

B.Sc Programme Outcomes:

Students completed Bachelor of Science expected to achieve these following aspects

- Able to explain day to day things in scientific language
- Mathematical and biological ability
- Computer skills
- Knowledge about elements and their behaviour
- Promoting Scientific thinking in the people around them
- Logical thinking

Programme Specific Outcomes of B.Sc Mathematics

After the completion of B.Sc Mathematics the student should be able to

1. Gain knowledge of fundamental concepts and theorems in the field of real analysis, Abstract Algebra and Linear algebra through the courses in B.Sc Mathematics.
2. apply the knowledge obtained through the courses in B.Sc Mathematics for advancing the broad area of Mathematics.
3. Use the concepts and techniques from different Numerical methods to solve work related problems.
4. Solve typical mathematical problems previously unknown to them using appropriate theorems

Course Outcomes

Differential Equations(3110-1)

Through active learning of this course, students develop their ability to

1. Identify different types of ordinary Differential Equations.
2. Solve various types of Ordinary Differential Equations
3. Distinguish between Lagrange' DE and Cauchy's DE
4. Choose proper method to solve first order ODE.

Solid Geometry (3110-2)

Through active learning of this course, students develop their ability to

1. Identify different types of equations of three dimensional surfaces
2. Recall the normal form of to three dimensional surfaces
3. Solve problems related to three dimensional surfaces
4. Derive equations for different three dimensional surfaces

Abstract Algebra (3110-3)

Through active learning of this course, students develop their ability to

1. Recall the definitions of semi group, monoid, group and commutative group
2. Explain various properties of groups
3. Distinguish between even and odd permutations
4. Analyse the properties of normal subgroups
5. Differentiate groups and cyclic groups.

Real Analysis (3110-4)

Through active learning of this course, students develop their ability to

1. Recall properties of Real numbers
2. Calculate the limit of a sequence
3. Apply suitable comparison tests to find test the convergence of a series
4. Interpret mean value theorems geometrically
5. Analyse properties of Riemann integrable function.

Ring Theory and Vector Calculus (3110-5A)

Through active learning of this course, students develop their ability to

1. Reproduce the definition and properties of Rings
2. Appreciate the significance of maximal and prime ideals of a Ring
3. Differentiate various properties of Gradient of a scalar point function, Divergence and Curl of a vector point function.
4. Understand Gauss, Green's and Stoke's theorems and be able to apply them in solving problems of vector integration.
5. Apply the theory in the course to solve a variety of problems
6. Demonstrate skills in solving problems.

Linear algebra (3110-5B)

Through active learning of this course, students develop their ability to

1. Demonstrate understanding of basic concepts in Vector spaces, basis and dimension.
2. Find dimension of sum of two subspaces and quotient spaces.
3. Understand Rank and Nullity theorem and employ this method in variety of applications.
4. Compose matrix of a linear transformation.
5. Apply logical thinking in problem solving.

Numerical Analysis (3110-VIIB)

Through active learning of this course, students develop their ability to

1. Identify errors in experimental data
2. Estimate missing data through suitable interpolation methods
3. Analyse methods of interpolating
4. Construct polynomials for a given data
5. Use appropriate numerical technique to aid problem solving.
6. Employ methods related to the concepts in this course in a variety of applications.



KRK GOVT COLLEGE
ADDANKI-523201, PRAKASAM Dt



Physics

Program Outcomes: Physics

At the completion of B. Sc. in Physics students are able to:

Demonstrate a rigorous understanding of the core theories & principles of physics, which includes Semester-1: Mechanics; Semester-2: Waves & Oscillations; Semester-3: Thermodynamics; Semester-4: Optics; Semester-5: Electricity-Electronics; Modern Physics, Semester-6: Cluster Elective: Renewable Energy sources

Learn the Concepts as Mechanics; Waves & Oscillations; Thermodynamics; Optics; Electricity-Electronics & Modern Physics; Cluster Elective: Renewable Energy Quantum Mechanics, introduced at degree level in order to understand nature at Macro level to atomic levels.

Provide knowledge about material properties and its application for developing technology to ease the problems related to the society.

Understand the set of physical laws, describing the motion of bodies, under the influence of system of forces.

- Understand the relationship between particles & atom, as well as their creation & decay.
- Relate the structure of atoms & subatomic particles
- Understand physical properties of molecule the chemical bonds between atom as well as molecular dynamics.
- Analyze the applications of mathematics to the problems in physics & develop suitable mathematical method for such application & for formulation of physical theories.
- Learn the structure of solid materials & their different physical properties along with metallurgy, cryogenics, electronics, & material science.
- Understand the fundamental theory of nature at small scale & levels of atom & sub-atomic particles.
- Acquired the knowledge with facts and figures related to various subjects in pure Physics Understood the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life.
- Acquired the skills in handling scientific instruments, planning and performing in laboratory experiments
- The skills of observations and drawing logical inferences from the scientific experiments.
- Analyzed the given scientific data critically and systematically and the ability to draw the objective conclusions.
- Been able to think creatively (divergently and convergent) to propose novel ideas in explaining facts and figures or providing new solution to the problems.
- Realized how developments in any science subject helps in the development of other science subjects and vice-versa and how interdisciplinary approach helps in providing better solutions and new ideas for the sustainable developments.
- Developed scientific outlook not only with respect to science subjects but also in all aspects related to life.

- Realized that knowledge of subjects in other faculties such as humanities, performing arts, social sciences etc. can have greatly and effectively influence which inspires in evolving new scientific theories and inventions.
- Imbined ethical, moral and social values in personal and social life leading to highly cultured and civilized personality.
- Developed various communication skills such as reading, listening, speaking, etc., which we will help in expressing ideas and views clearly and effectively.
- Realized that pursuit of knowledge is a lifelong activity and in combination with untiring efforts and positive attitude and other necessary qualities leads towards a successful life.
- Developed flair by participating in various social and cultural activities voluntarily, in order to spread knowledge, creating awareness about the social evils, blind faith, etc.

Programme Specific Outcomes(PSO)

PSO1: Understand core physical concepts, principles and theories along with their applications in wave theory, optics, Newtonian mechanics, thermodynamics and radiation physics, Electromagnetism, Special and general theories of relativity, quantum mechanics, atomic physics, nuclear and elementary particle physics, solid state physics, analog and digital electronics, microprocessors and microcontrollers, electronic instrumentation and computational methods and programming .

PSO2: Develop proficiency in the analysis of complex physical problems and the use of mathematical or other appropriate techniques to solve them.

PSO3: Perform procedures as per laboratory standards in the areas of wave theory, optics, Newtonian mechanics, thermodynamics radiation physics, Electromagnetism, Special and general theories of relativity, quantum mechanics, atomic physics, nuclear and elementary particle physics, solid state physics, analog and digital electronics, microprocessors and microcontrollers ,electronic instrumentation and computational methods and programming .

PSO4: Understand the applications of Physics and electronics in other fields of science and technology.

Programme outcomes (PO)

PO1: Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational and personal) from different perspectives.

PO2: Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

PO3: Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.

PO4: Effective Citizenship: Demonstrate empathetic social concern and equity-centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO5: Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

PO6: Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.

PO7: Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes.

PO 8: Understood the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life.

PO 9: Acquired the skills in handling scientific instruments, planning and performing in laboratory experiments

PO 10: The skills of observations and drawing logical inferences from the scientific experiments.

PO 11: Analyzed the given scientific data critically and systematically and the ability to draw the objective conclusions.

PO 12: Been able to think creatively (divergently and convergent) to propose novel ideas in explaining facts and figures or providing new solution to the problems.

PO 13: Realized how developments in any science subject helps in the development of other science subjects and vice-versa and how interdisciplinary approach helps in providing better solutions and new ideas for the sustainable developments.

PO 14: Developed scientific outlook not only with respect to science subjects but also in all aspects related to life.

Semester-I

MECHANICS

COURSE OUTCOMES(CO)

CO1.Determine the resultant force and moment for a given system (PO1,PSO2)

CO2.Calculate the motion parameters for a body subjected to a given force system.(PO5,PSO1)

CO3.Enhance the knowledge on beams and understand the applications of ultrasonics(PO4,PSO4)

Semester-II

WAVES AND OSCILLATIONS

1. By studying the chapter oscillations we can expect to understand the nature and causes of oscillations.

2. Demonstrate a sound understanding of the behaviour of oscillating systems and the associated topic of wave generation and propagation

3. Develop the mathematical formalism that describes vibrations, oscillations and waves

4. Use that mathematical formulism to become proficient in the solution of analytical and numerical problems in vibratory and wave phenomena

5. Recognise a whole host of examples of oscillatory and wave phenomena and devices across a wide and diverse range of domains in physics

COURSE OUTCOMES(CO)

CO1. Understanding of the physical principles of oscillations and wave propagation (PO7,PSO1)

CO2. Enhance the knowledge on complexity of vibrations. (PO4,PSO4)

CO3. Acquire the knowledge on the properties of sound waves.(PO1,PSO3)

Semester-III

THERMODYNAMICS

I. To identify the unique vocabulary associated with thermodynamics through the precise definition of basic concepts to form a sound foundation for the development of the scientific principles.

- II. To understand the basic concepts of thermodynamics such as system, state, state postulate, equilibrium, process, cycle, energy, and various forms of energy.
- III. To determine thermodynamic properties of real Substances
- IV. To Understand the meaning of heat and work
- V. To understand the engineering significance of the second law of thermodynamics: maximum work and maximum efficiency in reversible processes
- VI. To apply the first and second law to the analysis of engine and refrigeration cycles, using common idealizations for such cycles
- VII. To introduce an intuitive systematic problem solving technique that can be used as a model in solving engineering problems
- VIII. Students will be able to recognize and solve a variety of types of problems concerning with thermodynamics.
- IX. Students will be able to investigate, understand, and innovate in real life situations

COURSE OUTCOMES(CO)

- CO1. Apply the kinetic theory of gases, the properties of ideal gases and interactions that lead to non-ideal behavior, to predict the behavior of gas with change in temperature, pressure and volume.(Po1,PSO1)
- CO2. Use the laws of thermodynamics and understand the efficiency and properties of thermodynamic cycles for heat engines, refrigerators and heat pumps.(Po4,PSO2)
- CO3. learn about the low temperatures and Black-body radiation and the statistical principles (Po3,PSO4).

Semester-III

OPTICS

To help students to understand the nature of light, its propagation and interaction with matter which is essential to constantly emerging newest technologies.

To provide hands-on experience in optics which will be greatly appreciated in the modern industrial job market.

COURSE OUTCOMES(CO)

- CO1. Understand basic optics, including paraxial optics, system layout, and lens performance criteria. Understand interference and various phenomena of light occurring in nature.(PO1,PSO1)
- CO2. Understand the diffraction and solve problems related to diffraction grating and understand the properties of light.(PO4,PSO2)
- CO3. Enhance the knowledge on lasers, holography and optical fibers.(PO2,PSO4)

Semester-IV

ELECTRICITY AND ELECTRONICS

- 1. Ability to explain the basic concepts of Electrostatic fields, Magnetostatic fields, electrodynamic concepts, Maxwell equations and electromagnetic waves.
- 2. Ability to use methods and tools to analyze these concepts, characterize them and to calculate them from given sources. Both in concept as well as in practice.
- 3. Build an overview of the domain of Electrodynamics with a detailed interconnecting scheme of sub-domains.
- 4. Ability to handle mathematical methods and tools to meet the objectives.
- 5. Ability to analyze a given problem - Ability to translate the physical problem in a mathematical formulism.
- 6. Use the mathematics and its tools to solve the problem
- 7. Translate the mathematical results in terms of physics results
- 8. Test the found solution against known, or easy to calculate, limits.
- 9. Magnetic fields are everywhere. There are all types of waveforms, intensities, and frequencies.

Magnetic fields bathe the whole Earth and have significant effects on living organisms. 10. Magnetic fields cannot be felt, sensed, or seen like patterns of light, or heard like sounds, so their biological effects have largely gone unnoticed. But there is a lot to learn about magnetism and its relationship to the whole Earth, the Sun, the planets, and all the stars and galaxies.

COURSE OUTCOMES(CO)

CO 1. Illustrate the basics concepts of electric circuits, magnetic circuits (PO1,PSO1)

CO 2. Analyze and solve electric and magnetic circuits (PO4,PSO2)

CO 3. Know the production methods of electromagnetic waves (PO3,PSO4)

Semester-V

MODERN PHYSICS

1. The nuclear aspect to physics concentrates on the components of the physical world that include atoms, neutrons and protons.

2. Many countries use **nuclear engineering**, based on an understanding of nuclear physics, to produce energy through **nuclear power**.

3. Apart from the industrial applications of nuclear physics, the study of this type of physics elucidates knowledge about how the natural world works.

4. On completion of this unit the student should be able to explain and model relevant physics ideas to describe the sources and uses of nuclear reactions and radioactivity and their effects on living things, the environment and in industry.

5. Solid State Physics will provide both an introduction to the behaviour of solid materials and the conceptual tools necessary if one wishes to pursue such studies.

6. Solid State Physics provides the basis for the most important technological advances of the 21st century.

7. It also provides a wide range of opportunities to 'see' the effects of Quantum Physics in action.

8. The thermal, electrical, and magnetic properties of solids will be discussed via microscopic models.

9. Topics covered include: survey of crystal lattices, elastic scattering of waves, atomic vibrations, electrons in crystals, thermodynamics of phonons and electrons, electrical and thermal conduction, magnetic properties, and superconductivity.

COURSE OUTCOMES(CO)

CO1. Identify basic nuclear properties and outline their theoretical descriptions, understand the principle and working of accelerators and detectors.(PO4,PSO2)

CO2. Gain basic knowledge of solid state physics.(PO3,PSO1)

CO3. Gain in depth knowledge in the theory of superconductivity in order to understand and describe the principles behind various superconducting applications(PO1,PSO4)

PHYSICS practical-I

After successful completion of the course, the student will be able to:

CO1. Understanding of the physical principles of oscillations and wave propagation (PO1,PSO1)

CO2. Enhance the knowledge on complexity of vibrations. (PO3,PSO3)

CO3. Acquire the knowledge on the properties of sound waves.(PO4,PSO4)

To be completed in the month of JULY

1. To determine the thickness of a rectangular bar by screw gauge and breadth by vernier calipers.

2. To determine the thickness of a given wire by screw gauge.

3. To determine the inner and outer diameter of rubber tube by using traveling microscope.

4. To determine the mass of given wire correct to a milligram using common balance.

To be completed in the month of AUGUST & SEPTEMBER

1. g by compound pendulum
2. Y by non-uniform bending.
3. Rigidity Modulus – by dynamic Torsion.
4. Sonometer-determination of unknown frequency of a tuning fork.

To be completed in the months of OCTOBER & DECEMBER

5. Coefficient of Viscosity – Poissellus method.
6. g by simple pendulum Theory of approximation.
7. K of bad conductor – Less method
8. Volume resonator.

To be completed in the month of DECEMBER & JANUARY

9. Bifilar pendulum.
10. Coupled oscillator.
11. Flat spiral spring – Determination of y and n and calculation of k and \square
12. Surface tension – Determination by method of drops or capillary rise.

To be completed in the month of FEBRUARY

13. Study of viscosity of a fluid using Searle's viscometer.
14. Study of damping of an Oscillating disc in air and water logarithmic decrement.
15. Study of Oscillations of a mass under different combination of springs

PHYSICS practical-II

(MINIMUM – 12 Experiments)

COURSE OUTCOMES(CO)

CO1.Determine the wavelength of sodium light by using Optical bench - Biprism .(PO1,PSO2)

CO2.Determine the wavelength of mercury spectrum by using Spectrometer - Diffraction grating normal incidence. .(PO5,PSO1)

CO3.Verify Kirchoff's current law and voltage law.(PO2,PSO4)

CO4.Calibrate the given ammeter using potentiometer.(PO3,PSO2)

CO5.Convert the Galvanometer in to voltmeter.(PO4,PSO3)

Number of classes per week per paper = 1 [3 Period duration]

To be completed in the months of JUNE and JULY

INTRODUCTORY LAB

- 1.Optical Bench - Biprism
- 2.Spectrometer - Angle of the Prism –Minimum deviation - calculation of R.I.
3. Potentiometer - Calibration of Potentiometer wire.
4. Carey Foster's bridge - Calibration of bridgewire

To be completed in the month of AUGUST AND SEPTEMBER

1. Spectrometer - i-d curve.
2. Optical bench - Biprism - determination of wavelength of sodium light.
3. Spectrometer - Dispersive power of prism.
4. Newton's Rings - Determination of radius of curvature of plano convex lens.

To be completed in the month of SEPTEMBER AND OCTOBER

5. Spectrometer - Diffraction grating normal incidence - determination of wavelength of mercury spectrum.
6. Determination of thickness of wire - wedge method.
7. Verification of kirchoff's laws.
8. Sonometer - Frequency of A.C.

To be completed in the months of DECEMBER AND JANUARY

9. Potentiometer. - Calibration of Ammeter.
10. Determination of M and H.

11. Conversion of Galvanometer in to voltmeter.
 12. Carey Foster's Bridge - Specific resistance.
- To be completed in the month of JANUARY & FEBRUARY**
13. Resolving power of Telescope.
 14. Refractive index of a liquid – Boy's Method.
 15. Study of Optical rotation – Polarimeter.

COURSE OUTCOMES(CO)

- CO1. Understand the basic concepts of AC circuits.(PO1)
 CO2. Apply the basic network theorems to simplify, analyse and design large-scale networks. (PO3)

Semester-VI

MODERN PHYSICS

Modern Physics is used as a tool for studying the structures of atoms and molecules. The large number of wavelengths emitted by these systems makes it possible to investigate their structures in detail, including the electron configurations of ground and various excited states

1. To develop the abilities and fundamental knowledge so that students can learn new things for innovation and revolution in the future.
2. Explore Davisson-German experiment in finding the wavelength of a moving electron in a crystal.
3. Determine the wave-function probability of an electron in a particular shell or orbit using Schrodinger wave equation.
4. Investigate and conclude that it is not possible to determine both the position and momentum of electron in single measurement as discussed by Heisenberg uncertainty principle.

COURSE OUTCOMES(CO)

- CO1. Recognizes the electronic structure and properties of atomic spectra and molecular spectra. (PO1)
 CO2. Draws energy levels of atomic spectra. Describes types and applications of atomic spectra. (PO3)
 CO3. Explains applications of quantum theory. (PO4)

PHYSICS practical-III

(MINIMUM – 12 Experiments)

Number of classes per week per paper = 1 [3 Period duration]

COURSE OUTCOMES(CO)

- CO1.Determine the wavelength of sodium light by using Optical bench – Lloyd's mirror(Po1,PSO1)
 CO2.Determine the radius of curvature of concave lens by forming Newton's rings.(Po3,PSO2)
 CO3.Determine the Efficiency of Transformer and Figure of merit of a B.G.(PO5,PSO3)
 CO4.Determine the refractive index of a liquid by hallow prism.(PO4,PSO3)
 CO5.Determine the mutual inductance - Direct deflection method.(PO2,PSO4)

To be completed in the months of JUNE & JULY

1. e/m Thomson's method.
2. Field along the axis of a circular coil.
3. Efficiency of Transformer.
4. Figure of merit of a B.G.

To be completed in the month of AUGUST & SEPTEMBER

5. Determination of mutual inductance - Direct deflection method.
6. Hall effect.
7. Hartman's dispersion formula - Grating.
8. Determination of refractive index of a liquid by hallow prism.

To be completed in the month of OCTOBER & DECEMBER

9. Optical bench - Thickness of a wire.
10. Newton's rings - Determination of radius of curvature of concave lens.
11. Lloyd's mirror – using optical bench – determination of wavelength of sodium light.
12. Resolving power of grating.

To be completed in the months of JANUARY & FEBRUARY

13. Carey Foster's Bridge-Temperature coefficient of resistance.
14. Determination of wavelength of light using diffraction grating – minimum deviation method.
15. Internal resistance of a Cell by potentiometer.

PHYSICS practical-IV

(MINIMUM-12 Experiments) Credits-1

Number of classes per week per paper = 1 [3 Period duration]

COURSE OUTCOMES(CO)

- CO1.Determine the characteristics of semi conductor diode and Zenor diode. (PO4,PSO1)
CO2.Verify the Logic gates.(PO3,PSO4)
CO3.Determine the Energy gap of a semiconductor using a junction diode.(PO2,PSO2)
CO4.Verify the Thevenin's theorem and Norton's theorem(PO5,PSO4)
CO5.Determine the characteristics of C.E (Common Emitter characteristics) and F.E.T (Field effect Transistor) .(PO6,PSO3)

To be completed in the months of JUNE & JULY

Introductory lab;

1. Familiarisation of multi meter
 - a. Function of different knobs of multimeter
 - b. Measurement of A.C and D.C voltages and currents
 - c. Measurement of resistances and comparing the measured value with the help of colour code
2. Familiarisation of signal generator and CRO
 - a. Familiarisation of each Knob of the given signal generator and CRO
 - b. Measurement of output voltage of the signal generator using CRO
 - c. Measure the frequency of the single wave voltage obtained from signal generator

To be completed in the months of JULY AND AUGUST

1. L.C.R. series and parallel resonance.
2. Semi-conductor diode Characteristics.
3. A.C impedance and power factor.
4. Zenor diode and its characteristics.

To be completed in the months of AUGUST & SEPTEMBER

5. Thevenin's Theorem.
6. Full wave rectifier – Bridge type.
7. Logic gate.
8. C.B (Common base characteristics of a Transistor).

To be completed in the months of OCTOBER & DECEMBER

9. Norton's theorem.
10. C.E (Common Emitter characteristics).
11. F.E.T (Field Effect Transistor) characteristics.
12. R.C phase – shift oscillator.

To be completed in the months of JANUARY & FEBRUARY

13. Energy gap of a semiconductor using a junction diode.
14. Design and construction of a multimeter.
15. Temperature Coefficients of a transistor.
16. Study of characteristics of fiber optic LED and photo diode detector
17. Measurement of Numerical Aperture

Theoretical project relating to any topic in Physics is to be submitted by each student at the

end of VI Semester which will be assessed for 25 marks by Internal. This will be considered as second Internal assessment of Practical IV. I Internal Assessment of Practical IV will be based on lab Examination. Remaining 75 marks are for external practical examination to be conducted at the end of VI Semester.

Cluster-6: Renewable Energy Sources

Programme Specific outcomes:

PSO 1: Understand the concepts of physics, various renewable energy resources and use mathematical concepts to deal with them quantitatively.

PSO 2: Analyse problems associated with solar, wind, ocean and bio energy and energy storage systems.

PSO 3: Acquire the skills to study the mechanical, thermal, electrical and electronic properties of materials used for solar, wind, ocean and bio energy.

PSO 4: Ability to interlink the skills acquired and develop an aptitude to address the problems in the production, storage and usage stages of renewable energy systems.

Department of chemistry

Bsc (mpc) & bsc (bzc)

Programme specific outcomes

1. Students gain knowledge of elements and their properties
2. students can use that knowledge to understand chemical proportional's soil and water
3. they can apply the concept in their daily life relating drugs and industry
4. they can understand the biochemical changes in human and animals and the nature

Semester 1 –inorganic and organic chemistry

1. students know the basic fundamentals of inorganic chemistry
2. students know the chemical behavior of the oxygen and utilization of oxygen in human beings
3. students know the basic fundamentals of organic chemistry and also IUPAC nomenclature

Of both aliphatic and aromatic hydrocarbons and heterocyclic compounds

4. Students know the organo metallic chemistry and utilization of metals and alloys in human beings

Semester 2 –Physical and general chemistry

1. Students know the symmetry, structure, defects stoichiometric and non stoichiometric defects in crystals
2. Students know what are semiconductors, conductors, insulators and applications in photo chemical cells in different operators
3. Students know how gases can be converted into liquids by using Joule Thomson effect and also they know the applications of liquid crystals as LCD devices
4. Students know about stereo chemistry of organic compounds

Semester 3- inorganic and organic chemistry

1. Students know the d block elements ability as magnetism, catalytic activity and ability to form the complexes
2. Students know about formation of metal carbonyls and related compounds by CO ligands
3. Students know about stereo chemistry of nucleophilic substitution reactions and its mechanism
4. Students know about characteristics, reactivity and different uses of carbonyl compounds, carboxylic acids and its derivatives active methylene compounds

Semester-4 – Spectroscopy and physical chemistry

1. Students know that total concept and utilization of spectrophotometer
2. Students know about fundamentals of electronic spectroscopy, infrared spectroscopy, proton magnetic resonance spectroscopy
3. Students totally know colligative properties of solutions

4. Students know concept of electro chemistry and its applications in electronic field

Semester-5– paper-5 :Inorganic,organic and physical chemistry

1. Students know total concept of coordination chemistry ,spectral and magnetic properties of metal complexes and their stability which is most useful in future for their research programme
2. Students know nomenclature , classification , stereo chemistry and different named reactions in nitro , hetero carbons and nitrogen compounds
3. Students know the concept of human life related to thermodynamics
4. Students know the concept of entropy ,free energy and Carnot theorem

Semester-5– paper-6 :Inorganic,organic and physical chemistry

1. Students know the relation of bio-inorganic chemistry both in human and animals lives.
2. Students know the concept ,preparations , proteins and uses of hetero cyclic compounds
3. Students know the biomolecules like carbohydrates to related both human and animal lives
4. Students know the concept of the amino acids and proteins related to both human and animal lives

Semester-6(elective-7B)Environmental chemistry

1. Students know concept of environmental chemistry which is how to related to human beings animals and nature
2. Students totally know the air pollution through acid rains ,photochemical smog, green house effect and depletion of ozone layer
3. Students understanding about concept of water pollution and its prevention
4. Students know concept of chemical toxicology like toxicity of Pb,Hg,AR,and Cd ,toxic effects of pesticides

Cluster -1 (8C1) Organic Spectroscopy techniques

1. Students acquired knowledge about elucidation
2. Students know stereo chemical aspects of molecules can be understood
3. Functional groups and structure can be solved
4. Wide variety of NMR applications in biology

Cluster -2(8C2)Advanced Organic reactions

1. Students know the organic photo chemistry concept through carbonyl chromophore-triplet states ,Jablonsky diagram energy transfer
2. They know the concept of protecting groups and organic reactions
3. Students know the mechanism of synthetic reactions
4. Students know the Norrish cleavages

Cluster -3(8C3) pharmaceutical and medicinal chemistry

1. Students know knowledge about drugs and their activity
2. Students can understand the synthesis of drugs like paracetamol ,penicillin etc
3. Students can understand pharmacokinetics of drugs
4. Students have minimum knowledge regarding pharmacodynamics of drugs

Department of Computer Science
B.Sc (Computer Science)

Programme Specific Outcomes (PSOs)
B.Sc (MPCs)

- 1. Students develop problem solving skills and methods and develop logical tools and models used to solve various real life problems.**
- 2. Students acquire knowledge of traditional and modern techniques of solving algebraic, transcendental equations, differential and integral equations, which have applications in many disciplines.**
- 3. The students attain sound knowledge in the areas of Mechanics, Thermal Physics, Waves and oscillations, optics, electromagnetism, modern physics, solid-state physics for pursuing higher education and research.**
- 4. Ability to design and develop software applications to address real time problems using Programming languages, Databases, Operating Systems Concepts.**

1 SEMESTER

Computer Fundamentals & Photoshop

- CO1: Design layouts for web pages, Paper Adverts, Brouchers, CD Covers, Package Designing
CO2 : Event and Exhibition stall Designs, Pop Ups
CO3: Touch Ups
CO4: Color corrections
CO5 : Paintings, Drawings
CO6 : Converting B/W photo to color

II SEMESTER

Paper-II : PROGRAMMING IN C

.Upon successful completion of the course, a student will be able to:

- CO1: Appreciate and understand the working of a digital computer
CO2: Analyze a given problem and develop an algorithm to solve the problem
CO3: Improve upon a solution to a problem
CO4: Use the 'C' language constructs in the right way
CO5: Design, develop and test programs written in 'C'

III SEMESTER

Paper-III : OBJECT ORIENTED PROGRAMMING USING JAVA

- CO1: Understand the concept and underlying principles of Object-Oriented programming
- CO2: Understand how object-oriented concepts are incorporated into the Java programming language
- CO3: Develop problem-solving and programming skills using OOP concept
- CO4: Understand the benefits of a well structured program
- CO5: Develop the ability to solve real-world problems through software development in high-level programming language like Java
- CO6: Develop efficient Java applets and applications using OOP concept
- CO7: Become familiar with the fundamentals and acquire programming skills in the Java language.

IV SEMESTER

Paper-IV : DATA STRUCTURES

After completing this course satisfactorily, a student will be able to:

- CO1: Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms
- CO2: Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs.
- CO3: Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs
- CO4: Demonstrate different methods for traversing trees
- CO5: Compare alternative implementations of data structures with respect to performance
- CO6: Compare and contrast the benefits of dynamic and static data structures implementations
- CO7: Describe the concept of recursion, give examples of its use, describe how it can be implemented using a stack .
- CO8: Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing.

V SEMESTER

Paper-V: Data Base Management System

On completing the subject, students will be able to:

- CO1: Design and model of data in database.
- CO2: Store, Retrieve data in database.

V SEMESTER

Paper VI : Software Engineering

- CO1: Ability to gather and specify requirements of the software projects.
- CO2: Ability to analyze software requirements with existing tools
- CO3: Able to differentiate different testing methodologies
- CO4: Able to understand and apply the basic project management practices in real life projects
- CO5: Ability to work in a team as well as independently on software projects

VI SEMESTER

Paper-VII: Elective-A

Operating Systems

CO1: Analyze the concepts of processes in operating system and illustration of scheduling of processor

for a given problem instance.

CO2: Identify the dead lock situation and provide appropriate solution so that protection and security

of the operating system is also maintained.

CO3: Analyze memory management techniques, concepts of virtual memory and disk scheduling.

CO4 : Understand the implementation of file systems and directories along with the interfacing of IO

devices with the operating system.

Course Outcomes: Department of Botany

Botany covers the following syllabus with the study of plants, microorganisms. The course structure of this course is very much useful for the botanical industry. The course has plenty of job opportunities in research organisations, herbal products companies, farm management organisations; After the completion of the degree course, botany students can work in the state departments, the botanical survey of India and an environmental protection agency. The department aims to provide the students with excellent knowledge and level of understanding of plant science and allows them to develop a research attitude towards plants. The students can identify the plants with their taxonomic knowledge.

Semester I	<p>Course: Microbial Diversity, Algae and Fungi</p> <p>The course aims at making the students understand the diversity among algae, fungi. The course covers the following areas</p> <p>UNIT- I: MICROBIAL WORLD (Origin and Evolution of Life, Microbial diversity (12hrs) 1. Discovery of microorganisms, the origin of life, spontaneous, biogenesis, Pasteur experiments, germ theory of disease. 2. Classification of microorganisms – R.H. Whittaker’s five-kingdom concept, Carl Woese’s-Domain system. 3. A brief account of special groups of bacteria- Archaeobacteria, Mycoplasma, Chlamydia, Actinomycetes, Rickettsias and Cyanobacteria. UNIT- II: VIRUSES (12hrs) 1. Viruses- Discovery, general account, structure & replication of –T4 Phage (Lytic, Lysogenic) and TMV, Viroids, Prions. 2. Plant diseases caused by viruses– Symptoms, transmission and control measures (Brief account only). 3. Study of Tobacco Mosaic, Bhendi Vein clearing and Papaya leaf curl diseases. UNIT III: BACTERIA (12hrs) 1. Bacteria: Discovery, General characteristics, cell structure and nutrition. 2. Reproduction- Asexual and bacterial recombination (Conjugation, Transformation, Transduction). 3. Economic importance of Bacteria. UNIT –IV Algae (12hrs) 1. General account - thallus organisation and reproduction in Algae. 2. Fritsch classification of Algae (up to classes only) and economic importance. 3. Structure, reproduction and life history of Oedogonium, Ectocarpus and Polysiphonia. UNIT V: FUNGI (12hrs) 1. General characteristics and outline classification (Ainsworth). 2. Structure, reproduction and life history of Rhizopus (Zygomycota), Penicillium (Ascomycota), and Puccinia (Basidiomycota). 3. Lichens-Structure and reproduction; ecological and economic importance. Suggested activity: Seminar, Quiz, debate, collection of diseased plant parts –studying symptoms and identification of the pathogen, collection and study of fresh and marine Algae available in the local area and is designed to</p>
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	<p>familiarise the students with microbes and cryptogams. The students will know the economic importance of fungi, algae, bacteria, viruses.</p>
<p>Semester II</p>	<p>Course: Diversity Of Archaeogoniates & Anatomy</p> <p>The course is an introduction to Diversity Of Archaeogoniates & Anatomy. The course covers the following areas</p> <p>UNIT – I: BRYOPHYTES (12hrs)</p> <ol style="list-style-type: none"> 1. Bryophytes: General characters, classification (up to classes) 2. Structure, reproduction and Life history of Marchantia, and Funaria. 3. Evolution of Sporophyte in Bryophytes. <p>UNIT - II: PTERIDOPHYTES (12hrs)</p> <ol style="list-style-type: none"> 1. Pteridophytes: General characters, classification (up to Classes) 2. Structure, reproduction and life history of Lycopodium, and Marsilea. 3. Heterospory and seed habit. 4. Evolution of stele in Pteridophytes. <p>UNIT – III: GYMNOSPERMS (12hrs)</p> <ol style="list-style-type: none"> 1. Gymnosperms: General characters, classification (up to classes) 2. Morphology, anatomy, reproduction and life history of Pinus and Gnetum 3. Economic importance regarding wood, essential oils and drugs <p>UNIT –I V: Tissues and Tissue systems (12hrs)</p> <ol style="list-style-type: none"> 1. Meristems - Root and Shoot apical meristems and their histological organisation. 2. Tissues – Meristematic and permanent tissues (simple, complex, secretory) 3. Tissue systems–Epidermal, ground and vascular. <p>UNIT – V. Secondary growth (12hrs)</p> <ol style="list-style-type: none"> 1. Anomalous secondary growth in Achyranthes, Boerhaavia and Dracaena. 2. Study of local timbers of economic importance-Teak, Rosewood, Red sanders and Arjun (Tella maddi). <p>This course has been designed to impart an insight into the internal structure and reproduction of the most evolved group of plants, the angiosperms. The students are made to identify the role of anatomy in solving taxonomic and phylogenetic problems. Structural adaptations in plants growing in different environments are also taught.</p>

DEPARTMENT OF ZOOLOGY

B.Sc., Zoology

Programme Outcomes, Programme Specific Outcomes and Course Outcomes

B.Sc., Zoology is offered in this institute in only one combination with other allied branches of life sciences i.e. Botany. The triad in the combination is Botany, Zoology and Chemistry. The institution encourages students to choose core subjects in the UG Program. The students are exposed to the ideas in Zoology like origin of life, evolution, biochemistry of life, reproductive biology, developmental biology, systematics, classification, Physiology, Genetics, the branch in which we study the relationships between the organisms and the environment i.e. ecology, the recently introduced applied Zoology branch, aquaculture. The students are expected to learn the basic ideas to the advanced and applied aspects of the program.

Objective of the Department of Zoology:

Providing quality education and sustaining the same in the program Zoology both within and outside the classroom exposure.

A. Program Outcomes:

- ❖ Students should be able to think on scientific lines with the ideology of scientific rationalism.
- ❖ Student should be able to carry out research to their level to answer questions facing humanity providing the benefit to the human community.
- ❖ Students gain information and transform it into knowledge in respect of basic sciences and become competent.
- ❖ The students understand the concept of life, its structure and composition and compare and contrast the life and non-life.
- ❖ The students should be able to apply the knowledge in this program to other forms of life
- ❖ Students become aware of various life processes, theories, paradigms, concepts and principles in Zoology.
- ❖ Students should be able to ponder over the problems and solutions to the environmental, climate and ecological problems faced by the humanity.
- ❖ The program prepares the students with ability to engage in independent and life-long learning in the pursuit of the knowledge.
- ❖ The students should be able to pursue further education with the foundation laid in this program.
- ❖ The students will correlate the distribution of life forms on the globe with the abiotic factors and their own life systems.

B. Program Specific Outcomes (PSO)

- ❖ Acquire ability to synthesize and apply the knowledge in biosciences and other disciplines to their personal and professional lives
- ❖ Interpret the life; origin of life; evolution of life; the theories of evolution and think of the possibility of extra-terrestrial life

- ❖ Apply knowledge of basic zoology to the branches like medical and veterinary sciences; Apiculture; Aquaculture; Agriculture; Environmental Sciences etc for the benefit of man
- ❖ Classifies the animals based on the knowledge acquired in anatomy, physiology, phylogeny, genetics relating to those animals
- ❖ Gains knowledge in Research Methodology, choosing a problem and conducts the research.
- ❖ Contributes the knowledge to the Indian Economy and, in turn, nation building
- ❖ Gains knowledge and skills on SOPs and protocols of various experiments in Laboratory

C. Course Outcomes (CO)

B.Sc., 1st Year

I Semester – Biology of Non-Chordates

- Identifies a range of invertebrate animals
- Demonstrate anatomical and physiological traits of each taxonomic group
- Enlists the clinical traits of any taxonomic group asked
- Give examples of each taxonomic group asked

I Semester – Biology of Non-Chordates Practical I

- Can recognize the animals based on the morphological features
- Explain the morphology and sexual dimorphism of *Drosophila melanogaster*

II Semester – Biology of Chordates

- Identifies a range of invertebrate animals
- Demonstrate anatomical and physiological traits of each taxonomic group
- Enlists the clinical traits of any taxonomic group asked
- Give examples of each taxonomic group asked

II Semester – Biology of Chordates Practical II

- Can recognize the animals based on the morphological features
- Explain the morphology and sexual dimorphism of *Rana tigrina*

B. Sc., 2nd Year

III Semester – Cell Biology, Genetics & Evolution

- Differentiate between animal and plant cell
- Describe the structure and function of each cell organelle

- Solve the problems on Mendelian ratios
- Enlist the clinical features of Chromosomal abnormalities

III Semester – Cell Biology, Genetics & Evolution Practical III

- Identifies the cell division phases
- Identify the human chromosomal diseases

IV Semester – Embryology, Physiology and Ecology

- Can enlist various morphogenetic movements
- Can anticipate the problems of loss of organizer
- Enlist various digestive enzymes and their functions
- Interpret the role of various Abiotic factors of the ecosystem

IV Semester – Embryology, Physiology and Ecology Practical IV

- Identify various stages in the embryonic development of the frog
- Can identify the source of water by finding the D.O of the sample

B. Sc., 3rd Year

V Semester – Animal Biotechnology V

- Identify the role of DNA in the transmission of the characters
- Describe the mechanism of action of Restriction Enzymes
- Explain the procedure of PCR in the amplification of the DNA
- Differentiate among the blotting techniques

V Semester – Animal Biotechnology Practical V

- Explain the protocol of PCR technique
- Describe the Blotting Technique protocols
- Interpret the procedure of isolation of DNA from E.coli

V Semester – Animal Husbandry VI

- Can make the students know about various breeds of buffaloes and cows of indigenous and exotic breeds
- Can make the students learn about various techniques involved in improving milk production
- Can make the students learn about gene mutations to improve milk and meat production from dairying

V Semester – Animal Husbandry Practical VI

- To make the students know about various indigenous breeds
- To make the students know about various Exotic breeds of higher milk yield
- To make the students know about various diseases of dairy breeds
- To make the students learn about various techniques of Dairying

VI Semester – Immunology Paper VII (A)

- Enlist various organs of immune system
- Enlist various cells involved in the mounting of immune response
- Explain the mechanism of action of Antibodies
- Differentiate between T Helper and T Cytotoxic cells

VI Semester – Immunology Paper VII (A) Practical

- Can isolate and extract the thymus of the rat
- Can do blood grouping of the given blood sample

VI Semester – Principles of Aquaculture VIII B 1

- Define the aquaculture and its principles
- Enlist the cultivable species of fresh water
- Identify the given fish based on the morphological features of the fish
- Distinguish between the freshwater and marine fishes

VI Semester Aquaculture Management VIII B 2

- Differentiate between Bundh and induced breeding
- Describe the structure and function of hatchery for fish and shrimp
- Explain the need for diversity of aquaculture for sustainability
- Identify the role of training in improving production of aquaculture

Post Harvest Technology VIII B3

- Evaluate the fish products with respect to organoleptic, chemical and microbial quality
- Enlist various fish preservation methods
- Describe the protocols of preparation of fish by-products

VI Semester – Principles of Aquaculture VIII B 1 Practical

- Identify the given fish based on the morphological features of the fish
- Identify the disease of the fish based on the already known clinical symptoms

VI Semester - Aquaculture Management VIII B 2 Practical

- Identify the live food organisms of shrimp
- Formulate the feed with the given percentage of protein

Project Work

- Masters the practices of literature review
- Can choose suitable methods for the selected research problem
- Can write a dissertation/synopsis/research paper
- Can employ suitable statistical tools for analyzing the data collected

Semester III	<p>Course: Plant taxonomy & Embryology</p> <p>The course covers the following areas INTRODUCTION TO PLANT TAXONOMY (12hrs) 1. Fundamental components of taxonomy (identification, nomenclature, classification) 2. Taxonomic resources: Herbarium- functions & important herbaria, Botanical gardens, Flora, Keys- single access and multi-access. 3. Botanical Nomenclature- Principles and rules of ICBN (ranks and names; the principle of priority, binomial system; type method, author citation, valid-publication). CLASSIFICATION (12 hrs) 1. Types of classification- Artificial, Natural and Phylogenetic. 2. Bentham & Hooker's system of classification- merits and demerits. 3. Engler & Prantle's system of classification- merits and demerits 4. Phylogeny – origin and evolution of Angiosperms UNIT –III: SYSTEMATIC TAXONOMY-I (12hrs) 1. Systematic study and economic importance of the following families: Annonaceae, Brassicaceae, Rutaceae, Curcubitaceae, and Apiaceae. UNIT –IV: SYSTEMATIC TAXONOMY-II (12hrs) 1. Systematic study and economic importance of plants belonging to the following families: Asteraceae, Asclepiadaceae, Lamiaceae, Euphorbiaceae, Arecaceae, and Poaceae. UNIT – V: EMBRYOLOGY (12hrs) 1. Anther structure, microsporogenesis and development of male gametophyte. 2. Ovule structure and types; Megasporogenesis, development of Monosporic, Bisporic and Tetrasporic types (Peperomia, Drusa, Adoxa) of embryo sacs. 3. Pollination and Fertilisation (outlines) Endosperm development and types. 4. Development of Dicot and Monocot embryos, Polyembryony. The course is an introduction to the methodology and principles of plant systematics and patterns and origin of seed plant diversity. Lectures and practicals provide skills needed to recognise and characterise several plant families and higher taxa that are important elements of the ecosystem. The students are made to understand the key methods and principles of biological classification and nomenclature.</p>
Semester IV	<p>Course: Plant Physiology and Metabolism</p> <p>This course deals with various processes of plants like photosynthesis (particular emphasis on light and dark reactions), respiration, translocation, absorption and nitrogen metabolism. The students also get an insight into the various types of plant movements.</p>
Semester V	<p>Course: Cell Biology, Genetics & Plant breeding</p> <p>The objective of this course is to have an insight into the mechanism of gene expression and its regulation in prokaryotes and eukaryotes. This course covers the following areas UNIT – I Cell Biology: (12hrs) 1. Cell, the unit of life- Cell theory, Prokaryotic and eukaryotic cells; Eukaryotic cell</p>

	<p>components. 2. Ultrastructure and functions of the cell wall and cell membranes. 3. Chromosomes: morphology, organisation of DNA in a chromosome (nucleosome model), Euchromatin and heterochromatin. UNIT – II Genetic Material: (12hrs) 1. DNA as the genetic material: Griffith’s and Avery’s transformation experiment, Hershey – Chase bacteriophage experiment. 2. DNA structure (Watson & Crick model) and replication of DNA (semi-conservative) 3. Types of RNA (mRNA, tRNA, rRNA), their structure and function. UNIT – III Mendelian Inheritance: (12 hrs) 1. Mendel’s laws of Inheritance (Mono- and Dihybrid crosses); backcross and test cross. 2. Chromosome Theory of Inheritance. 3. Linkage: concept, complete and incomplete linkage, coupling and repulsion; linkage maps based on two and three-factor crosses. 4. Crossing Over: concept & significance. UNIT – IV Plant Breeding: (12 hrs) 1. Introduction and Objectives of plant breeding. 2. Methods of crop improvement: Procedure, advantages and limitations of Introduction, Selection, and Hybridisation (outlines only). UNIT – V Breeding, Crop Improvement and Biotechnology: (12 hrs) 1. Role of mutations in crop improvement. 2. Role of somaclonal variations in crop improvement. 3. Molecular breeding – use of DNA markers in plant breeding and crop improvement (RAPD, RFLP). This course helps the students to develop a firm foundation in the fundamentals of Cell Biology, Genetics & Plant breeding</p>
<p>Semester VI</p>	<p>Course: Plant Ecology & Phytogeography</p> <p>This course helps the students to explore the intimate relationship between plants and our lives. The topic covers UNIT – I. Elements of Ecology (12 hrs) 1. Ecology: definition, branches and significance of ecology. 2. Climatic Factors: Light, Temperature, precipitation. 3. Edaphic Factor: Origin, formation, composition and soil profile. 4. Biotic Factor: Interactions between plants and animals. UNIT– II. Ecosystem Ecology (12 hrs) 1. Ecosystem: Concept and components, energy flow, Food chain, Food web, Ecological pyramids. 2. Productivity of ecosystem-Primary, Secondary and Net productivity. 3. Biogeochemical cycles- Carbon, Nitrogen and Phosphorous. UNIT – II Population & Community Ecology (12 hrs) 1. Population -definition, characteristics and importance, outlines –ecotypes. 2. Plant communities- characters of a community, outlines – Frequency, density, cover, life forms, competition. 3. Interaction between plants growing in a</p>

	<p>community. UNIT – IV Phytogeography (12 hrs) 1. Principles of Phytogeography, Distribution (wides, endemic, discontinuous species) 2. Phytogeographic regions of India. 3. Phytogeographic regions of World. 4. Endemism – types and causes UNIT- V: Plant Biodiversity and its importance (12 hrs) 1. Definition, levels of biodiversity-genetic, species and ecosystem. 2. Biodiversity hotspots- Criteria, Biodiversity hotspots of India. 3. Loss of biodiversity – causes and conservation (In-situ and ex-situ methods). 4. Seed banks - conservation of genetic resources and their importance. This course helps the students to develop a firm foundation in the fundamentals of Plant Ecology & Phytogeography.</p>
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Department of English

Programme Specific Outcomes:

The Syllabus of under graduate students aptly suits the needs of students all round development. After completion of graduation the students will be able to

- Speak English with fluency
- Master grammatical Skill and vocabulary as well
- Can read English prose and poetry and comprehend the matter
- Can write good English
- Can acquire good communication skills such as writing reading etc.

Course outcomes:

Semester – I “English Portal”

After going through the book learners will be able to read and comprehend literary pieces improve vocabulary and grammatical ability use appropriate words and structures required for situation

Semester II “A Spectrum of Language Skills”

After completion of the book students will be able to read and comprehend a text on their own, be able to speak English meaning fully. Grammatical ability enhancement. Can write different form and formats of written correspondence

Semester II

C.S.S – I “Communication and Soft Skills”

After completion of this text book the student will learn classification of words and hold command on vocabulary and use words effectively. One can learn Grammar, one can learn listening skills and reading skills as well

Semester III “English for cognitive and communicative Skills”

This book attempts to achieve these aims by including a variety of Literary and non literary . one example is the inclusion of an interview with a well known anthropologist bringing her knowledge to computers. The texts cover a wide range of human experience and after a variety of perspectives of a father talking to a son and trying to imbibe his unbiased world view or a son learning the basics of life from a father only to strike out on his own there are contemporary authors and writers from a bygone age. In short we have tried to create a reading experience ad complete and as rounded as possible

Semester III “Skill pro ” CSS – II

The book deals with the important aspects of pronunciation and accent, conversation skills for very day use and speaking skills with reference to debate, role plays, presentation skills, group discussions and interview skills.

Semester – IV “Skill Pro” CSS – III

The course book uniquely provides systematic and highly relevant materials to the student community.

Promises a right view about soft skills and writing skills.

Promotes personal growth as well as prepares for success.

Encourages the students to look into themselves personally through self assessment tests.

Inspires self learning through post reading activity and investigative spirit.

Catches the spirit of literature to understand soft skills through literary texts.

DEPARTMENT OF HINDI

Program Out- come

1. 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 Hindi Kathalok.
2. . Knowledge about reality of middle class: The writers like Prem chand ,Nirala , Dinakar made an effort to highlight the mentality of middle class by depicting the actions and the behavior of the persons of middle calss in their writings . the students got scope to gained knowledge about the reality of middle class expressed in the writings of Prem chand through lectures followed by group discussions sessions .
3. Environmental Conscisious: The students gained knowledge about the concept of Paryavaran and its role in making human life healthy by paper presentation (student seminar) and Essay writing .

Programm Specific Outcome

1. Understanding the relation between the society and literature and analyze the role played by Hindi literature in past and present.
2. Developing skill of writing official letters in functional Hindi.
3. Developing philoshy of life inspiring by the vision of eminent writers.
4. Gaining socio cultural consciousness.

The outcomes of Course:

Sem-1

1. Develop competence in literary forms (Hindi & Fiction)
2. Develop Reading, Writing & Communication Skills in Hindi

Sem-2

1. The aim of the course is to guide the students to the world of Hindi fiction (Short stories).
2. To develop the capacity of creative process and communication skills.

Sem-3

1. The aim of the course is to sensitize the students to the aesthetic aspects of literary appreciation and to introduce Hindi Poetry.
2. Students able to understand and work in Functional Hindi
3. To equip the students for the jobs of Hindi translators and Teachers.

DEPARTMENT OF POLITICAL SCIENCE

Program Outcomes

To see that all the students, with rural background are empowered with hard and soft skills and with secular and human values that contribute for bettering the prospects of student's career. To develop and promote the talents of the students in diversified fields in strict conformity with basic human values so that such students would become an investment for a prosperous society. To impart Qualitative Knowledge and to develop communicative Skills of students besides Indian political set up. To create and enhance awareness in the students in order to prepare them to meet the challenges of the competitive world.

Basic Concepts of Political Science

This paper gives knowledge about politics. Citizen's cultures and nationality also known by this topic. The individual made as responsible persons through understanding fundamental rights. Students were able to understand the social rights.

Political Institutions

(Concepts, Theories and Institutions)

It enables the students to acquire knowledge about constitution. They were made to understand various forms governments in the world. The paper also provides information on Indian judiciary among student community.

Indian Constitution

This paper gives overall understanding about the Indian freedom movement. They were acquiring knowledge by the preparation constituent Assembly. By studying this paper, students known feature of Indian constitution and unitary and federal features. It also provides information on Tension areas between union and state governments.

Indian Political Process

The students can understand various social movements in India after independence. They will also know the role of religion and caste in Indian politics. Political parties' role in Indian democracy has been known by studying this paper. It has provided information on voting behavior people.

Indian Political Thought

As per as Indian Political Thought paper concerned, students will be known about Indian political thinkers. It has been giving social reform movement. Students acquire knowledge how Britishers were made India as their colony and exploitation.

Western Political Thought

With regard to western Political thought, students are aware about political thinkers from world. It also gives information about the evolution political science. They have aware how the state formed and its role in shaping the people.

Principles of Public Administration

Students were made to understand the Indian Administration role in providing various services to people. It also helps the students to gain information about principles of organization and their role in the administration. This paper also gives motivation role in the organization.

DEPT. OF PUBLIC ADMINISTRATION
COURSE OUT COMES : 1ST B.A. 1ST SEMESTER

COURSE TITLE: THEORIES AND APPROACHES OF PUBLIC ADMINISTRATION.

COURSE OUT COMES.

TO UNDERSTAND THE EVOLUTION OF PUBLIC ADMINISTRATION.

- The student comprehends weberian model of bureaucracy.
- The student is able to understand New Public Administration.

- The Socio-Psychological Approaches enable the student to understand the human side of the organisation and its dynamics.

- The student understands the Concepts of Public and Private Administration and their relationship.

- The theories and approaches of Public Administration gives the student a comprehensive understanding of the functioning of the Organisation at large.

COURSE TITLE: INDIAN ADMINISTRATION. 2ND B.A. 3RD SEMESTER

COURSE OUT COMES:

- The course gives an over view of the Structure and Functioning of the Indian Administrative System.

- The student understands the Evolution of the Indian Administrative System and its Historical background.

- An overall understanding of the Central Administration with an emphasis on the Constitutional Authorities like the President, The Vice President , The Prime Minister and the Council of Ministers is clearly an out come of the Course.

- The Student gets an indepth idea of the Union-State Relations and Federal Structures like All India Services, Finance Commission etc.

- A clear understanding of the functioning of the Public Enterprises in India along with the functioning of the State Governments is an important out come of the Course.

- The Student is acquainted with District Administration and the Changing Role of the District Collector along with an understanding of the Local Administration.

- The Student comprehends the importance of the Administrative Accountability in the form of Legislative and Judicial control over Administration.

DEPT. OF PUBLIC ADMINISTRATION. 2ND B.A. 4TH SEMESTER

COURSE TITLE: INDIAN ADMINISTRATION- EMERGING ISSUES

COURSE OUT COMES:

- ❖ The Course gives the Student an over view of the need and the importance of Ombudsman like Lokpal and Lokayukta in India and also Consumer Rights and Consumer protection Forums.
- ❖ The RIGHT TO INFORMATION ACT,2005 and the Human Rights commissions in India give the student the awareness about protection of Rights of the Citizens guaranteed by the Constitution of India.
- ❖ The student is made aware of the Welfare Mechanism for the execution of the Welfare Programmes in India.
- ❖ The student learns about the various Administrative Reforms Commissions and their recommendations.
- ❖ Emerging Issues like Disaster Management and E-Governance are very useful to the student.
- ❖ A study of Public Private Partnership(PPP) and voluntary sector makes the student aware of these newly Emerging issues.
- ❖ The student gains the knowledge of Public Corporations and Independent Regulatory Commissions like TRAI, SEBI, IRDAetc in regulating the service sector in India.

Programme outcomes: B.Com

- Equip with the knowledge of accounting process and preparation of final accounts of sole trader
- Can Learn economics in terms of business.
- Can Recognize market failure and the role of government in dealing with those failures
- Can Understand about the functioning of Stock Exchanges & Mutual funds.

ACCOUNTING - I (GENERAL & FINANCIAL COMPUTER)

Upon successful completion of this course, the student will be able to:

- Acquire conceptual knowledge of basics of accounting •

Identify events that need to be recorded in the accounting records

- Develop the skill of recording financial transactions and preparation of reports in accordance with GAAP
- Describe the role of accounting information and its limitations
- Equip with the knowledge of accounting process and preparation of final accounts of sole trader
- Identify and analyze the reasons for the difference between cash book and pass book balances
- Recognize circumstances providing for increased exposure to errors and frauds
- Determine the useful life and value of the depreciable asset

BUSINESS ECONOMICS (GENERAL & COMPUTER)

Upon successful completion of this course, the student will be able to:

- Learn economics in terms of business.
- Describe the nature of economics in dealing with the issue of scarcity
- Perform supply and demand analysis to analyze the impact of economic events on Markets
- Analyze the behaviour of consumers in terms of the demand for products
- Evaluate the factors affecting firm behaviour, such as production and costs
- Analyze the performance of firms under different market structures,
- Recognize market failure and the role of government in dealing with those failures
- Understand the dynamics of how the markets work
- Use economic analysis to evaluate controversial issues and policies

BUSINESS ORGANIZATION (GENERAL & COMPUTER)

Upon successful completion of this course, the student will be able to:

- Understand the scope of Business, and its importance.
- Describe the Social Responsibility of Business towards the society
- Explain business ethics as an integral part of every business organization
- Identify different forms of business organizations viz; Sole Proprietorship, Partnership, Joint Hindu Family Business & Co-operative Organizations.
- Understand a Joint Stock Company and various formalities to promote a Company
- Identify the various vital documents of a company
- Learn various sources Industrial Financial resources and the means to raise them
- Understand about the functioning of Stock Exchanges & Mutual funds.

FINANCIAL ACCOUNTING - II (GENERAL & COMPUTER)

At the end of this course, student should be able to:

- Appreciate the need for negotiable instruments and procedure of accounting for bills honoured and dishonoured
- Differentiate Trade bills from Accommodation Bills
- Understand the concept of Consignment and learn the accounting treatment of the various aspects of consignment
- Distinguish Joint Venture and Partnership and to learn the methods of maintaining records under Joint Venture
- Distinguish between Single Entry and Double Entry
- Know the ascertainment of profit under Single Entry system.
- Understand the meaning and features of Non-Profit Organisations
- Learn to prepare Receipts & Payment Account, Income & Expenditure Account and Balance Sheet for Non-Profit Organizations

ADVANCED ACCOUNTING (GENERAL & COMPUTERS)

Upon successful completion of this course, a student will be able to:

- Prepare financial accounts for partnership firms in different situations of admission, retirement, death and insolvency of the partners.
- Prepare financial statements for partnership firm on dissolution of the firm.
- Employ critical thinking skills to understand the difference between the dissolution of the firm and dissolution of partnership.

Understand the various types of capital structure of the company and their representation in the balance sheet.

- Evaluate the different situations of capital issue to public like issue at premium, issue at discount, forfeiture of shares etc.
- Demonstrate an understanding about the profits of the company and their division.
- Preparation of financial accounts with profits before incorporation.
- Understand the valuation of shares and goodwill and prepare financial statements

INCOME TAX-I (GEN&COMPUTER)

Upon successful completion of this course, a student will be able to:

- Acquire the complete knowledge of basic concepts of income tax
- Understand the concept of exempted incomes.
- Understand the provisions of agricultural income
- Calculate Residential status of a person.
- Identify and comply with the relevant provisions of the Income Tax Act as it relates to the income tax of individuals
- Compute the income under the head "Income from Salary"
- Compute income under the head "Income from House Property"
- Compute income under the head "Income from Business or Profession"

BUSINESS STATISTICS-I (GENERAL & COMPUTERS)

On successful completion of this course, student should be able to:

- Understand basic statistical concepts such as statistical collection, statistical series, tabular and graphical representation of data
- Calculate measures of central tendency, dispersion and asymmetry, correlation and regression analysis
- Apply knowledge to solve simple tasks using computer

- Independently calculate basic statistical parameters viz- mean, measures of dispersion, correlation coefficient, indexes)
- Based on the acquired knowledge to interpret the meaning of the calculated statistical indicators
- Choose a statistical method for solving practical problems
- Highlight statistical relationships between variables in data sets
- Predict values of strategic variables using regression and correlation analysis

CORPORATE ACCOUNTING (GENERAL & COMPUTERS)

Upon successful completion of this course, a student will be able to:

- Understand the regulatory environment in which the companies are formed and operate
- Have a solid foundation in accounting and reporting requirements
- of the Companies Act and relevant Indian Accounting Standards
- Have a comprehensive understanding of the advanced issues in accounting for assets, liabilities and owner's equity
- Understand the treatment regarding issue of bonus shares and treatment of prior period profits
- Account for mergers and amalgamations
- Value goodwill and shares under various methods
- Draft Final Accounts for Manufacturing concerns, Banks and Insurance Companies
- Perform computerized accounting using Tally package.

COST AND MANAGEMENT ACCOUNTING (GENERAL)

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

- Understand various costing systems and management systems
- Analyse and provide recommendations to improve the operations of organisations through the application of Cost and Management accounting techniques
- Evaluate the costs and benefits of different conventional and contemporary costing systems
- Differentiate methods of schedule costs as per unit of production
- Differentiate methods of calculating stock consumption
- Identify the specifics of different costing methods
- Analyze cost-volume-profit techniques to determine optimal managerial decisions.
- Apply cost accounting methods for both manufacturing and service industry

BUSINESS LAW(GENERAL & COMPUTERS)

Upon successful completion of Business Law the student will be able to:

Demonstrate an understanding of the Legal Environment of Business.

- Communicate effectively using standard business and legal terminology.
- Demonstrate recognition of the requirements of the contract agreement
- Demonstrate understanding of contract consideration and capacity
- Demonstrate recognition of the genuineness of assent in contract formation.
- Demonstrate understanding of legality and Statute of Frauds in contracts
- Identify contract remedies
- Demonstrate recognition of transactions involving the Sales of Goods Act
- Demonstrate recognition of consumer protection and intellectual property rights
- Understand the various provisions of Company Law
- Demonstrate the use analytical skills in case study analysis.

AUDITING (GENERAL & COMPUTERS)

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

- Understand the environment and types relating to the auditing function
- Identify the steps needed to prepare for an audit
- Understand general audit terminology
- Plan an audit taking into account concepts of evidence, risk and materiality
- Know the steps for performing an audit
- Know how to prepare and use working papers, such as checklists
- Evaluate internal controls;
- Know how to report results of audit
- Apply auditing practices to different nature of Concerns
- Equipped to draft business reports and letters

E-COMMERCE (GENERAL & COMPUTERS)

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

- Understand the fundamental and importance of E-commerce

- Gain knowledge of different types in E-commerce: C2C,C2B,B2C,B2B,G2C
- Analyze the impact of E-commerce on business models and strategy
- Learn about the infrastructure for E-commerce
- Learn the key features of Internet, Intranets, Extranets and web technology and how they relate to each other.
- Understand EDI as an exchange of business documents in a standard electronic format between business partners.
- Know the legal issues and privacy in E-Commerce
- Assess the electronic payment systems
- Be familiarize with E-Marketing &E-Advertising in E-commerce.

COST ACCOUNTING (COMPUTERS)

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

- Imbibe conceptual knowledge of cost accounting.
- Understand the significance of cost accounting in the modern economic environment
- Select the costs according to their impact on business
- Differentiate methods of schedule costs per unit of production
- Differentiate methods of calculating stock consumption
- Identify the specifics of different costing methods
- Interpret the impact of the selected costs
- Apply cost accounting methods to evaluate and project business performance
- Demonstrate mastery of costing systems, cost management systems, budgeting systems and performance measurement systems. ****

MANAGEMENT ACCOUNTING AND CONTROL(computer)

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

- Apply management accounting and its objectives in facilitating decision making.
- Apply and analyze different types of activity-based management tools through the preparation of estimates
- Analyze cost-volume-profit techniques to determine optimal managerial decisions.
- Perform cost variance analysis and demonstrate the use of standard costs in flexible budgeting.
- Prepare analyses of various special decisions, using relevant management techniques.

- Calculate various accounting ratios, reports and relevant data.
- Prepare a master budget and demonstrate an understanding of the relationship between the components.
- Prepare Cash Flow and Funds Flow statements this helps in planning for intermediate and long-term finances.

PROGRAMME OUTCOMES OF B A: ECONOMICS

Programme Outcomes of Bachelor of Arts: ECONOMICS:

The UG student entered into the Arts subjects the expectation of the student is very high in the economic sense of society as whole, how can we survive with the limited resources in their real life to realistic goal with the B A group:

1. Sense of Society on the economical basis
2. Critical temper
3. Creative ability of assets in the social sense
4. Realisation of social activities

Programme Specific outcomes of ECONOMICS:

1. The conditions how the human acts as rational thinking of the economy
2. How the resources are utilised
3. How the choice of good existed in the crunch of resources
4. How can they manage the resources with unlimited desires

Course Outcome of ECONOMICS:

B A-I: Micro Economics-Consumer Behaviour

- ✓ Understanding of the scope of Economics
- ✓ Features and characters of Micro and Macro Economics
- ✓ How to learn the spending process in micro level of Economics
- ✓ How we reach the equilibrium in the consumer behaviour

B A-II Micro Economics- Production and Price Theory

- ❖ Awareness about the production process
- ❖ How the students can follow the concepts of homogeneous production
- ❖ How can maintain the revenue and expenditure
- ❖ Understanding the market structure and price determination

BA - III: : Macro Economics - Concepts of Macro Economics

- ✓ How can the solutions about the trade cycle
- ✓ Understand the basic features of macro analysis
- ✓ Awareness about the features of LPG models
- ✓ Comprehensiveness about the Global economy

BA -IV: Macro Economics - Banking, and International Trade:

- Understanding about the recent trends in banking sector
- Money market performance awareness

- Knowledge about the Non-banking financial institutions
- Comprehensiveness about the Global economy

BA -V: Indian Economy:

- Outcome of the Indian basic features and characteristics
- Process about the basic knowledge about the Indian Agriculture
- Basic mobilisations about the inter related industrial sector
- Understanding the features of 3 sector, interlink age about the economy

BA -VI: Andhra Pradesh Economy

- Intension of the newly formed sectors in the AP Economy
- Progress and performance of the Agriculture in the economy
- Knowledge acquiring about the newly established sector recent days
- How the Government of AP implementing the schemes awareness

BA -VII: Agricultural Economics:

- Basic awareness about the nature and scope of Agricultural Economics
- Technical and institutional awareness about farm production
- Comprehensiveness about the new strategies in recent economy
- How to reach growth and the strategies in the business enterprises

BA -VIII (Sem-VIA1): Agribusiness Environment in Andhra Pradesh

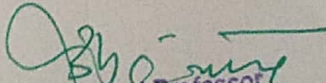
- ❖ Identifications of basic features of Agribusiness environment
- ❖ Understanding of the basic concepts of Dynamics of agriculture
- ❖ Knowledge about the Agricultural finance
- ❖ Financial support to the agriculture and industry

BA -IX (Sem-VI-A2): Agricultural Output Marketing

- ⚡ Identifications of basic features of Agribusiness environment
- ⚡ Knowledge about the Agricultural finance
- ⚡ Basic awareness about the nature and scope of Agricultural Economics
- ⚡ Process about the basic knowledge about the Indian Agriculture

BA -X (Sem-VI-A3): Agricultural Input Marketing:

- ✓ Clarifying the crop sector and livestock sector and inter-linkage
- ✓ Understanding the market structure and price determination
- ✓ Technical and institutional awareness about farm production
- ✓ Knowledge about the Agricultural finance


Assistant Professor
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తెలుగు విభాగము

డిగ్రీ మొదటి సంవత్సరము బి.ఎ||బి.కాం||బి.ఎస్సి|| మొదటి సెమిస్టరు

ప్రాచీన కవిత్వము - ఆధునిక కవిత్వము - వ్యాకరణము

- తెలుగు భాష ఔన్నత్యమును తెలియజేయుట.
- నన్నయ,తిక్కన రచనలలోని ఔచిత్యాన్ని,రసాభ్యుచిత బంధాన్ని తెలుసుకొని రచనా మార్గంలోకి అడుగిడుట .
- దాయాదులపోరు వంశనాశనానికే అని తెలుసుకొనుట.
- పరిణామ క్రమంలో కవిత్వంలో వచ్చిన మార్పులు(పద్యం,గద్యం,వచన కవిత,గేయ కవిత మొ ||)
- స్త్రీని అవమానిస్తే నాశనం తప్పదు.
- మాండలిక భేదాలను తెలుసుకొనుట.
- గ్రామీణ వాతావరణంలోని అనుబంధాలు.
- రాయలసీమ లోని కరవు, ప్రజల దుర్భర జీవితం.
- భాషకు వ్యాకరణం ప్రధానం.
- పదనిర్మాణానికి,వాక్య నిర్మాణానికి వ్యాకరణం ఆవశ్యకం.

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డిగ్రీ మొదటి సం|| బి.ఎ.||బి.కాం.||బి.ఎస్సి.|| ద్వితీయ సెమిస్టరు

ప్రాచీన సాహిత్యము - ఆధునిక సాహిత్యము - ఉపవాచకము

- ఇతిహాసాన్ని పరిచయం చేస్తూ భక్తి మార్గాన్ని వివరించుట.
- మానవుల వలెనే పశు పక్ష్యాదులుకు దైవభక్తి ఉంటుందని తెలుసు కొనుట.
- తెలుగు పలుకుబడులు,లోకోక్తుల చమత్కారాన్ని తెలుసుకొనుట
- వివాహ రకాలు(గాంధర్వం,బ్రాహ్మం,రాక్షసం)
- మానవతావాదాన్ని అనుసరించుట.
- రాజుల అహంకారము - కవి ధైర్యము.
- ప్రకృతి పరిరక్షణకై హరిత హోరానికి శ్రీకారం చుట్టడం.
- కరవు పరిస్థితులు రైతు స్థితిగతులు .
- మారుతున్న పల్లె వాతావరణం.
- స్త్రీలను మభ్యపెడుతున్న రాజకీయాలు.
- ఆచారాలు, సంప్రదాయాలు రక్షణ.
- నాటక ప్రదర్శనలలో కాలక్రమములో వచ్చిన మార్పులు .

డిగ్రీ రెండవ సం|| బి.ఎ||బి.కాం||బి.ఎస్సీ|| 3వ.సెమిస్టరు.

ప్రాచీన కవిత్వము - ఆధునిక కవిత్వము - ఉపవాచకము.

- రాక్షస రాజైనా బలిచక్రవర్తి భక్తి తత్పరత .
- గురువు శిష్య రక్షణకై పడే తాపత్రయం.
- స్నేహం గొప్పతనాన్ని తెలుసుకొనుట.
- ఎంతటి వర గర్వితుడైనా పుట్టినవాడు గిట్టక తప్పదు.
- కృత యుగంలో మానవుల జీవితం
- మన పండుగలు,సాంప్రదాయాలు ప్రాముఖ్యత తెలుసుకొనుట.
- తెలుగు భాష ప్రాచీనత,గొప్పతనాలను తెలుసుకొనుట.
- వ్యక్తిత్వవికాసభావాలనుపెంపొందించుట(ఆశావాదం,సమయపాలన మొ||
- సమాజంలోని వివిధ రకాలైన వ్యక్తులు వారి స్వభావాలు .

ఈ మూడు సెమిస్టర్లలో తెలుగు చదవడం వలన విద్యార్థి :-

- తెలుగు భాష ప్రాచీనతను, గొప్పతనాన్ని తెలుసుకుంటాడు.
- తెలుగు సాహిత్యం మీద మక్కువ పెంచుకుంటాడు.
- రచనచేయడానికి ప్రయత్నం చేస్తాడు.
- మన సంస్కృతి సాంప్రదాయాలను అవగాహన చేసుకుంటాడు.
- వ్యక్తిత్వ వికాసాన్ని పొందుతాడు.
- సాహిత్యాభిరుచి, చదవాలనే ఆసక్తి పెంచుకుంటాడు.
- కులరహిత సమాజం కోసం పాటుపడతాడు.
- ప్రకృతి పరిరక్షణకు నడుం కడతాడు.