S.G.A. GOVERNMENT DEGREE COLLEGE, YELLAMANCHILI
VISAKHAPATNAM (DIST.), ANDHRA PRADESH – 531055, INDIA.

Affiliated to ANDHRA UNIVERSITY, VISAKHAPATNAM.

Programme outcomes

Faculty: Science
Students graduating with a **Bachelor of Science (BSc)** should be able to
PO1. Acquire the knowledge in different subjects such as Mathematics, Physics, Chemistry, Botany, Zoology, Computer Science etc.,
PO2. Handle scientific equipment and acquire the skills to analyse the experimental results.
PO3. Imbibe the human values, professional ethics, and social values that will make him a citizen with social consciousness.
PO4. Demonstrate the communication skills, soft skills and professional skills.
PO5. Get exposure to social issues and social evils by participating in various community Development activities.
PO6. Inculcate the scientific temperament.

Programme specific outcomes
Students graduating with **BSc (M.P.C)** should be able to
PSO1. Demonstrate proficiency in mathematics and the mathematical concepts needed for a proper understanding of Physics and Chemistry.
PSO2. Demonstrate knowledge in key concepts and important theories and principles in the three core subjects (Mathematics, Physics and Chemistry) and can apply this knowledge to analyse a variety of physical and chemical phenomena.
PSO3. Use the knowledge gained to do measurements using the instruments and apparatus and can analyse the measurements to draw valid conclusions.
PSO4. Can compete in entrance examinations to enter in to PG courses and in competitive examinations to get employment.

Students graduating with **BSc (B.Z.C)** should be able to
PSO1. Demonstrate knowledge in key concepts and important theories and principles in the three core subjects (Botany, Zoology and Chemistry) and can apply this knowledge to analyse a variety of phenomena.
PSO2. Understand the process of evaluation, basic concepts of cell biology, Biotechnology, microbiology, developmental biology of plants, diversity of plants, applications of microorganisms etc.,
PSO3. Compete in entrance examinations to enter into PG courses and in competitive examinations to get good employment.
PSO4. Appreciate the interdisciplinary nature of chemistry and applications of principles of chemistry in biology.

Students graduating with **BSc (M.P.Cs)** should be able to
PSO1. Compete in entrance examinations to enter into PG courses and in competitive examinations to get good employment.
PSO2. Demonstrate proficiency in mathematics and can apply the knowledge gained in mathematical concepts in Computer science
PSO3. Gain knowledge in multiple programming languages like C, Java etc.
Pso4. Demonstrate knowledge gained about Systems fundamentals, including architectures and organization, operating systems, networking and communication, parallel and distributed computation, and security.

DEPARTMENT OF CHEMISTRY

Course Outcomes - B.Sc. Chemistry

Course-I

After completion of these courses students should be able to;
CO1. Write down the synthesis and properties of Diborane, silicones, hydrazine and hydroxylamine.
CO2. Demonstrate knowledge gained in the preparation, classification and properties of organometallic compounds.
CO3. Describe different types of organic reagents, inductive effect and its applications
CO4. Describe the classification of organic reactions.
CO5. Write down the methods of synthesis and properties of alkenes
CO6. Write down the methods of synthesis and properties of alkynes
CO7. Describe the concepts of resonance, aromaticity, general mechanism of electrophilic substitution reaction, ring activating and deactivating groups.
CO8. Carry out the analysis of simple salt containing one anion and cation.

Course-2

After completion of these courses students should be able to;
CO1. Describe the knowledge gained in the key concepts of solid state chemistry.
CO2. Write down the critical phenomena and relationship between critical constants and van waals constants.
CO3. Understand differences between liquid crystal and solid/liquid, classification of Liquid crystals and applications of Liquid crystals.
CO4. Write down the Henry’s law, Raoult's law, Azeotropes, Nernst distribution law and its applications.
CO5. Understand the definition, preparation, properties and applications of colloids
CO6. Describe the concepts of adsorption, types and theories of adsorption.
CO6. Describe the concepts of Valence bond theory, hybridization and Molecular orbital theory.
CO7. Gain knowledge about the key aspects in stereochemistry
CO8. Carry out the analysis of mixture salt containing two anions and two cations.

Course-3

After completion of these courses students should be able to;

CO1. Describe the characteristics of d-block elements, magnetic properties and catalytic properties of d-block elements and their ability to form complexes.

CO2. Write down the theories of bonding in metals.

CO3. Understand EAN rule, classification of metal carbonyls, structures and shapes of metal carbonyls.

CO4. Describe the electronic structure and oxidation states of Lanthanides, lanthanide contraction, electronic structure and oxidation states of actinides.

CO5. Understand Nomenclature and classification of alkyl (into primary, secondary, tertiary), aryl, aryl alkyl, allyl, vinyl, benzyl halides and Nucleophilic aliphatic substitution reactions.

CO6. Describe the knowledge gained on nomenclature and classification of hydroxy compounds, Physical properties, Chemical properties and identification of alcohols.

CO7. Write down the Nucleophilic addition reactions, oxidations and analysis of aldehydes and ketones.

CO8. Describe the nomenclature, classification, physical properties and chemical properties of Carboxylic acids.

CO9. Carry out the analysis of Fe (II) and Cu (II) using titrimetry and reactions of the functional groups present in organic compounds.

Course-4

After completion of these courses students should be able to;

CO1. Describe the Beer-Lambert's law and its limitations and applications.

CO2. Understand the basic concepts of electronic spectroscopy.

CO3. Write down the basic concepts of Infrared spectroscopy and NMR spectroscopy.

CO4. Understand the basic concepts and importance of colligative properties and abnormal Colligative properties.

CO5. Differentiate between specific conductance and equivalent conductance

CO6. Understand the concepts of Kohlrausch's law, Debye-Huckel-Onsagar's equation for strong electrolytes, transport number and its determination and conductometric titrations.

CO7. Write down about single electrode potential, Reversible and irreversible cells, Nernst Equation, determination of EMF of cell and Potentiometric titrations.

CO8. Describe the basic concepts in Phase rule and its application to different systems.

CO9. Carry out the Conductometric titrations and determine the Critical solution temperature (CST) of Water-Phenol system

Course-5

After completion of these courses students should be able to;

CO1. Describe bonding theories, IUPAC nomenclature and Isomerism of coordination compounds.

CO2. Write down the stability, magnetic properties and methods to determine the composition of complex compounds.

CO3. Describe the nomenclature, preparation and reactivity of complex compounds.

CO4. Gain knowledge about the nomenclature, preparation reactions of amines.

CO5. Understand the laws of thermodynamics, concepts of entropy, enthalpy and internal energy, Kirchoff's equation and carnot cycle.
C06. Carry out the Analysis of an organic compound through systematic qualitative procedure.

Course-6

After completion of these courses students should be able to;
CO1. Describe the concepts in Chemical kinetics and photochemistry.
CO2. Write down the aromatic character and substitution reactions in Furan, Thiophene, Pyrrole and Pyridine.
CO3. Write down the cyclic structure of Glucose and Fructose and interconversions in monosaccharides.
CO4. Gain knowledge about the classification, preparation and properties of amino acids and structure of proteins.
CO5. Describe the Theories of Trans effect and its applications
CO6. Determine the viscosity and surface tension of an organic liquid and analyse the results
CO7. Determine the rate constant for acid catalysed ester hydrolysis reaction.

Course-7

After completion of these courses students should be able to;
CO1. Describe the basic concepts of Chromatography and principles of Chromatography
CO2. Write down the theory and applications of different chromatographic techniques.
CO3. Gain knowledge about different types of solvent extraction and applications of solvent extraction.
CO3. Write down the principles and applications of ion exchange method.
CO4. Describe different types of titrations with examples
CO5. Write down the concepts of co-precipitation and post precipitation.
CO6. Determine Zn and Mg using EDTA by complexometric titration.

Course-8

After completion of these courses students should be able to;
CO1. Write down about spin-spin coupling and AX, A2X systems
CO2. Describe advanced concepts in NMR spectroscopy like Decoupling, NOE etc.,
CO3. Carry out the quantitative determination of metal ions using Beer- Lambert's law.
CO4. Describe basic concepts in electronic spectroscopy
CO5. Write down the basic principles and applications of EPR spectroscopy.
CO6. Carry out the synthesis of Azo dye and Aspirin.

Course-9

After completion of these courses students should be able to;
CO1. Describe the basic concepts in Organic photochemistry.
CO2. Gain knowledge about the various protecting groups used in in organic synthesis.
CO3. Write down the mechanisms of named reactions like Mannich Reaction, Shapiro reaction, Stork-enamin Reaction, Baylis–Hillman reaction etc.,

CO4. Carry out the determination of Nitrogen and Halogens in a given organic compound using green protocol
CO5. Carry out the Diels-Alder reaction using Green Procedure.
CO6. Write down the mechanisms of named coupling reactions like Heck coupling.

Course-10
After completion of these courses students should be able to;
CO1. Describe the terminology used in Pharmaceutical chemistry
CO2. Write down the nomenclature, and classification of drugs based on structures and therapeutic activity.
CO3. Gain knowledge about various Chemotherapeutic drugs and Psycho therapeutic drugs.
CO4. Describe about the pharmocodynamic drugs and HIV-AIDS drugs.
CO5. Carry out the determination of Iron using Potassium dichromate by Potentiometric titration
CO6. Demonstrate the applications of Beer-Lambert's law using Spectrophotometer.

DEPARTMENT OF PHYSICS

Course Outcomes - B.Sc. Physics

Program Learning Outcomes in B.Sc. (Physics)

The student graduating with the Degree in B.Sc. Courses in Physics is expected to

- Acquire
- ✓ A fundamental or systematic understanding of the academic field of Physics, its different learning areas and applications in basic Physics like Astrophysics, Material science, Nuclear and Particle Physics, Condensed matter Physics, Atomic and Molecular Physics, Mathematical Physics, Analytical dynamics, Space physics, and its linkages with related disciplinary areas like Chemistry, Mathematics, Life sciences, Environmental sciences, Atmospheric Physics, Computer science, Information Technology.
- ✓ Procedural knowledge that creates different types of professionals related to the disciplinary area of Physics, including professionals engaged in research and development, teaching and government/public service.
- Demonstrate the ability to use skills in Physics and its related areas of technology for formulating and tackling Physics-related problems and identifying and applying appropriate physical principles and methodologies to solve a wide range of problems associated with Physics.

- Recognize the importance of mathematical modelling simulation and computing, and the role of approximation and mathematical approaches to describing the physical world.
- Plan and execute Physics-related experiments or investigations, analyze and interpret data/information collected using appropriate methods, including the use of appropriate software such as programming languages and purpose-written packages, and report accurately the findings of the experiment/investigations while relating the conclusions/findings to relevant theories of Physics.
- Demonstrate relevant generic skills and global competencies such as

✓ problem-solving skills that are required to solve different types of Physics-related problems with well-defined solutions, and tackle open-ended problems that belong to the disciplinary-area boundaries;
✓ investigative skills, including skills of independent investigation of Physics-related issues and problems;
✓ communication skills involving the ability to listen carefully, to read texts and research papers analytically and to present complex information in a concise manner to different groups/audiences of technical or popular nature;
✓ analytical skills involving paying attention to detail and ability to construct logical arguments using correct technical language related to Physics and ability to translate them with popular language when needed;
✓ ICT skills;
✓ personal skills such as the ability to work both independently and in a group.

- Demonstrate professional behaviour such as

✓ being objective, unbiased and truthful in all aspects of work and avoiding unethical, irrational behaviour such as fabricating, falsifying or misrepresenting data or committing plagiarism;
✓ the ability to identify the potential ethical issues in work-related situations;
✓ appreciation of intellectual property, environmental and sustainability issues;
✓ promoting safe learning and working environment.

Course Learning Outcomes (CLO) of B.Sc. (Physics)

S. No.	Semester	Title of the Paper	Hours/ Semester	Duration of exam (hrs)	Max Marks (external)
Thoery					
1	I	Paper I: Mechanics& Properties of Matter	60	3	75
2	II	Paper II: Waves & Oscillations	60	3	75
3	III	Paper III: Wave Optics	60	3	75
4	IV	Paper IV: Thermodynamics & Radiation Physics	60	3	75
5	V	Paper V:Electricity, Magnetism& Electronics	60	3	75
		Paper VI: Modern Physics	60	3	75
6	VI	Paper VII :Elective (One)	60	3	75
		Paper VIII: Cluster Electives (Three)	60	3	75
Practicals					
1	I	Practical I	30	3	50
2	II	Practical II	30	3	50
3	III	Practical III	30	3	50
4	IV	Practical IV	30	3	50
5	V	Practical V	30	3	50
		Practical VI	30	3	50
6	VI	Practical VII	30	3	50
		Practical VIII	30	3	50

Paper I: Mechanics& Properties of Matter

Course learning outcome:

After going through the course, the student should be able to

- Understanding Scalar and vector fields, gradient of a scalar field, Divergence and curl of a vector field. Vector integration (line, surface and volume), Gauss and Stokes theorems.
- Understand laws of motion and their application to various dynamical situations, motion of inertial frames and concept of Galilean invariance. He / she will learn the concept of conservation of energy, momentum, angular momentum and apply them to basic problems.
- Understand the analogy between translational and rotational dynamics, and application of both motions simultaneously in analyzing rolling with slipping.
- Write the expression for the moment of inertia about the given axis of symmetry for different uniform mass distributions. Understand the phenomena of collisions and idea about center of mass and laboratory frames and their correlation.
- Understand the principles of elasticity through the study of Young Modulus and modulus of rigidity.
- Apply Kepler's law to describe the motion of planets and satellite in circular orbit, through the study of law of Gravitation.
- Explain the phenomena of simple harmonic motion and the properties of systems executing such motions.
- Describe how fictitious forces arise in a non-inertial frame, e.g., why a person sitting in a merry-go-round experiences an outward pull.
- Describe special relativistic effects and their effects on the mass and energy of a moving object.
- Appreciate the nuances of Special Theory of Relativity (STR).
- In the laboratory course, the student shall perform experiments related to mechanics (compound pendulum), rotational dynamics (Flywheel), elastic properties (Young Modulus and Modulus of Rigidity) and fluid dynamics (verification of Stokes law, Searle method) etc.

Paper II: Waves & Oscillations

Course learning outcome:

This course will enable the student to

- Recognize and use a mathematical oscillator equation and wave equation, and derive these equations for certain systems.

- Apply basic knowledge of principles and theories about the behaviour of light and the physical environment to conduct experiments.
- Understand the principle of superposition of waves, so thus describe the formation of standing waves.
- Explain several phenomena we can observe in everyday life that can be explained as wave phenomena.

Paper III: Wave Optics

Course learning outcome:

This course will enable the student to

- Use the principles of wave motion and superposition to explain the Physics of polarisation, interference and diffraction.
- Understand the working of selected optical instruments like biprism, interferometer, diffraction grating, and holograms.
- In the laboratory course, student will gain hands-on experience of using various optical instruments and making finer measurements of wavelength of light using Newton Rings experiment, Fresnel Biprism etc. Resolving power of optical equipment can be learnt firsthand.
- The motion of coupled oscillators, study of Lissajous figures and behaviour of transverse, longitudinal waves can be learnt in this laboratory course.

Paper IV: Thermodynamics & Radiation Physics

Course learning outcome:

- Comprehend the basic concepts of thermodynamics, the first and the second law of thermodynamics, the concept of entropy and the associated theorems, the thermodynamic potentials and their physical interpretations.
- Learn about Maxwell's thermodynamic relations.
- Learn the basic aspects of kinetic theory of gases, Maxwell-Boltzman distribution law, equitation of energies, mean free path of molecular collisions, viscosity, thermal conductivity, diffusion and Brownian motion.
- Learn about the real gas equations, Van der Waal equation of state, the JouleThompson effect.
- In the laboratory course, the students are expected to do some basic experiments in thermal Physics, viz., determinations of Stefan's constant, coefficient of thermal conductivity, temperature coefficient of resistant, variation of thermo-emf of a thermocouple with temperature difference at its two junctions and calibration of a thermocouple.

Paper V: Electricity, Magnetism& Electronics

Course learning outcome:

- Achieve an understanding of the Maxwell's equations, role of displacement current, gauge transformations, scalar and vector potentials, Coulomb and Lorentz gauge, boundary conditions at the interface between different media.
- Apply Maxwell's equations to deduce wave equation, electromagnetic field energy, momentum and angular momentum density. Analyse the phenomena of wave propagation in the unbounded, bounded, vacuum, dielectric, guided and unguided media.
- Understand the laws of reflection and refraction and to calculate the reflection and transmission coefficients at plane interface in bounded media.
- Understand the linear, circular and elliptical polarisations of em waves. Production as well as detection of waves in laboratory.
- Understand propagation of em waves in anisotropic media, uni-axial and biaxial crystals phase retardation plates and their uses.
- Understand the concept of optical rotation, theories of optical rotation and their experimental rotation, calculation of angle rotation and specific rotation.
- Understand the features of planar optical wave guide and obtain the Electric field components, Eigen value equations, phase and group velocities in a dielectric wave guide.
- In the laboratory course, the student gets an opportunity to perform experiments Demonstrating principles of
- Interference, Refraction and diffraction of light using monochromatic sources of light. Demonstrate interference, Refraction and Diffraction using microwaves.
- Determine the refractive index of glass and liquid using total internal reflection of light. Verify the laws of Polarisation for plane polarised light.
- Determine Polarisation of light by Reflection and determine the polarization angle off or air-glass surface
- Determine the wavelength and velocity of Ultrasonic waves in liquids using diffraction.
- Study specific rotation of sugar using Polarimeter.
- Analyze experimentally the Elliptically Polarised light using Babinet's Compensator
- Study Experimentally the angle dependence of radiation for a simple dipole antenna
- Plan and Execute 2-3 group projects for designing new experiments based on the Syllabii.

Paper VI: Modern Physics

Course learning outcome:

- Know main aspects of the inadequacies of classical mechanics and understand historical development of quantum mechanics and ability to discuss and interpret experiments that reveal the dual nature of matter.
- Understand the theory of quantum measurements, wave packets and uncertainty principle. Understand the central concepts of quantum mechanics: wave functions,

momentum and energy operator, the Schrodinger equation: time dependent and time independent cases, probability density and the normalization techniques. One dimensional rigid box.

- Understanding the properties of nuclei like density, size, binding energy, nuclear forces and structure of atomic nucleus, liquid drop model and nuclear shell model and mass formula.
- Radioactive decays like alpha, beta, gamma decay.
- Neutrinos and its properties and role in theory of beta decay.
- Understand fission and fusion well as nuclear processes to produce nuclear energy in nuclear reactor and stellar energy in stars.
- Understand various interactions of electromagnetic radiation with matter. Electron positron pair creation.
- In the laboratory course, the students will get opportunity to perform the following experiments:
    - ✓ Measurement of Planck's constant by more than one method.
    - ✓ Verification of the photoelectric effect and determination of the work Function of a metal. Determination of the charge of electron and e/m of electron.
    - ✓ Determination of the ionization potential of atoms.
    - ✓ Determine the wavelength of the emission lines in the spectrum of Hydrogen atom. Determine the absorption lines in the rotational spectrum of molecules.
    - ✓ Determine the wavelength of Laser sources by single and Double slit experiments Determine the wavelength and angular spread of He-Ne Laser using plane diffraction grating.
    - ✓ Verification of the law of the Radioactive decay and determine the mean life time of a Radioactive Source, Study the absorption of the electrons from Beta decay.
    - ✓ Study of the electron spectrum in Radioactive Beta decays of nuclei.
    - ✓ Plan and Execute 2-3 group projects in the field of Atomic, Molecular and Nuclear Physics in collaboration with other institutions, if, possible where advanced facilities are available.

Elective-Paper VII-(B): Materials Science

Course learning outcome:

At the end of the course the students are expected to learn and assimilate the ollowing.

- A brief idea about Materials Classification; Metals, Alloys, Semiconductors, Polymers, Ceramics, Plastics, Bio-materials, Composites, Bulk and nano materials, Interatomic forces, chemical bonds, Binding energy of a crystal.
- Knowledge of different types of magnetism from diamagnetism to ferromagnetism and hysteresis loops and energy loss.
- Understanding about the dielectric, piezoelectric, pyroelectric and ferroelectric properties of materials.

- A brief idea about mechanical behavior of Materials, Creep, Fracture, Technological properties, Factors affecting mechanical properties of a material, Heat treatment, Cold and hot working, Types of mechanical tests, Metal forming process, Powder, Misaligning, Deformation of metals.
- Understand the basic idea about Defects and Diffusion in Materials
- To carry out experiments based on the theory that they have learned to measure the magnetic susceptibility, dielectric constant, trace hysteresis loop.

Cluster Elective Paper –VIII-C-1:Solar Thermal and Photovoltaic Aspects

Course learning outcome:

At the end of the course the students are expected to learn and assimilate the following.

- Understanding the Basics of Solar Radiation
- A brief idea about the Radiative Properties and Characteristics of Materials
- Knowledge above Flat Plate Collectors (FPC), Concentrating Collectors
- Solar photovoltaic (PV) cell, Solar cell fabrication.
- Solar PV systems, Solar thermal applications, Solar PV applications.
- Carry out experiments on Measurement of direct solar radiation using pyrheliometer, global and diffuse solar radiation using pyranometer, Measurement of emissivity, reflectivity and transsivity, Measurement of efficiency of solar flat plate collector, Performance testing of solar air dryer unit, Effect of tilt angle on the efficiency of solar photovoltaic panel, Study on solar photovoltaic panel in series and parallel combination.

Cluster Elective Paper –VIII-C-2 :Wind, Hydro and Ocean Energies

At the end of the course the students are expected to learn and assimilate the following.

- A brief idea about generation, meteorology, world distribution of wind, wind speed variation with height, wind speed statistics, General introduction; Wind Measurements:Eolian features, biological indicators, rotational anemometers, other anemometers, wind measurements withballoons.
- Wind Energy Conversion System, Design of Wind Turbine.
- Wind Energy Application: Wind pumps: Economics of wind energy utilization; Wind energy in India; Environmental Impacts of Wind farms.
- Small Hydropower Systems: Overview of micro, mini and small hydro systems.
- Ocean Thermal, Tidal and Wave Energy Systems.
- Tidal Energy.
- Carry out experiments on Estimation of wind speed using anemometer, Determination of characteristics of a wind generator, Study the effect of number and size of blades of a wind turbine on electric power output, Performance evaluation of vertical and horizontal axes wind turbine rotors, Study the effect of density of water on the output

power of hydroelectric generator, Study the effect of wave amplitude and frequency on the wave energy generated.

Cluster Elective Paper –VIII-C-3 :Energy Storage Devices

At the end of the course the students are expected to learn and assimilate the following.

- Energy Storage
- Electrochemical Energy Storage Systems
- Magnetic and Electric Energy Storage Systems
- Fuel Cell, Types of Fuel Cells
- Carry out experiments on Study of charge and discharge characteristics of storage battery, Study of charging and discharging behavior of a capacitor, Determination of efficiency of DC-AC inverter and DC-DC converters, Study of charging characteristics of a Ni-Cd battery using solar photovoltaic panel, Performance estimation of a fuel cell, Study of effect of temperature on the performance of fuel cell.

DEPARTMENT OF HINDI

Course Outcomes - Department of Hindi

Sem -I

CO1.Students will get knowledge of Hindi language and literature .
CO2.Students will develop mental knowledge which is very important for social development.
CO3. Students will develop expression skills.
CO4. Students will gain social knowledge about humanity.
CO5. Personality will develop in students.
CO6. Students will improve language skills by grammar.
CO7. Student will improve interest on read literature.

Sem -II

CO1.The students will get knowledge of Indian culture and literature.
CO2.Students will acquired knowledge of Indian cultural value.
CO3.Through the AIDS lesson the student himself will be alert and will also alert the society.
CO4.Students will develop expression skills.
CO5.Students will improve their language skills by grammar.
CO6.Students will get information about corruption problem.
CO7. Student will improve interest on read literature.

Sem -III

CO1. Knowledge of devotional policy by ancient devotional poetry.
CO2.Students will get knowledge about Harmony in poetic style and expression.
CO3.Students get knowledge of language used in modern and old poetry.
CO4. Students also get knowledge of the need of poetry in understanding human emotions.
CO5.Students will develop expression skills.
CO6.Students will improve their language skills by grammar.
CO7. Student will improve interest on read literature.

DEPARTMENT OF ZOOLOGY

Course Outcomes - B.Sc. Zoology

SEM.1. DIVERSITY OF NON CHORDATES.

1. Students will understand the microscopic and unicellular organisms belong to the phylum protozoa, and appreciate the diversity of organisms in this phylum.
2. Students will understand the multicellular organisms and their diversity.
3. Students will understand the multicellular and tissue grade level of organization.
4. Students will understand the acoelomate organisms.
5. Students will understand the triploblastic and pseudocoelomate organisms.
6. Students will understand the parasitic organisms and diseases caused by them.
7. Students will understand the coelomic organisms and cephalization.
8. Students will understand the edible organisms for human consumption.
9. Students will Understand the importance of pearl culture, prawn culture, lobster culture, mussel culture and their economic importance.
10.Students will understand the life cycle of exclusively marine organisms and the larval forms in the phylum Echinodermata..

SEM. 2. DIVERSITY OF CHORDATES.

1. Students will appreciate the difference between a non chordate and a chordate organism .
2. Understand the meaning of chordata and classes that belong to chordata.
3. Appreciate the diversity of chordates in their habitat, shape and size.
4. Understand the importance of fishes as food, economic and commercial value.
5. Students will understand how some organisms breathe through lungs, some through skin, lungs etc.
6. Understand how amphibians tried to come out of water but not completely

7. Students will appreciate how reptiles came out of water and their eggs are cleidoic in nature, understanding the difference between poisonous and non poisonous snakes.
8. Students will appreciate the majestic flying mechanism in birds and their diversity, their migratory patterns, their feather structure etc.
9. Students will understand the diversity in mammals, unique nature of mammals and appreciate the differences in prototheria, metatheria and eutheria mammals and understand different types of teeth in mammals.

SEM.5. ANIMAL HUSBANDRY.

1. Students will understand the animal husbandry is a self employment course. With minimum expenditure they can start a poultry farm. They will have an understanding that the government is offering subsidy on loans.
2. Students will have understanding about different types of poultry breeds, they know the difference between layers and broilers, know about different types of country breeds.
3. Students will know how to construct a poultry shed, feed requirements for different chicks, water facilities, different types of cages, etc.
4. Students will understand different types of poultry diseases caused by bacteria, viruses, fungus, helminths and protozoans.
5. Students will understand different types of cattle breeds, famous breeds of the world in terms of milk production and beef production, they know how to construct a cattle shed, their food requirements and water requirements etc.
6. Students will have an idea about deworming, vaccination, weaning of calf, castration and dehorning etc.
7. Students will know how to maintain records of a dairy farm.

SEM.6. IMMUNOLOGY.

1. Students will have a broad understanding of the historical background of the development of Immunology as science.
2. Students will know that there is a system (Immune System) in our body which protects us from disease causing organisms.
3. Students will understand what are the different types of immunities in our body, Innate immunity, Acquired immunity, difference between cell mediated immunity and Humoral immunity.
4. Students will know what are the organs of our body (Lymphoid organs) responsible for immunity, cells of immunity, etc.
5. Students will understand what is an antigen, types of antigens, and its properties.
6. Students will know what is an antibody, its structure, properties and types of antibodies. Know about antigen antibody reactions etc.
7. Students will have knowledge about Hypersensitivity, allergies, different

types of vaccines and their administering, immunization program.
8. Students will understand what are different types of autoimmune disorders.

SEM.6. PRINCIPLES OF AQUACULTURE (CLUSTER).

1. Students will know the difference between agriculture and aquaculture
2. Students will know the importance of aquaculture in terms of its food value and commercial value.
3. Present scenario of Aquaculture around the world.
4. Students will understand what is fresh water aquaculture, what is brackish water aquaculture and mariculture.
5. Students will understand different fish culture methods like extensive culture method, intensive method and semi intensive method etc.
6. Students will know different types of fish ponds, how to construct a fish pond, site selection for fish pond, etc.
7. Students will know what are the different types of cultivable species of fish suitable for freshwater, brackish water and marine water etc.
8. Students will understand the environmental parameters that play crucial role in aquaculture like O2, CO2, DO, turbidity, salinity,PH etc.
9. Students will have knowledge about fish diseases caused by protozoans, fungus, helminthes, bacteria and viral diseases.

DEPARTMENT OF HISTORY

Course Outcomes - B.A. History

Sem	Course	Title of the Course	Hrs/Wk	Credits	Marks
1	1	**Ancient Indian History from earliest to 600A.D**	5	4	100
II	2	Early Mediaeval Indian History from 600AD to 1526A.D	5	4	100
III	3	Late Mediaeval and colonial History of India	5	4	100
IV	4	Social Reform Movement and Freedom struggle	5	4	100
V	5	Age of Rationalism and Humanism	5	4	100
V	6	History and culture of Andhradesa	5	4	100
VI	F P7	History of Modern Europe	5	4	100
VI	F P8	Cultural Tourism in Andhra Pradesh	5	4	100
VI	F P9	Popular Movements in Andhra Desa	5	4	100
VI	F P10	Contemporary History of Andhra Pradesh	5	4	100

Programme Specific Outcomes (PSO) History

After completion of Economics programme, the students will be in a position to take informed decisions with regard to the following:

PSO1: Understand various terms and concepts of the subject with the help of examples from the real life.

PSO2: Understand the Historical facts and features.

PSO3: Gain knowledge about the principles and theories of Historical methods

PSO4: Gain knowledge of the History of the Andhra Pradesh.

PSO5: Acquire ability to understand the socio-economic phenomena by applying the knowledge they gained in the class.

I Semester

Course Outcome: Core P1

CO1: Acquire knowledge and understanding of the nature and scope of the History.

Co2: Acquires knowledge and understanding of the methods of analysis of Historical concepts.

CO3: Acquires knowledge and understand the approaches to overcome partiality in History.

CO4: Acquires knowledge and understanding of the Ancient civilizations.

II Semester

Course Outcome: Core 2

CO1: Understand the socio,economic and cultural conditions in medieval India

CO2: Describe the advent of Islam in India and study the traces of political and cultural expansion of the Turks and Afghans

CO3: Acquire knowledge and understand about price determination in monopoly and oligopoly markets.

CO4: Analyze the emergence of composite culture in India

CO5: visualize where places are in relation to one another through map pointing

III Semester

Course Outcome : CoreP3

CO1: Acquire knowledge about the establishment of Mughal empire.

CO2: Acquire knowledge and understand the relationship between Hindus and Muslims.

CO3: Acquir knowledge about Art and Architecture of Mughal empire.

CO4: Acquire knowledge and understanding of the emergence of British rule in India.

CO5: Acquire knowledge about the problems of the farmers.

IV Semester

Course Outcome: Core P4

CO1: Acquire knowledge and understand meaning and phases of the social reform Movements.

CO2: Acquire knowledge about the conditions in India during social reform movements.

CO3: Acquire knowledge and understand trade cycles and inflation. The understanding of these concepts helps to assess the prevailing situation in the History of British India

CO4: Acquire knowledge and understanding of various financial instruments and institutions functioning.

CO5: Acquire knowledge and understand the Freedom struggle

V Semester

Course Outcome: Core P5

CO1: Acquire knowledge and understand the concepts of growth and development of Renaissance

CO2: Acquire knowledge and understand the Reform Movement and counter Reform Movement

CO3: Acquire knowledge and understand the Revolutions of America and French.

CO 4: Acquire knowledge and understanding of clashes between nations in Europe.

CO5: Understand the concepts of liberalisation, privatisation and globalisation, inclusive growth.

V Semester

Course Outcome: Core P6

CO1: Acquire knowledge and understand importance of the History of Andhra Desa

CO2: Acquire knowledge of early dynasties in Andhra Desa. Establishment of Satavahana empire.
CO3: Acquire knowledge and understanding of the conditions in the period of Vijayanagar empire.
CO4: Acquire knowledge and understanding of the establishment of the Muslim rule in South India.
CO5: Acquire knowledge and understanding of the Freedom struggle in Andhra Desa.

VI Semester

Course Outcome: core p7A

CO1: Acquire knowledge and understand the world before Word wars
CO2: Acquire knowledge and understand the unification movements in Italy and Germany.
Co3: Acquire knowledge and understand the causes and consequences of the First World War
Co4: Acquire knowledge about the causes and consequences of the Second World War
Co5: Acquire the knowledge of the establishment of United Nations Organization.

VI Semester

Course Outcome: Cluster 8A1

CO1: Acquire knowledge of the tourist spots in Andhra Pradesh.
CO2: Acquire knowledge of the importance of the tourism development in Andhra Pradesh
CO3: Acquire knowledge of the preservation of Ancient monuments.
CO4: Acquire knowledge about the Government policies about Tourism Development.

VI Semester

Course Outcome: Cluster Elective 8A2

CO1: Acquire knowledge and understand the popular Movements in Andhra Pradesh.
CO2: Acquire knowledge about Tribal movements in Andhra Desa.
CO3: Acquire knowledge about social reform movements in Andhra Desa.
CO4: Acquire knowlede about freedom fighters in Andhra Desa.
CO5: Acquire knowledge about the Nizam rule in Andhra Desa.

Faculty of Arts.Programe HERI-Programme outcomes

Po1: Acquirer knowledge in different subjects such as Economics, History, Rural Industrialization.
Po2: Identify and define various kinds of sources and understand The social problems
Po3: understanding the problems of the Industries and analyse the solutions
Po4: To create employment through Rural Industrialization
Po5: To understand the importance of Tourism.

Sem	Course	Title of the Course	Hrs/Wk	Credits	Marks
I	1	Micro Economics – Consumer Behaviour	5	4	100
II	2	Micro Economics - Production and Price theory	5	4	100
III	3	Macro Economics - National Income, Employment and Money	5	4	100
IV	4	Banking and International Trade	5	4	100

V	5	Economic Development and Indian Economy	5	4	100
V	6	Indian and Andhra Pradesh Economy	5	4	100
VI	F P7	Public Finance(Elective)	5	4	100
VI	F P8	Taxation (Cluster Elective)	5	4	100
VI	F P9	Public Expenditure and Debt(Cluster Elective)	5	4	100
VI	F P10	Financial Administration (Cluster Elective)	5	4	100

Department of Economics

Programme Specific Outcomes (PSO) Economics

After completion of Economics programme, the students will be in a position to take informed decisions with regard to the following:

PSO1: Understand various terms and concepts of the subject with the help of examples from the real life.

PSO2: Understand the behaviour of consumers and producers and their response to under different situations, say price variation, income variation, input variation

PSO3: Gain knowledge about the principles and theories of economics

PSO4: Gain knowledge of public revenue, public expenditure, public debt, Budget and how they impact various sections of people and the economy.

PSO5: Acquire ability to understand the socio-economic phenomena by applying the knowledge they gained in the class.

Subject outcome

I Semester

Course Outcome: Core P1 Micro Economics – Consumer Behaviour

CO1: Acquire knowledge and understanding of the nature and problem of economics.

Co2: Acquires knowledge and understanding of the methods of analysis of economic problem.

CO3: Acquires knowledge and understand the approaches to consumer behaviour and principles of consumer behaviour.

CO4: Acquires knowledge and understand consumer behaviour when price of the product changes, income of the consumer changes and price of the related commodity changes.
CO5: Acquires knowledge and understand the application of indifference technique in analysing consumer behaviour and consumer equilibrium
The student acquires the skill to present, analyse and interpret data

II Semester

Course Outcome: Core P2 Micro Economics – Production and Price theory

CO1: Acquire knowledge and understand the various concepts of production function, cost and revenue concepts. Acquire knowledge and understand theories of production, producer's behaviour and producer's equilibrium
CO2: Acquire knowledge and understand market structure and characteristics of various markets, price determination under perfect competition and monopoly
CO3: Acquire knowledge and understand about price determination in monopoly and oligopoly markets.
CO4: Acquire knowledge and understand the determination of price of the factors of production. Understand how wages are determined and theories of wages
CO5: Acquire knowledge and understand the determination of price for land, capital and entrepreneur, i.e. theories of rent, interest and profit.

III Semester

Course Outcome : CoreP3 Macroeconomic Analysis- National Income, Employment and Money

CO1: Acquire the knowledge and understand the meaning, definition and importance of Macroeconomics
CO2: Acquire knowledge and understand the various components of National Income, concepts of National Income and methods to measure the National Income. Understand hoe the income flows within the economy.
CO3: Acquire knowledge and understand theory of employment propagated by classical economists.
CO4: Acquire knowledge and understand Keynesian theory of employment, consumption function, investment function, MEC, Multiplier and accelerator.
CO5: Acquire knowledge and understand origin, evolution, functions, concepts and theories of money.

IV Semester

Course Outcome: Core P4 Macroeconomic Analysis- Banking and International Trade

CO1: Acquire knowledge and understand meaning and phases of Trade Cycles, causes and consequences of inflation
CO2: Acquire knowledge and understand the definition, evolution, functions of banks along with reforms in banking sector. Acquire the knowledge and understand the functioning and role of central bank.
CO3: Acquire knowledge and understand trade cycles and inflation. The understanding of these concepts helps to assess the prevailing situation in the economy.

CO4: Acquire knowledge and understanding of various financial instruments and institutions functioning.
CO5: Acquire knowledge and understand the impact of monetary and fiscal policies on the economy, importance of international trade, distinction between balance of trade and balance of payments

V Semester

Course Outcome: Core P5 Economic Development and Indian Economy

CO1: Acquire knowledge and understand the concepts of growth and development and theories of growth
CO2: Acquire knowledge and understand the strategies of development and also know their adoption in our economy's development process
CO3: Acquire knowledge and understand the basic features of Indian Economy, natural resources and demographic features and concept of population dividend
CO 4: Acquire knowledge and understand the composition of National income and trends in national income, inequalities in the distribution of income, unemployment and MGNREGA
CO5: Understand the concepts of liberalisation, privatisation and globalisation, inclusive growth

V Semester

Course Outcome: Core P6 Indian and Andhra Pradesh Economy

CO1: Acquire knowledge and understand importance of agriculture, agrarian reforms, rural credit, agricultural price policy, crop insurance and food security
CO2: Acquire knowledge and understand structure of industries, industrial policies and MSMEs and the problems faced by small scale industries
CO3: Acquire knowledge and understand the concepts of disinvestment, foreign direct investment, service sector in India and reforms in the service sector
CO4: Acquire knowledge and understand the objectives of planning and their impact, NITI Aayog
CO5: Acquire knowledge and understand Andhra Pradesh population characteristics, GSDP and its composition, IT, small scale industries and SEZs

VI Semester

Course Outcome: Elective F P7: Public Finance

CO1: Acquire knowledge and understand the concept of public finance, distinction between private and public finance, Principle of Maximum Social Advantage
CO2: Acquire knowledge and understand various sources of revenue to the Government and principles underlying taxation
Co3: Acquire knowledge and understand the concept of public expenditure and principles of public expenditure
Co4: Acquire knowledge and understand the concept of public debt, types and methods of redemption

Co5: Acquire knowledge and understand the concept of budget, types of budget and components of budget and Indian budget

VI Semester

Course Outcome: Cluster Elective F P8 Taxation

CO1: Acquire knowledge and understand theories of taxation
CO2: Acquire knowledge and understand kinds of taxation
CO3: Acquire knowledge and understand concept of taxable capacity and effects of taxation
CO4: Acquire knowledge and understand various central and state government taxes
CO5: Acquire knowledge and understand GST

VI Semester

Course Outcome: Cluster Elective F P9: Public Expenditure and Debt

CO1: Acquire knowledge and understand the meaning and principles of public expenditure
CO2: Acquire knowledge and understand the classification of public expenditure
CO3: Acquire knowledge and understand the effects of public expenditure
CO4: Acquire knowledge and understand the concept of debt and classification of debt
CO5: Acquire knowledge and understand the effects of debt

DEPARTMENT OF ENGLISH

Course Outcomes – English Subject

Subject: English (CBCS) of UGC guide lines
Programme Outcomes in general:
Students graduating with any Ordinary Bachelor degree (As there is no special or oriental languages in the Institution) of our college should be able to:
1. Develop listening skills in various contexts and comprehend them to respond, write, memorize and reproduce the same.
2. Develop Reading skills in order to understand the content. He/she also get to know the various skills of reading like skimming and scanning etc.
3. Develop Speaking skills which helps him/her to communicate well, to advance his career, group behaviour, voice modulation, pitch, tone etc.
4. Develop Writing skills , presenting his feelings, thoughts etc, letter writing, passage writing, essay, composition, etc.
5**.** Communicate, employment skills, soft skills, interactive skills, interview skills, group leader skills, managerial skills, and life skills etc.
6. Behave in a society as Language is a social skill which enables the individual to become a good citizen with ethics and morality

Course Outcomes:
After completion of these courses' students should be able to:

Semester-I
Course 1
CO 1. To understand reading, writing, listening, and speaking skills through the prose lessons of A. P.J.Abdul Kalam's 'The Knowledge Society and Ngugi wa Thiong'o s' 'The Language of African Literature'
To understand word building, synonyms, antonyms, prefixes, suffixes, grammar, point of view, reading comprehension, making questions and answers etc.,
CO 2. To understand listening and repeating the poetry (poems) of Robert Frosts' 'The Road not Taken' and Nissim Ezekiels' 'Night of the Scorpion' by using the reading devices like pitch, tone and rhyme, rhythm, meter, alliteration, prosody, imagery, sound, figures of speech, symbolism, a allegory, syntax etc.
CO 3. To have comprehensive skills and writing through short stories, 'The Lost Child' by Mulk Raj Anand and 'The Loaded Dog' by Henry Lawson to descript a thing or scene, a person etc, narrative skills, precise writing, paraphrasing, characterization etc.
CO 4. To develop dialogues, spoken English, characterization, acting skills through role play, He/she is expected to learn social context, behaviour in different context, to observe the needs of the society, his/her role in moulding peers and as a responsible person in the society through the drama 'The Merchant of Venice'.

Course Outcomes:
After completion of these courses' students should be able to:

Semester-II
Course 2
CO 1. To understand reading, writing, listening, and speaking skills through the prose lessons 'The Scientific Point of View' by J.B. S. Haldane and 'On Shaking Hands' by A. G. Gardinar.
To understand word building, synonyms, antonyms, prefixes, suffixes, grammar, point of view, reading comprehension, making questions and answers etc.,
CO 2. To understand listening and repeating the poetry (poems) of John Keats and Kishwar Naheed using the reading devices like pitch, tone and rhyme, rhythm, meter, alliteration, prosody, imagery, sound, figures of speech, symbolism, a allegory, syntax etc.
CO 3. To have comprehensive skills and writing through short stories, to descript a thing or scene, a person etc, narrative skills, precise writing, paraphrasing, characterization etc. from the short stories The Boy Who Broke the Bank and Half a Rupee Worth by Ruskin Bond and R.K. Narayan respectively.
CO 4. To develop dialogues, spoken English, characterization, acting skills through role play, He/she is expected to learn social context, behaviour in different context, to observe the needs of the society, his/her role in moulding peers and as a responsible person in the society through the drama 'A Marriage Proposal'

Course Outcomes:
After completion of these courses' students should be able to:
Semester-III

Course 3

CO 1. To understand reading, writing, listening, and speaking skills through the prose lessons ‘Shyness My Scheld’ and ‘Why People Really Love ‘Technology: An Interview with Genevieve Bell’ by M.K. Gandhi and Alexis Madrigal respectively.

To understand word building, synonyms, antonyms, prefixes, suffixes, grammar, point of view, reading comprehension, making questions and answers etc.,

CO 2. To understand listening and repeating the poetry ‘Once upon A Time’ and Digging by Gabriel Okara and Seamus Heaney respectively (poems) by using the reading devices like pitch, tone and rhyme, rhythm, meter, alliteration, prosody, imagery, sound, figures of speech, symbolism, a allegory, syntax etc.

CO 3. To have comprehensive skills and writing through short stories, ;The Interpreter of Maladies’ and ‘My Beloved Charioteer’ by Jhumpa Lahiri and Shashi Deshpande respectively,to descript a thing or scene, a person etc, narrative skills, precise writing, paraphrasing, characterization etc.

CO 4. To develop dialogues, spoken English, characterization, acting skills through role play, He/she is expected to learn social context, behaviour in different context, to observe the needs of the society, his/her role in moulding peers and as a responsible person in the society through the drame ‘Kanyasulkam (Acts 1 and 2) by Gurajada Appa Rao, translated by N. Usha.

DEPARTMENT OF TELEUGU
SUBJECT: TELUGU
COURSE OUTCOME SEMESTER -I

CO – 1 భాష పట్ల గౌరవం, సాహిత్యం పట్ల అభిలాష, సమాజం పట్ల అవగాహన భాషాజ్ఞానం, అభివయక్తి న ైపుణ్యం, మానసిక వికాసం, వయక్తిత్వ వికాసం. ప్రాచీన కవిత్వ అభిరుచి ఆంధ్ర మహా భారత్ రచనా విశిషటత్నుతెలుసుక్ొనుట్ ఒకక త్పపట్టుగు వలల ఎంతో కషటపడి ప్ ందిన ఉననతిని క్ోలపపతారనే అవగాహన స్ిీలను గౌరవించాలనే భావన.

C0 -2 భాషా జ్ఞానం, అభివయక్తి న ైపుణ్యం, మానసిక వికాసం, వయక్తిత్వ వికాసం. ఆధ్ునిక సాహితాయభిరుచి గత్ చరిత్ానను అవగాహన చేసుక్ొనుట్ సమాజంలప స్ిీల సిితి గత్ులప ై అవగాహన స్ిీని చెరపట్టటన వాడిక్త వినాశనం త్పపదను విషయానినగరహించుట్ ఆధ్ునిక కవితా రచనకు పరారణ్.

CO -3 భాషా జ్ఞానం, అభివయక్తి న ైపుణ్యం, మానసిక వికాసం, వయక్తిత్వ వికాసం. కథానిక సవరూప సవభావాలప ై అవగాహన సమక్ాలిన సమాజంలప ర ైత్ుల దయనీయ పరిసిత్ుల ప ై అవగాహన కరువు పరిసిత్ులప ై అవగాహన కథానిక రచన చేయుట్కు పరారణ్.

CO -4 భాషా జ్ఞానం సంధ్ులు, సమాసల ప ై అవగాహన , భాషలప సంధ్ులు సమాసాలను గురిించుట్ అక్షర దోషాలు లేకుండా రాసర నేరుప అలవరచుక్ొనుట్ భాష ప ై పట్టట సాధించుట్

COURSE OUT COMES SEMESTER -II

CO -1 భాషా జ్ఞానం, అభివయక్తి న ైపుణ్యం, మానసిక వికాసం, వయక్తిత్వ వికాసం. భాష పట్ల గౌరవం, సాహిత్యం పట్ల అభిలాష, సమాజం పట్ల అవగాహన ప్రాచీన కవిత్వ అభిరుచి భక్తి కవిత్వం గురించి తెలుసుక్ొనుట్ ప్రాచీన కవుల చమతాకర రచనా వ ైభవానిన అవగాహన చేసుక్ొనుట్

CO -2 భాషా జ్ఞానం, అభివయక్తి న ైపుణ్యం, మానసిక వికాసం, వయక్తిత్వ వికాసం ఆధ్ునిక కవిత్వ అభిరుచి ఇచిిన మాట్ున్ నిలబెట్టటక్ోవాలనే భావన.ఉనన వృక్షాలను రక్షించుక్ోవాలని, క్ొత్ిగా మొకకలు నాట్ాలనే ఆక్ాంక్ష.

CO -3 భాషా జ్ఞానం, అభివయక్తి న ైపుణ్యం, మానసిక వికాసం, వయక్తిత్వ వికాసం. కథానిక సవరూప సవభావాలప ై అవగాహన సమక్ాలిన సమాజంలప ర ైత్ులు సిితిగత్ులు ప ై అవగాహన స్ిీ పురుషులు సమానులే అనన ఆధ్ునిక భావనను అరధం చేసుక్ొనుట్
కథానిక రచన చేయుట్కు పరారణ్.

CO -4 భాషా జ్ఞానం, అభివయక్తి న ైపుణ్యం, మానసిక వికాసం, వయక్తిత్వ వికాసం జ్ఞనపద కళారూప్ాలప ై అవగాహన, జ్ఞనపద కళాక్ారుల జీవన నేపధ్యం తెలుసుక్ొనుట్ ప్రాచీన కళారూప్ాలను క్ాప్ాడుక్ోవలెనే ఆసక్తి.

COURSE OUTCOME SEMESTER – III

CO -1 భాషా జ్ఞానం, అభివయక్తి న ైపుణ్యం, మానసిక వికాసం, వయక్తిత్వ వికాసం ప్రాచీన కవిత్వ అభిరుచి ఆంధ్ా మహా భాగవత్ విశిషటత్ున్ అరధం చేసుక్ొనుట్ ఇచిిన మాట్ుకు కట్టటబడి ఉండాలనే సంకలపం దేనిలపన ైన విజయం సాధించ గలమనే ఆత్మ విశ్ావసం ప ంప్ దించుక్ొనుట్.

CO – 2 భాషా జ్ఞానం, అభివయక్తి న ైపుణ్యం, మానసిక వికాసం, వయక్తిత్వ వికాసం ఆధ్ునిక కవిత్వ అభిరుచి ఆధ్ునిక సాహిత్య పాక్తరయలు -దళిత్ కవిత్వం హరిజన శత్క్ ాలం నాట్ట సామజిక సిితి గత్ులు, నాట్టక్త, నేట్టక్త సమాజంలప వచిిన మారుపలుపట్ల అవగాహన సమాజ అభివృదిధక్త పాయత్నం పండుగల పట్ల అవగాహన, అందరూకలసి మెలసి ఉండాలనే భావం.

CO -3 భాషా జ్ఞానం, అభివయక్తి న ైపుణ్యం, మానసిక వికాసం, వయక్తిత్వ వికాసం వాయస రచన పదధత్ులు తెలుసు క్ొనుట్, వాయస రచన పట్ల ఆసక్తి తెలుగు భాష పట్ల అవగాహన ,

తెలుగుభాష పాసుిత్ పరిసిితి తెలుగు సాహితీ వ ైభవం మన భాషను రక్షించు క్ోవాలనే సంకలపం వయక్తితావనిన వికసింప చేసుకునే పాయత్నం.

CO-4 ఛంద ము ,అలంక్ారాల ప ై అవగాహన ఛందోరచన పట్ల ఆసక్తి నిత్య వయవహారంలప ఉపయోగించే అలంక్ారాలను గురిించుట్. అలంక్ారాలను ఉపయోగించి రచనలు చేయుట్ యందు ఆసక్తి .

DEPARTMENT OF BOTANY

SEMESTER–I(MICROBIALDIVERSITY,ALGAEANDFUNGI)
Theory

UNIT-I:MICROBIALWORLD
CO1:Studentscanknowthediscoveryofmicroorganisms,originoflife,spontaneous biogenesis,Pasteurexperiments,germ theoryofdisease.
CO2:Studentscanunderstandtheclassificationofmicroorganismsgivenby R.H. Whittaker(fivekingdom concept)andCarlWoese(domainsystem).
CO3:Studentswilllearnaboutspecialgroupsofbacterialike Archaebacteria,Mycoplasma, Chlamydia,Actinomycetes,RickettsiasandCyanobacteria.

UNIT-II:VIRUSES
CO1:StudentscanknowthediscoveryandgeneralaccountofViruses,structure&replication ofT4phage(Lytic,Lysogenic)andTMV,Viroid,Prions.
CO2:Studentswillunderstanddifferentplantdiseasescausedby Viruses,theirsympyoms, transmissionandcontrolmeasures.
CO3:StudentsstudytheTobaccoMosaic,BhendiveinclearingandPapayaleafcurldiseases.

UNIT-III:BACTERIA
CO1:Studentscanknowthediscovery,generalcharacteristics,cellstructureandnutritionof Bacteria.
CO2:StudentswillunderstandreproductionofBacteria.
CO3:Studentswilllearntheeconomicimportanceof Bacteria.

UNIT-IV:Algae
CO1:Studentswilllearnaboutthegeneralcharactersof Algae.
CO2:StudentscanunderstandtheFritschclassificationofAlgaeandeconomicimportance.
CO3:Studentswilllearnaboutstructure,reproductionandlifehistoryofOedogonium, EctocarpusandPolysiphonia.

UNIT-V:Fungi
CO1:Studentswilllearnaboutthegeneralcharactersand Ainsworthclassificationoffungi.

CO2:Studentswilllearnaboutstructure,reproductionandlifehistoryofRhizopus,Penicillium andPuccinia.
CO3:Studentswillunderstandaboutstructure,reproduction,ecologicalandeconomic importanceofLichens.

Practicals
CO1:StudentswillgettheknowledgeofEquipmentusedinMicrobiology.
CO2:Studentscanunderstandthepreparationofliquidandsolidmediaforculturing of microbes.
CO3:Studentswillstudydifferentvirusesandbacteria.
CO4:StudentswilllearnGram stainingtechnique.
CO5:StudentswillstudyplantdiseasesymptomscausedbyBacteria,VirusesandFungi.
CO6:StudentswillstudyvegetativeandreproductivestructuresoftheCyanobacteria,Algae andFungi.
CO7:StudentswillstudydifferentplantmaterialsinfectedbyFungi.
CO8:StudentswillunderstandmorphologyandanatomyofdifferentthalliofLichens.
CO9:Fieldvisitsimprovetheirknowledge.

Department of Commerce

Course Objectives and Course Outcomes

Class/Course code	Course name	Course objectives	Course outcomes
SEM 1 DSC 2A	Business organization	Explanation of 1)Aids to trade and entrepreuship 2) Different types of Business Organisations 3) Joint stock company and the procedure of incorporation	1)Students learn about relationship between trade industry and commerce 2)Students learn how to start Business 3) Select the best type of organisation based on the resources at their disposal 3) Acquire knowledge how to register a company with necessary documents
SEM 2 DSC 2B	Business Environment	Explanation of 1)Different types of Business environment 2) factors influencing balanced growth 3)Niti ayog ,New economic reforms and	1) Awareness of legal, political, economic cultural ,demographic environment of Business 2)Learn about objectives of Niti Ayog and licensing of industries 3)Learn about budget allocation to various sectors and how

		New industrial policy 4) Importance of Union Budget	budgets are utilised .
SEM 3 DSC 2C	Business statistics	Explanation of 1)Importance of statistics and diagrammatic representation 2)Different types of averages 3)Dispersion methods 4)Measures of relation 5)Analysis of Time series and index numbers	1) Learn application of statistics in daily life and in Research and how to present it through diagrams through Excel. 2) Learn how to apply dispersion methods taken from different averages like mean median and mode 3)Expereinxe with given variables what is the relationship between them and to find out the dependent variables which is useful for forecasting demand 4) Know to calculate trend and seasonal variations in products 5) Practical knowledge of construction of index numbers which is useful in daily life for evaluation of cost of living and curb inflation .
SEM 4 DSC 1D	Accounting for Service organisations	Explanation of 1)Service organisations and Sec 8 of companies Act 2)Accounting of electricity. Bank, life insurance and General Insurance accounts	1) Learn how to register service organisations under sec 8 of companies act 2013 2)Gain knowledge in accounting of electricity, Bank ,insurance. 3)Acquire practical skills to prepare the required schedules
SEM 5	Commercial geography	Explanation of 1)About how earth was	1) Knox about the latitudes and longitudes and different layers of

DSC 3E		formed 2)Agriculture ,different types of soils 3)Food and non food crops , Problems of Agriculture 4)Forest acts, Minerals and mining 5)Water resources and interlinking of rivers	atmosphere 2)Acquire knowledge about suitable soils for agriculture produce 3)Experince how to overcome problems in agriculture 4) Learn about minerals and their uses in various industries 5) Learn about Rivers flowing in our country and interlinking of rivers between states
SEM 5 DSC 3F	Central banking	Explanation of 1)Evolution of central bank development and trends 2)Interface between RBI and banks Monetary and credit policies ,Inflation and price control by RBI 3))Basel ,Prudential norms	1) Students learn how central banks play an important role in development of economy 2) Learn how RBI plays the role of controlling the money circulation in economy 3) Study International Basel norms in functioning of banks and also the Prudential norms of RBi
SEM 6 DSC 3G	Management Accounting	Explanation of 1)Analysis of financial statements ,Ratio analysis 2)Funds and cash flow 3)Break even analysis	1) Students learn how to analyse the financial statements 2)Gain knowledge by calculating various current, leverage. profitablilty .turnover ratios. 3) How to interpret the performance of companies and improve their financial position and take measures 3) Gain decision making skills to buy or make the product, continue or stop producing loss making units

SEM 6 DSC 3H	Financial services	Explanation of 1)Difference between banking and nonbanking companies 2)Fund based and fee based activities 3)Venture capital and Demat services Leasing and hire purchase 5)Credit rating of companies 6)Factoring and forfaiting	1)Students acquire knowledge about the functions of banking and nonbanking companies registration, Acts etc 2) know about financial institutions which support and finance new projects 3) Experience how to open demat account and how to invest in markets 4) Acquire skills how to get advances by discounting of bills through banks and factors