, and arrays
- Apply decision and iteration control structures to implement algorithms
- Write simple recursive algorithms

- Implement interfaces, inheritance, and polymorphism as programming techniques and
- apply exceptions handling

Paper-IV: DATA STRUCTURES:

Upon successful completion of this course, students will be able to

- Demonstrate familiarity with major algorithms and data structures.
- Analyze performance of algorithms and choose the appropriate data structure and algorithm design method for a specified application.
- Determine which algorithm or data structure to use in different scenarios and be familiar with writing recursive methods.
- Demonstrate understanding of the abstract properties of various data structures such as stacks, queues, lists, trees and graphs and Use various data structures effectively in application programs.
- Demonstrate understanding of various sorting algorithms, including bubble sort, insertion sort, selection sort, heap sort and quick sort.
- Understand and apply fundamental algorithmic problems including Tree traversals, Graph traversals, and shortest paths.

DATA STRUCTURES USING JAVA LAB:

Upon successful completion of this course, students will be able to

- Design and analyze the time and space efficiency of the data structure
- Capable to identity the appropriate data structure for given problem
- Get practical knowledge on the application of data structures
- Implement linked list data structure to solve various problems.
- Apply graph and tree traverse technique to various applications.
- Understand and apply various data structure such as stacks, queues, trees and graphs
- To solve various computing problems using JAVA.

Paper-V: DATA BASE MANAGEMENT SYSTEM:

On completing the subject, students will be able to:

- Design and model of data in database.
- Store, Retrieve data in database.

DATABASE MANAGEMENT SYSTEMS LAB

Upon successful completion of this course, students will be able to

- Gain knowledge about SQL Fundamentals.
- Perform Unary & Binary table operations.
- Handle with different Data Base languages.
- Create Table View, Log & Triggers.
- Write Embedded and Nested Queries.
- Create index and views
- Create procedures, Triggers and cursers

Paper-VI: SOFTWARE ENGINEERING

On completing the subject, students will be able to:

- Ability to gather and specify requirements of the software projects.
- Ability to analyze software requirements with existing tools

- Able to differentiate different testing methodologies
- Able to understand and apply the basic project management practices in real life projects
- Ability to work in a team as well as independently on software projects

Software Engineering Lab:

Upon successful completion of this course, students will be able to

- Can produce the requirements and use cases the client wants for the software being produced.
- Participate in drawing up the project plan. The plan will include at least extent and work assessments of the project, the schedule, available resources, and risk management can model and specify the requirements of mid-range software and their architecture.
- Create and specify such a software design based on the requirement specification that the software can be implemented based on the design.
- Can assess the extent and costs of a project with the help of several different assessment methods.

Paper-VII :Elective-A - OPERATING SYSTEMS

On completing the subject, students will be able to:

- Analyze the concepts of processes in operating system and illustration of the scheduling of processor for a given problem instance.
- Identify the dead lock situation and provide appropriate solution so that protection and security of the operating system is also maintained.
- Analyze memory management techniques, concepts of virtual memory and disk scheduling.
- Understand the implementation of file systems and directories along with the interfacing of IO devices with the operating system.

Paper-VII: Elective-B - COMPUTER NETWORKS

After this course, the student will be able to

- Identify the different components in a Communication System and their respective roles.
- Describe the technical issues related to the local Area Networks
- Identify the common technologies available in establishing LAN infrastructure.

Paper-VII: Elective-C - WEB TECHNOLOGIES

On completing the subject, students will be able to:

- To understand the web architecture and web services.
- To practice latest web technologies and tools by conducting experiments.
- To design interactive web pages using HTML and Style sheets.
- To study the framework and building blocks of .NET Integrated Development Environment.
- To provide solutions by identifying and formulating IT related problems.

(Cluster 1) Paper-VIII: Elective –A-1 : FOUNDATIONS OF DATA SCIENCE

On completing the subject, students will be able to:

- Able to apply fundamental algorithmic ideas to process data.
- Learn to apply hypotheses and data into actionable predictions.
- Document and transfer the results and effectively communicate the findings using visualization techniques.

(Cluster 1) Paper-VIII : Elective –A-2 : BIG DATA TECHNOLOGY

On completing the subject, students will be able to:

- Learn tips and tricks for Big Data use cases and solutions.
- Learn to build and maintain reliable, scalable, distributed systems with Apache Hadoop.
- Able to apply Hadoop ecosystem components.

(Cluster 1 Paper-VIII : Elective –A-3) : COMPUTING FOR DATA ANALYTICS

On completing the subject, students will be able to:

- Learn the Big Data in Technology Perspective.
- Understanding of the statistical procedures most often used by practicing engineers
- Understand Forecasting methods and apply for business applications.

(Cluster 2) Paper-VIII : Elective –B-1 : DISTRIBUTED SYSTEMS

On completing the subject, students will be able to:

- Create models for distributed systems.
- Apply different techniques learned in the distributed system.

(Cluster 2) Paper-VIII : Elective –B-2 : CLOUD COMPUTING

On completing the subject, students will be able to:

- Compare the strengths and limitations of cloud computing
- Identify the architecture, infrastructure and delivery models of cloud computing
- Apply suitable virtualization concept.
- Choose the appropriate cloud player, Programming Models and approach.
- Address the core issues of cloud computing such as security, privacy and interoperability
- Design Cloud Services and Set a private cloud

(Cluster 2) Paper-VIII : Elective –B-3 : GRID COMPUTING

On completing the subject, students will be able to:

- Compare the strengths and limitations of Grid computing
- Identify the architecture, infrastructure and delivery models of Grid computing
- Apply suitable virtualization concept.
- Address the core issues of Grid computing such as security, privacy and interoperability

DEPARTMENT OF BOTANY

COURSE OUTCOMES

At the end of the three year B.Sc., course students will be able to

- ❖ Think critically in terms of ther learning and knowledge
- ❖ Assess and omplement the practical techniques necessary to solve aparticular biological problem.
- ❖ Analyze and quantify data collected during a research project.
- ❖ Communicate with expert and non-expert audiences through popular essays, poster displays, seminar presentations, project reports and research publications.

Specific outcomes

I Year:

Semester-I , Paper I

There are two main branches in the plant kingdom lower plants and one is higher plants

- ❖ There are some plants thallus like structure and some plant like structure in lower plants
- ❖ There is a lot of different among lower plants morphology Anatomy and physiology
- ❖ The reproduction is very simple and there are no sex organs in lower plants E.gAlgae, Fungi

Semester-II ,Paper II

- ❖ Sex organs have been developed in Bryophytes and Pteridophytes
- ❖ Gymnosperms are developed plants .These plants have cone like sex organs
- ❖ Anatomy is a very interesting and useful to the students .Student can learn have many types of tissues,structure of tissues and function of tissues in all types of plants by studying anatomy

II Year

Semester-III, Paper III

Plant taxonomy

- ❖ Taxonomy: the branch of science concerned with classification, especially of organisms; systematic.
- ❖ Plant Taxonomy: **Plant taxonomy** is the science that finds, identifies, describes, classifies and names plants

- ❖ What do you think would be the use of a classification
- ❖ Identifying poisonous plants from other ones.
- ❖ Identifying plants with medicinal values.
- Identifying plants with commercial value.

Plant embryology

Plant embryogenesis is a process that occurs after the fertilization of an ovule to produce a fully developed plant embryo. This is a pertinent stage in the plant life cycle that is followed by dormancy and germination. The zygote produced after fertilization, must undergo various cellular divisions and differentiations to become a mature embryo. An end stage embryo has five major components including the shoot apical meristem, hypocotyls, root meristem, root cap, and cotyledons. Unlike animal embryogenesis, plant embryogenesis results in an immature form of the plant, lacking most structures like leaves, stems, and reproductive structures.

Semester-IV, Paper IV

Plant physiology

Plant physiology is a sub discipline of botany concerned with the functioning, or physiology, of plants. Closely related fields include plant morphology (structure of plants), plant ecology (interactions with the environment), photochemistry(biochemistry of plants), cell biology, genetics, biophysics and molecular biology.Fundamental processes such as photosynthesis, respiration, plant nutrition, plant hormone functions, tropisms, nastic movements, photoperiodism, photo morphogenesis, circadian rhythms, environmental stress physiology, seed germination, dormancy and stomata function and transpiration, both parts of plant water relations, are studied by plant physiologists.

III year

Semester-V Paper-V

- ❖ Exhibit a knowledge base in genetics, cell and molecular biology, and anatomy and physiology
- ❖ Demonstrate the knowledge of common and advanced laboratory practices in cell and molecular biology
- ❖ Exhibit clear and concise communication of scientific data
- ❖ Engage in review of scientific literature in the areas of biomedical sciences
- ❖ Critique and professionally present primary literature articles in the general biomedical sciences field
- ❖ Analyzes the historical evolution of plant breeding, knowing which have been the key scientific and technical advances that have influenced its development or accelerated its results.

- Knows the different plant reproduction systems, how they affect genetic variability and how they condition the strategies and processes of selection and breeding.
- Has a deeper insight into the genetic basis supporting plant breeding, from the individual gene to the complete genome.
- Knows the aim of the genome analysis projects of certain model plant species and the possibilities offered by their comparison with the genomes of other species of agronomic interest.
- Understands the importance of identifying genes, isolating them, determining their function and controlling their expression.
- Can identify genetic variability, locating the genetic regions associated with traits of interest for breeding, and determining the connection between phenotypic and genetic variability.
- Considers the importance of plant genetic resources as a source of variability in plant breeding programmes, and knows the appropriate processes for their collection, conservation, evaluation and use.

Semester-VI, Paper-VII

- Successfully maintain cultures of PLANT cells and established cell lines with good viability, minimal contamination and appropriate documentation.
- Perform supportive or episodic tasks relevant to cell culture, including preparation and evaluation of media, cryopreservation and recovery, and assessment of cell growth/health.
- Recognize and troubleshoot problems common to routine cell culture.
- Totipotency, organization of plant tissue culture, aseptic technique of PTC
- Preparation and sterilization of MS medium, stocks and explants
- Callus induction, regeneration of shoots, root induction, meristem culture using Oscimum sanctum plant.
- Isolation of protoplast, fusion and culture, somatic embryogenesis Development of synthetic seeds, micro propagation of banana, Citrus, papaya, sugarcane etc.
- Isolation of pBR-322, preparation of competent cells.
- Transformation by calcium chloride method
- screening of bacterial colonies using X-gal and IPTG, isolation and purification of yeast DNA
- Demonstration of southern blot/ northern blot/ western blot/ PCR.

DEPARTMENT OF ZOOLOGY
COURSE OUTCOMES

- Students will be able to apply the scientific method to questions of biology.
- Students will be able to identify major groups of animals to be able to classify them.

- Students will be able to explain how organisms function at the level of gene, genome, cell, tissue, organ and organ system.
- Students will be able to demonstrate proficiency in the experimental techniques and methods of analysis.
- Students will be able to explain the structure & functions of major human organs.
- Students will obtain knowledge of fishery science, scientific tools of data collection in fishery science.
- Students should be able to demonstrative ecological interactions among organisms.
- Students will obtain knowledge of structure & functions ecosystems.
- Students will obtain the knowledge of marine environment and fauna living in the sea water.
- Students gain knowledge of evolution of various animals including human beings.
- Students will be able to explain how the life has originated from the non living things in the earth, different geological eras & animals which prevailed in different geological eras.

COURSE SPECIFIC OUTCOMES
Paper-I: Biology of Non-Chordates:

- Students would be able to understand the distinguishing characters, evolution and history of Non-chordae phyla.

Paper-II: Biology of Chordates:

- By studying this paper students would be able to understand different categories level of organization, evolutionary relationship and unique –charactrs of various chordates.

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Paper-III: Cell Biology, Genetics & Evolution:

- This paper helps the student to understand teh cell structure various cell organelles and their functions.
- Studying the evolution helps the student to understand the origin of earth & life, process of evolution various geological time scales.
- Bu studying Genetics students would be able to understand behaviour of chromosomes, inheritance patterns and gene interactions.

Paper-IV: Embryology, Physiology & Ecology:

Outcomes are students would be able to understand
- Interaction between organisms & environment
- The chemistry of carbohydrates, proteins & lipids.
- The metabolic functions of the body

- The fertilization & development of various animals.

Paper-V: Animal Biotechnology:

- Students would understand various genetic engineering methods used to develop new breeds of plants & animals which are helpful to humankind.

Paper-VI: Animal Husbandary:

- Student would be able to learn rating of cattle poultry, that inturn helps then to start a small scale industry

Paper-VII: Immunology:

- Students would be knowing the structure and functions of various immune organs, immune system and their role in maintaining health

Paper-VIII: Cluster - Aquaculture:

- Students would be able to understand the culture techniques of freshwater & marine fishes & prawns.

DEPARTMENT OF COMMERCE

Course outcomes

- Graduates of this degree will be knowledgeable across the core requirements of the degree. Graduates will be able to:
- Demonstrate knowledge of major theories and models in key areas of organisational behaviour.
- Analyse organisational problems and generate realistic solutions based on current academic research in organisational behaviour
- Demonstrate a knowledge of macroeconomic theory as it relates to current macroeconomics policy and issues
- Demonstrate a knowledge of microeconomic theory as it relates to markets, firms, government policy, and resource allocation
- Demonstrate a knowledge of key concepts underlying quantitative decision analysis
- Apply basic mathematical and statistical skills necessary for analysis of a range of problems in economics, actuarial studies, accounting, marketing, management and finance
- Graduates of this degree will be knowledgeable of an area of specialisation in the

Faculty. Graduates, subject to their areas of specialization, will be able to:

- Demonstrate knowledge of the theories, concepts and findings of the Faculty specialisations
- Graduates of this degree will be knowledgeable of domestic and international economic and organizational environments. Graduates will be able to:
- Analyse commerce /business issues in the international contexts
- Compare international contexts and issues through the lens of the commerce disciplines
- Evaluate national and international debates and discussions on economic, commercial, and business issues

- ❖ Graduates of this degree will be knowledgeable of disciplines outside the faculty. Graduates will be able to:
- ❖ Demonstrate an understanding of the concepts, principles, theories and arguments of their selected areas of study outside the core disciplines of economics and business.

Course Specific outcomes

Semester I

(G 101) Fundamentals of Accounting – I and (C 101) Accounting -I

- To make students to understand the basic system of accounting in business organisations from entering transactions to preparation of final accounts of non corporate business organisations.

(G 102) Business Organisation and (C 102) Business Organisation and Management

- To make the student understand the various forms of business organisations and their benefits so as to get the knowledge of running their own ventures in future.

(G 103) Business Economics – I

- To make the students understand the basic economic concepts and their relevance to the business so that decisions can be taken in a effective way in future.

Semester II

(G 201) Fundamentals of Accounting - II and (C 201) Accounting II

- To make the students understand the process of accounting of Depreciation, Provisions and Reserves, Bills of Exchange, Consignment and Joint Venture.

(G 202) Business Environment

- To make the students understand the the various environmental factors that affect the operations and decisions of the business.

(G203) Business Economics – II and (C 202) Business Economics

- To make the students understand the production function, Market Structure and overall economic position in the country.

Semester III

(G 301) and (C 301) Corporate Accounting

To make the students understand the process of issue of share capital, Debenture Capital and valuation of Goodwill in Corporate entities.

(G 302) and (C 302) Business Statistics

- To make the students understand the importance of statistics in Business and how to apply basic statistical techniques for solving business problems.

(G 303) Banking Theory and Practice

- To make the students understand about the nature and functions of banks and their operations and procedures.

Semester IV

(G 401) (C403) Accounting for Service Organisations

- To make the students understand the process of accounting system followed by various service organisations, such as Electricity Supply Companies, Banks, Insurance (both life and non-life)companies.

(G 402) and (C 402) Business Laws

- To make the students understand the law of contract, sale of goods act and Information and Technology Act so that business decisions can be made.

(G 403) Income Tax

- To make the students understand the basic concepts of Tax and computation process of Income from salary, Income from House Property, Income from Business and Profession.

(C 401) Banking Theory and Practice

- To make the students understand about the nature and functions of banks and their operations and procedures.

Semester V

(501)Business Laws –I

* To make the students learn the basics of business laws and apply them in real life situation.

(502) Auditing – I

* To impart knowledge pertaining to basic concepts of auditing and to acquaint oneself with auditing procedure.

(503) Cost and Management Accounting – I

* To impart knowledge on the application of cost accounting and techniques.

(504) Corporate Accounting – I

* To facilitate the student to learn the concept of corporate accounting and apply them in real life.

Optional A

(505 A) Database Management System – I

- To facilitate the students to learn the concept of DBMS and apply them in real life.

(506 A) E-Commerce – I

To facilitate the students to learn the concepts of E-Commerce and apply them in real life.

Optional B

(505 B) Retail Management

- To realise the students the cross functional nature of the operations process that helps to create a better retail outlet and recognize supportive processes and manage the operations of retail stores.

(506 B) Security Analysis and Portfolio Management

- To facilitate the students to learn the concepts of Investment and Security and apply them in real life.

Semester VI

(601) Business Laws – II

* To make the students learn the basics of other business related laws such as Contract of Indemnity, Guarantee and Bailment, Sale of Goods Act, Consumer Protection Act and Companies Act and apply in real life situations.

(602) Auditing – II

* To impart knowledge pertaining to audit related functions and audit report writing procedure.

(603) Cost and Management Accounting – II

* To facilitate the students to learn the concepts of Management Accounting and apply them in analysing the performance of companies.

(604) Corporate Accounting – II

* To make the students possess basic knowledge in Amalgamation and Reconstruction and enable to prepare financial statements of insurance and banking companies.

Optional A

(605 A) Database Management System – II

- To facilitate the students to learn the concept of DBMS and apply them in real life.

(606 A) E-Commerce – II

- To facilitate the students to learn the concepts of E-Commerce related concepts like E-Payment systems, Web-based Marketing and Advertising, and Package of Tally.

Optional B

(605 B) Human Resource Management

- To facilitate the students to learn the concepts of Human Resource Management and apply them in real life situation.

(606 B) E-Banking

- To make the students learn the basic concepts of E-Banking and apply them in real life situation.

DEPARTMENT OF HISTORY

DEPARTMENT OF ECONOMICS

DEPARTMENT OF POLITICAL SCIENCE

COURSE OUTCOMES

- write clearly and with purpose on issues of international and domestic politics and public policy;
- participate as a civically engaged member of society;
- analyze political and policy problems and formulate policy options;
- use electronic and traditional library resources to research key local, state, national and international policy issues and present results;
- demonstrate competency with basic tools underlying modern social science research including competency in statistics and qualitative analysis
- demonstrate critical thinking, including the ability to form an argument, detect fallacies, and martial evidence, about key issues of public policy and politics;
- discuss the major theories and concepts of political science and its subfields; and
- deliver thoughtful and well-articulated presentations of research findings.

Specificoutcomes

Course Code: 1103-Concepts, theories and Institutions-I

- ✓ To under the nature and scope of Political theory
- ✓ To understand the significance of political theory
- ✓ To acquaint with the theories, approaches, concepts and principles of political theory
- ✓ To appreciate the procedure of different theoretical ideas in political theory
- ✓ To interpret and assess information regarding variety of political theory
- ✓ To understand the various traditional and modern theories of political science
- ✓ To evaluate the theories of origin of the state
- ✓ To comprehend the sources of political information's

Course Code: 2103- Concepts, theories and Institutions-II

- ✓ To understand the concept of state, nation and civil society
- ✓ To understand the elements and factors of state and nation
- ✓ To know about the meaning sovereignty, types and characteristics
- ✓ To analyze critically the theories of monism and pluralism
- ✓ To learn the origin the concepts such as Law, Power, authority, and legitimacy
- ✓ To understand the forms of government in various countries and their working pattern
- ✓ To compare with procedure of various social institutions and government institutions
- ✓ To analyze the meaning of organs of government and theory of separation of power

Course Code: 3103-Indian Government and Politics-I

- ✓ To understand the philosophy of Indian constitutions
- ✓ To identify the causes, impact of British colonial rule
- ✓ To appreciate the various phases of Indian nation movement
- ✓ To know the salient features in making of Indian constitution
- ✓ To appreciate the fundamental rights and duties and the directive principles of state policy.
- ✓ To understand the law making process in India

Course Code: 4103- Indian Government and Politics-II

- ✓ To understand the Judicial system in India
- ✓ To evaluate the evolution, functioning and consequences of political parties in India
- ✓ To identify how electoral rules and procedures India effect election outcomes

Course Code: 5103- Indian Political Thought-I

- ✓ To demonstrate knowledge of key thinkers and concepts
- ✓ To understand the nature, methods and significance of political thoughts
- ✓ To analyst the theory of ancient & medieval political thought of Greek and India
- ✓ To appreciate the ideas of them in context of classification of government, law and revolutions and slavery

Course Code: 6103- Principles of Public Administration-I

- ✓ To understand the nature and scope of Public Administration.

- ✓ To acquaint with the theories, approaches, concepts and principles of Public Administration.
- ✓ To understand public administration theory and concepts from multiple perspectives.
- ✓ Pre-service and in-service students synthesize and apply decision-making, leadership and management skills, in public agencies or nonprofit organizations.

Course Code: 7103- Western Political Thought-II

- ✓ To acquire knowledge about modern political thinkers and their views on state craft
- ✓ To compare with the social contratualist thoughts of Hobbes, Lock and Rousseau and their view regarding state, government and general will.
- ✓ To thoroughly compare the democratic revolution and creation of civil society

Course Code: 8103- Principles of Public Administration-II

- ✓ Acquaint with the functioning of the Indian administration, at central levels and the responses of these systems in addressing the concerns of the people
- ✓ To understand the concept of Office
- ✓ Understand the meaning and related concepts of office and office management