GOVERNMENT COLLEGE FOR MEN, KURNOOL

Accredited with NAAC 'B^+' Grade

CRITERIA 2.6.1

Course Outcomes (UG)

DEPARTMENT OF ENGLISH

S. No	Title of the Paper	Course Outcomes
1	English Praxis Course-I A Course in Communication and Soft Skills	1. Use grammar effectively in writing and speaking. 2. Demonstrate the use of good vocabulary 3. Demonstrate an understating of writing skills 4. Acquire ability to use Soft Skills in professional and daily life. 5. Confidently use the tools of communication skills
	English Praxis Course-II A Course in Reading & Writing Skills	1. Use reading skills effectively 2. Comprehend different texts 3. Interpret different types of texts 4. Analyze what is being read 5. Build up a repository of active vocabulary 6. Use good writing strategies 7. Write well for any purpose 8. Improve writing skills independently for future needs
	English Praxis Course-III A Course in Conversational Skills	1. Speak fluently in English 2. Participate confidently in any social interaction 3. Face any professional discourse 4. Demonstrate critical thinking 5. Enhance conversational skills by observing the professional interviews

DEPARTMENT OF TELUGU

S. No	Title of the Paper	Course Outcomes
2	Pracheena Telugu Kavithvam P-I	1. By studying Ancient Poetry students understand the different styles of classical writings and importance of those writings. They can develop moral values, Telugu Tradition and Culture. 2. The study of Mother Tongue students will improve Personality Development. Students should gain theknowledge of classical Literature and trends. 3. Students cultivate the social mobilization and awarenessthrough literature. 4. Student will get the language skills; those are LSRW and develop creative writing on contemporary social issues.
	Aadhunika Telugu Sahithyam P-II	1. Students gain the knowledge in modern literature and it develops the social awareness. 2. Student can develop himself / herself interest towards history, tradition, and culture. 3. It enhances the moral values and incorporates good personality. 4. Students inculcate inner abilities throughTelugu Language. 5. Students will get the knowledge of different literary typesand their social purpose. 6. Student will get knowledge from modern literature and it will help to get employment through competitive exams.
	Srujanaathmaka Rachana P-III	1. Student gets the knowledge towards Linguistics, Letter Writing and Reading Skills. 2. Students Vocabulary will be developed and also developSocial awareness 3. Student's psychological development will be improved. Moral values will be developed. 4. Students get knowledge in the translation work. 5. Students will get employment through media writing and anchoring etc.,

DEPARTMENT OF HINDI

S. No	Title of the Paper	Course Outcomes
3	Hindi Gadhya Sandesh Sem-I	1. Concept of History of Hindi Literature of beginning period (Aadikaal) and medieval period (Madhyakaal) 2. Ability to understand the development of Hindi language and literature of Aadikal & Madhyakaal. Competency developed: 3.Understanding of History of Hindi literature and language ofAadikaal and Madhyakaal. 3. Differentiation and departure points of Hindi literature and language of Aadikaal and Madhyakaal. 4. Time framing ability of Aadikaleen and Madhyakaleen Hindi Literature.
	Gadhya Sandesh exam Kathalok Sem-II	1. Concept of (text based) Hindi short stories of modern era (Aadhunik kaal). 2. Ability to understand the development of Hindi short storiesby textual study. 3. Understanding of development of Hindi short stories. 4. Differentiation and departure points of Hindi short stories. 5. Ability to think about Hindi short stories. 6. Concept of text-based study of essays of Hindi. 7. Ability to understand the development of essays of Hindi. 8. Understanding of Hindi essays. 9. Differentiation and departure points of Hindi essays. 10. Ability to think about Hindi essays.
	HindiKavyadeep Sem-III	1. Understanding the meaning, concept and importance ofFunctional Hindi. 2. Understanding various forms of Functional Hindi accordingto its area of application. 3. Understanding the Official Language Acts of 1963, 1968 and1976. 4. Understanding the importance of translation. 5. Understanding various forms of writing in media.Understanding the role played by the poets of Bhakti cult inliterature and society. 6. Describing the progressive nature of sant Kabir and hiswritings. 7. Describing the Krishna leela poetry of Soordas by relating itwith his philosophy of his life. 8. Describing the philosophy of life as well as poems of 'Aadhunika Kavi', Maithilisharan Gupt, Nirala, SarweshwarDayal Saksena.

DEPARTMENT OF HISTORY

S. No	Title of the Paper	Course Outcomes
4	Ancient India History & Culture (from Indus valley civilization to13th cen A.D.) P-I	1. The student will be able to identify and defined various kindsof sources and understand and how history books are shaped. 2. Compare and contrast various stages of progress from IVC to Vedic age. 3. To analyze the Jain, Buddhist and Vedic faiths 4. To increase the awareness and appreciation of transition from territorial states to emergence of empire 5. To analyze the emergence of Gupta empire 6. To evaluate the key facets of ancient society, quality and culture in south India 7. To critically examine the nature of monarchic rule and develop and comprehensive understanding of cultural evolution during ancient period. 8. To Visualize where places are in relation to one another through map pointing
	Medieval India History &Culture (1206 A.D.to1764 A.D.) P-II	1. To understand the socio economic and cultural conditions of medieval India 2. To describe the advent of Islam in India and study the traces of political and cultural expansion of Turks and Afghans 3. To explain the administration and art and architecture ofVijayanagara rulers and Moghals 4. To analyze the rise of Marathas and the contribution of Sivaji

DEPARTMENT OF MATHEMATICS

S.No	Title of the Paper	Course Outcomes
5	Differential Equations P-I	**1.** After successful completion of this course, the student will be able to; Solve linear differential equations 2. Convert non exact homogeneous equations to exact differential equations by using integrating factors. 3. Know the methods of finding solutions of differential equations of the first order but not of the first degree. 4. Solve higher-order linear differential equations, both homogeneous and nonhomogeneous, with constant coefficients. 5. Understand the concept and apply appropriate methods for solving differential equations .
	Three dimensional analytical Solid geometry P-II	1. Get the knowledge of planes. 2. Basic idea of lines, sphere and cones. 3. Understand the properties of planes, lines, spheres and cones. 4. Express the problems geometrically and then to get the solution.
	Abstract Algebra P-III	1. Acquire the basic knowledge and structure of groups, subgroups and cyclic groups. 2. Get the significance of the notation of a normal subgroup. 3. Get the behavior of permutations and operations on them. 4. Study the homomorphisms and isomorphisms with applications. 5. Understand the ring theory concepts with the help of knowledge in group theory and to prove the theorems. 6. Understand the applications of ring theory in various fields.
	Real Analysis P-IV	1. Get clear idea about the real numbers and real valued functions. 2. Obtain the skills of analyzing the concepts and applying appropriate methods for testing convergence of a sequence/ series. 3. Test the continuity and differentiability and Riemann integration of a function. 4. Know the geometrical interpretation of mean value theorems.

	Linear Algebra P- V	1. Understand the concepts of vector spaces, subspaces, basises, dimension and their properties 2. Understand the concepts of linear transformations and their properties 3. Apply Cayley- Hamilton theorem to problems for finding the inverse of a matrix and higher powers of matrices without using routine methods 4. Learn the properties of inner product spaces and determine orthogonality in inner product spaces.
	Multiple integrals and Applications of Vector Calculus (6B) P-VI	1. Learn multiple integrals as a natural extension of definite integral to a function of two variables in the case of double integral / three variables in the case of triple integral. 2. Learn applications in terms of finding surface area by double integral and volume by triple integral. 3. Determine the gradient, divergence and curl of a vector and vector identities. 4. Evaluate line, surface and volume integrals. 5. understand relation between surface and volume integrals (Gauss divergence theorem),relation between line integral and volume integral (Green's theorem), relation between line and surface integral (Stokes theorem)
	Integral transforms with Applications (7B) P-VII	1. Evaluate Laplace transforms of certain functions, find Laplace transforms of derivatives and of integrals. 2. Determine properties of Laplace transform which may be solved by application of special functions namely Dirac delta function, error function, Bessel function and periodic function. 3. Understand properties of inverse Laplace transforms, find inverse Laplace transforms of derivatives and of integrals. 4. Solve ordinary differential equations with constant/ variable coefficients by using Laplace transform method. 5. Comprehend the properties of Fourier transforms and solve problems related to finite Fourier transforms.

DEPARTMENT OF COMPUTER SCIENCE

S. No	Title of the Paper	Course Outcomes
6	Problem Solving In C P-I	1. Understand the evolution and functionality of a Digital Computer. 2. Apply logical skills to analyze a given problem 3. Develop an algorithm for solving a given problem. 4. Understand „C" language constructs like Iterative statements, Array processing, Pointers, etc. 5. Apply „C" language constructs to the algorithms to write a „C" language program.
	Data Structures Using C - P-II	1. Understand available Data Structures for data storage and processing. 2. Comprehend Data Structure and their real-time applications - Stack, Queue, Linked List, Trees and Graph 3. Choose a suitable Data Structures for an application 4. Develop ability to implement different Sorting and Search methods 5. Have knowledge on Data Structures basic operations like insert, delete, search,update and traversal 6. Design and develop programs using various data structures 7. Implement the applications of algorithms for sorting, pattern matching etc
	Database Management Systems P- III	1. Gain knowledge of Database and DBMS. 2. Understand the fundamental concepts of DBMS with special emphasis on relational data model. 3. Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database 4. Model database using ER Diagrams and design database schemas based on the model. 5. Create a small database using SQL. 6. Store, Retrieve data in database.
	Object Orientated Programming Through Java P-IV	1. Understand the benefits of a well-structured program 2. Understand different computer programming paradigms 3. Understand underlying principles of Object-Oriented Programming in Java 4. Develop problem-solving and programming skills using OOP concepts 5. Develop the ability to solve real-world problems through software development in high-level programming language like Java

	Operating Systems P-V	1. Know Computer system resources and the role of operating system in resource management with algorithms 2. Understand Operating System Architectural design and its services. 3. Gain knowledge of various types of operating systems including Unix and Android. 4. Understand various process management concepts including scheduling,Synchronization, and deadlocks. 5. Have a basic knowledge about multithreading. 6.Comprehend different approaches for memory management. 7. Understand and identify potential threats to operating systems and the security features design to guard against them. 8. Specify objectives of modern operating systems and describe how operating systems have evolved over time. 9. Describe the functions of a contemporary operating system
	Big Data Analytics Using R P-6	1. Understand data and classification of digital data. 2. Understand Big Data Analytics. 3. Load data in to R. 4. Organize data in the form of R objects and manipulate them as needed. 5. Perform analytics using R programming.
	Data Science Using Python	1. Understand basic concepts of data science 2. Understand why python is a useful scripting language for developers. 3. Use standard programming constructs like selection and repetition. 4. Use aggregated data (list, tuple, and dictionary). 5. Implement functions and modules.

DEPARTMENT OF PHYSICS

S. No	Title of the Paper	Course Outcomes
7	Mechanics, Waves And Oscillations P-I	1. Understand Newton's laws of motion and motion of variable mass system and its application to rocket motion and the concepts of impact parameter, scattering cross section. 2. Apply the rotational kinematic relations, the principle and working of gyroscope and it applications and the processional motion of a freely rotating symmetric top. 3. Comprehend the general characteristics of central forces and the application of Kepler's laws to describe the motion of planets and satellite in circular orbit through the study of law of Gravitation. 4. Understand postulates of Special theory of relativity and its consequences such as length contraction, time dilation, relativistic mass and mass-energy equivalence. 5. Examine phenomena of simple harmonic motion and the distinction between undamped, damped and forced oscillations and the concepts of resonance and quality factor with reference to damped harmonic oscillator. 6. Appreciate the formulation of the problem of coupled oscillations and solve them to obtain normal modes of oscillation and their frequencies in simple mechanical systems. 7. Figure out the formation of harmonics and overtones in a stretched string and acquire the knowledge on Ultrasonic waves, their production and detection and their applications in different fields.
	Wave Optics P-II	1. Understand the phenomenon of interference of light and its formation in (i) Lloyd's single mirror due to division of wave front and (ii) Thin films, Newton's rings and Michelson interferometer due to division of amplitude. 2. Distinguish between Fresnel's diffraction and Fraunhofer diffraction and observe the diffraction patterns in the case of single slit and the diffraction grating. 3. Describe the construction and working of zone plate and make the comparison of zone plate with convex lens. 4. Explain the various methods of production of plane, circularly and polarized light and their detection and the concept of optical activity. 5. Comprehend the basic principle of laser, the working of He-Ne laser and Ruby lasers and their applications in different fields.

		6. Explain about the different aberrations in lenses and discuss the methods of minimizing them. 7. Understand the basic principles of fibre optic communication and explore the field of Holography and Nonlinear optics and their applications
	Heat And Thermodynamics P-III	2. Understand the basic aspects of kinetic theory of gases, Maxwell-Boltzman distribution law, equipartition of energies, mean free path of molecular collisions and the transport phenomenon in ideal gases 3. Gain knowledge on the basic concepts of thermodynamics, the first and the second law of thermodynamics, the basic principles of refrigeration, the concept of entropy, the thermodynamic potentials and their physical interpretations. 4. Understand the working of Carnot's ideal heat engine, Carnot cycle and its efficiency 5. Develop critical understanding of concept of Thermodynamic potentials, the formulation of Maxwell's equations and its applications. 6. Differentiate between principles and methods to produce low temperature and liquefy air and also understand the practical applications of substances at low temperatures. 7. Examine the nature of black body radiations and the basic theories.

Electricity, Magnetism And Electronics P-IV	1. Understand the Gauss law and its application to obtain electric field in different cases and formulate the relationship between electric displacement vector, electric polarization, Susceptibility, Permittivity and Dielectric constant. 2. Distinguish between the magnetic effect of electric current and electromagnetic induction and apply the related laws in appropriate circumstances. 3. Understand Biot and Savart's law and Ampere's circuital law to describe and explain the generation of magnetic fields by electrical currents. 4. Develop an understanding on the unification of electric and magnetic fields and Maxwell's equations governing electromagnetic waves. 5. Phenomenon of resonance in LCR AC-circuits, sharpness of resonance, Q- factor, Power factor and the comparative study of series and parallel resonant circuits. 6. Describe the operation of p-n junction diodes, zener diodes, light emitting diodes and transistors 7. Understand the operation of basic logic gates and universal gates and their truth tables.
Modern Physics P-V	1. Develop an understanding on the concepts of Atomic and Modern Physics, basic elementary quantum mechanics and nuclear physics. 2. Develop critical understanding of concept of Matter waves and Uncertainty principle. 3. Get familiarized with the principles of quantum mechanics and the formulation of Schrodinger wave equation and its applications. 4. Examine the basic properties of nuclei, characteristics of nuclear forces, salient features of nuclear models and different nuclear radiation detectors. 5. Classify Elementary particles based on their mass, charge, spin, half-life and interaction. 6. Get familiarized with the nano materials, their unique properties and applications. 7. Increase the awareness and appreciation of superconductors and their practical applications.

	Low Temperature Physics & Refrigeration P-VI (6B)	1. Identify various methods and techniques used to produce low temperatures in the Laboratory. 2. Acquire a critical knowledge on refrigeration and air conditioning. 3. Demonstrate skills of Refrigerators through hands on experience and learns about refrigeration components and their accessories. 4. Understand the classification, properties of refrigerants and their effects on environment. 5. Comprehend the applications of Low Temperature Physics and refrigeration.
	Solar Energy and Applications (7B) P-VII	1. Understand Sun structure, forms of energy coming from the Sun and its measurement. 2. Acquire a critical knowledge on the working of thermal and photovoltaic collectors. 3. Demonstrate skills related to callus culture through hands on experience 4. Understand testing procedures and fault analysis of thermal collectors and PV modules. 5. Comprehend applications of thermal collectors and PV modules.

DEPARTMENT OF ZOOLOGY

S. No	Title of the Paper	Course Outcomes
8	Animal Diversity – Biology Of Nonchordates P-I	1. Describe general taxonomic rules on animal classification 2. Classify Protozoa to Coelenterata with taxonomic keys 3. Classify Phylum Platy hemninthes to Annelida phylum using examples from parasitic adaptation and vermin composting 4. Describe Phylum Arthropoda to Mollusca using examples and importance of insects and Molluscans 5. Describe Echinodermata to Hemi chordata with suitable examples and larval stages in relation to the phylogeny
	Animal Diversity – Biology Of Chordates P-II	1. Describe general taxonomic rules on animal classification of chordates 2. Classify Protochordata to Mammalia with taxonomic keys 3. Understand Mammals with specific structural adaptaions 4. Understand the significance of dentition and evolutionary significance 5. Understand the origin and evolutionary relationship of different phyla from Prochordata to mammalia.
	Cell Biology, Genetics, Molecular Biology And Evolution P-III	1. To understand the basic unit of the living organisms and to differentiate the organisms by their cell structure. 2. Describe fine structure and function of plasma membrane and different cell organelles of eukaryotic cell. To understand the history of origin of branch of genetics, gain knowledge on heredity, interaction of genes, various types of inheritance patterns existing in animals 3. Acquiring in-depth knowledge on various of aspects of genetics involved in sex determination, human karyotyping and mutations of chromosomes resulting in various disorders 4. Understand the central dogma of molecular biology and flow of genetic information from DNA to proteins. 5. Understand the principles and forces of evolution of life on earth, the process of evolution of new species and apply the same to develop new and advanced varieties of animals for the benefit of the society.
	Animal Physiology, Cellular Metabolism And EmbryologyP-IV	1. Understand the functions of important animal physiological systems including digestion, cardio-respiratory and renal systems. 2. Understand the muscular system and the neuro-endocrine regulation of animal growth, development and metabolism with a special knowledge of hormonal control of human reproduction.

		3. Describe the structure, classification and chemistry of biomolecules and enzymes responsible for sustenance of life in living organisms 4. Develop broad understanding the basic metabolic activities pertaining to the catabolism and anabolism of various biomolecules 5. Describe the key events in early embryonic development starting from the formation of gametes up to gastrulation and formation of primary germ layers.
	Immunology And Animal BiotechnologyP-V	1. To get knowledge of the organs of Immune system, types of immunity, cells and organs of immunity. 2. To describe immunological response as to how it is triggered (antigens) and regulated (antibodies) 3. Understand the applications of Biotechnology in the fields of industry and agriculture including animal cell/tissue culture, stem cell technology and genetic engineering. 4. Get familiar with the tools and techniques of animal biotechnology.
	Live Stock Management-I (Biology Of Dairy Animals)(6B)P-VI	1. Students at the successful completion of the course will be able to 2. Select the suitable breeds of livestock for rearing 3. Relate the anatomy of udder with letdown of milk 4. Identify and manipulate the reproductive behavior of cattle 5. Inspect the economics of dairy farming 6. Apprise the various breeding techniques employed in live stock
	Live Stock Management -II (Dairy Production And Management)(7B) P-VII	1. Identify and suggest the suitable housing system for the dairy farming 2. Understand management practices for the dairy farming 3. Learn the process of milk pasteurization 4. Prepare cream from milk

DEPARTMENT OF MATHEMATICS

S. No	Title of the Paper	Course Outcomes
9	Differential Equations P-I	**1.** After successful completion of this course, the student will be able to; Solve linear differential equations 2. Convert non exact homogeneous equations to exact differential equations by using integrating factors. 3. Know the methods of finding solutions of differential equations of the first order but not of the first degree. 4. Solve higher-order linear differential equations, both homogeneous and nonhomogeneous, with constant coefficients. 5. Understand the concept and apply appropriate methods for solving differential equations
	Three dimensional analytical Solid geometry -P-II	1. Get the knowledge of planes. 2. Basic idea of lines, sphere and cones. 3. Understand the properties of planes, lines, spheres and cones. 4. Express the problems geometrically and then to get the solution.
	Abstract Algebra P-III	1. Acquire the basic knowledge and structure of groups, subgroups and cyclic groups. 2. Get the significance of the notation of a normal subgroup. 3. Get the behavior of permutations and operations on them. 4. Study the homomorphisms and isomorphisms with applications. 5. Understand the ring theory concepts with the help of knowledge in group theory and to prove the theorems. 6. Understand the applications of ring theory in various fields.
	Real Analysis P-IV	1. Get clear idea about the real numbers and real valued functions. 2. Obtain the skills of analyzing the concepts and applying appropriate methods for testing convergence of a sequence/ series. 3. Test the continuity and differentiability and Riemann integration of a function. 4. Know the geometrical interpretation of mean value theorems.

	Linear Algebra P- V	1. Understand the concepts of vector spaces, subspaces, basises, dimension and their properties 2. Understand the concepts of linear transformations and their properties 3. Apply Cayley- Hamilton theorem to problems for finding the inverse of a matrix and higher powers of matrices without using routine methods 4. Learn the properties of inner product spaces and determine orthogonality in inner product spaces.
	Multiple integrals and Applications of Vector Calculus (6B) P-VI	1. Learn multiple integrals as a natural extension of definite integral to a function of two variables in the case of double integral / three variables in the case of triple integral. 2. Learn applications in terms of finding surface area by double integral and volume by triple integral. 3. Determine the gradient, divergence and curl of a vector and vector identities. 4. Evaluate line, surface and volume integrals. 5. understand relation between surface and volume integrals (Gauss divergence theorem),relation between line integral and volume integral (Green's theorem), relation between line and surface integral (Stokes theorem)
	Integral transforms with Applications (7B) P-VII	1. Evaluate Laplace transforms of certain functions, find Laplace transforms of derivatives and of integrals. 2. Determine properties of Laplace transform which may be solved by application of special functions namely Dirac delta function, error function, Bessel function and periodic function. 3. Understand properties of inverse Laplace transforms, find inverse Laplace transforms of derivatives and of integrals. 4. Solve ordinary differential equations with constant/ variable coefficients by using Laplace transform method. 5. Comprehend the properties of Fourier transforms and solve problems related to finite Fourier transforms.

DEPARTMENT OF POLITICAL SCIENCE

S. No	Title of the Paper	Course Outcomes
10	Introduction to Political Science P-1	1. Recall the previous knowledge about Political Science and understand the nature and scope, traditional and modern approaches of Political Science. 2. Understand concepts intrinsic to the study of Political Science. 3. Have solid theoretical understanding of Rights and its theories along with the basic aspects of certain political ideologies.
	Basic Organs of the Government P-II	1. Understand the Origin and Evolution of the concept of Constitutionalism and classification of Constitutions. 2. Acquaint themselves with different theories of origin of State. 3. Understand and analyses organs and forms of Governments along with a deep insight into the various agents involved in the political process. 4. Apply the knowledge to analyse and evaluate the existing systems
	Indian Government and Politics P-III	1. Acquire knowledge about the historical background of Constitutional development in India, appreciate philosophical foundations and salient features of the Indian Constitution. 2. Analyze the relationship between State and individual interms of Fundamental Rights and Directive Principles of State Policy. 3. Understand the composition of and functioning of Union Government as well as State Government and finally 4. Acquaint themselves with the judicial system of the country and its emerging trends such as judicial reforms
	Indian Political Process P-IV	1. Know and understand the federal system of the country and some of the vital contemporary emerging issues. 2. Evaluate the electoral system of the country and to identify the areas of electoral reforms. 3. Know the constitutional base and functioning of local governments with special emphasis on 73rd& 74th Constitutional Amendment Acts. 4. Understand the dynamics of Indian politics, challenges faced and gain a sensitive comprehension to the contributing factors.

	5. Apply the knowledge and critically comprehend the functioning of some of the regulatory and governance institutions. 6. Propose theoretical outline alternate models
Western Political Thought P- V	1. Understand the fundamental contours classical, western political philosophy, basic features of medieval political thought and shift from medieval to modern era. 2. Understand the Social Contract Theory and appreciate its implications on the perception of State in terms of its purposes and role. 3. Acquaint with the Liberal and Marxist philosophy and analyze some trends in Western Political Thought. 4. Critically analyse the evolution of western political thought
Electoral Politics and Voting Behaviour P-VI	1. Acquaint student with the structure and manner of functioning of Election Commission of India. 2. Understand the political issues in Electoral Politics. 3. Provide an overview on voter turnout, voting behavior in India. 4. Aware of the role of new media and technology in election campaign. 5. Develop an understanding of the required skills for data collection, research in election management.
Legislative Procedures and Practices P- VII	1. Make familiar with legislative procedures and practices. 2. Equip the students with the adequate skills of participation in deliberative processes and democratic decision making. 3. Understand complex policy issues, draft new legislation, analyze ongoing bills, make speeches and floor statements. 4. Provide skills to be part of a legislative support team and expose them to real life legislative work. 5. Enhance understanding of procedures, practices, different committees and motions in the House.

DEPARTMENT OF HORTICULTURE

S.No	Title of the paper	Course Outcomes
11	Fundamentalsof Horticulture and Soil Science P-1	1. Understand the scope and potential of horticultureproducts in India and Andhra Pradesh. 2. Classify the horticulture plants based on soil andclimate. 3. Illustrate different systems of planting in an orchard andpredict the number of plants in a given land. 4. Demonstrate the methods and types of training andpruning. 5. Explain the basics of soil science and justify the role of soil as a medium for plant growth 6. Explain about integrated nutrient management and demonstrate the skills of soil testing.
	Plant Propagation and Nursery Management P-II	1. Explain sexual and asexual propagation methods of plants. 2. Demonstrate skills on vegetative propagation of plants. 3. Demonstrate the techniques on raising of different types of nursery beds 4. Justify the role of various propagation structures used to raise horticulture plants. Understand the regulation to establish a plant nursery and quality parameters to be maintained. 5. Implement different routine/regular activities in a nursery. 6. Understand the economics of a plant nursery and can maintain necessary
	Basics of Vegetable Science (Olericulture) P-III	1. Distinguish the growing of vegetables according to season and climate. 2. Get detailed knowledge on cultivation aspects of different vegetables 3. Understand and explain the special intercultural operations done in vegetable crops. 4. Study of morphology and taxonomy of different vegetable crops 5. Study of different varieties of vegetable crops. 6. Identify the diseases and pests of vegetable crops and their management

	Basics of Fruit Science (Pomology) P-IV	1. Realize the value of fruits in terms of human nutrition and economy of nation. 2. Explain the potential fruit zones in various states of our country. 3. Classify the fruiting plants based on temperature requirements. 4. Acquire knowledge related to various cultivation practices for different fruit crops 5. Demonstrate the special intercultural operations done in fruit crops 6. Comprehend the knowledge on varieties of different fruit crops. 7. Examine the pests and diseases of fruit crops and develop skills to manage the same 8. Explain about Integrated Orchard Management 9. Develop knowledge on various entrepreneurial skills related to fruit science.
	Pests and Diseases P-V	1. Develop a critical understanding of insect pests and plant disease symptoms. 2. Examine and identify the pests and diseases of vegetable crops and their management 3. Examine and identify the pests and diseases of ornamental crops and their management 4. Examine and identify the pests and diseases of fruit crops and their management 5. Identify and classify various insect pests on horticultureplants. 6. Justify the significance of Integrated Plant Disease Management for horticultural crops 7. Classify the pesticides based on use, chemical nature, formulation, toxicity and action.
	Water Management in Horticultural Crops P-VI	1. Understand the importance of water for horticulture crops. 2. Explain different irrigation practices and factors influencing them. 3. Acquire skills on layout of sprinkler and drip irrigation. 4. Perform managerial skills related to water management in horticultural crop fields. 5. Demonstrate skills on efficient use of irrigation methods for different types of soils.

	Soil Fertility and Nutrient Management P-VII	1. Understand the role of macro and micro nutrients in plant nutrition. 2. Explain different types of manures, chemical and biofertilizers used for horticulture plants. 3. Acquire skills on nutrient deficiency symptoms and status of nutrients in plants. 4. Perform managerial skills related to integrated nutrient management in horticultural crop fields. 5. Demonstrate skills on efficient use of fertilizers for different types of horticulture crops

DEPARTMENT OF STATISTICS

S.No	Title of the Paper	Course Outcomes
12	Descriptive Statistics P-I	1. knowledge of Statistics and its scope and importancein various areas such as Medical, 2. Engineering, Agricultural and Social Sciences etc. knowledge of various types of data, their organizationand evaluation of summary measures 3. such as measures of central tendency and dispersion etc. 4. knowledge of other types of data reflecting quality characteristics including concepts of independence and association between two attributes, 5. insights into preliminary exploration of different types of data. 6. Knowledge of correlation, regression analysis, regression diagnostics, partial and multiple 7. correlations.
	Probability theoryand distributions P-II	1. Ability to distinguish between random and non-random experiments, 2. knowledge to conceptualize the probabilities ofevents including frequentist and axiomatic 3. approach. Simultaneously, they will learn the notionof conditional probability including the 4. concept of Bayes' Theorem, 5. knowledge related to concept of discrete and continuous random variables and their probability 6. distributions including expectation and moments,
	Statistical influence P-III	1. Concept of law large numbers and their uses 2. Concept of central limit theorem and its uses in statistics 3. Concept of random sample from a distribution, sampling distribution of a statistic, standard 4. error of important estimates such as mean and proportions, 5. knowledge about important inferential aspects such as point estimation, test of hypotheses 6. and associated concepts, 7. knowledge about inferences from Binomial, Poisson and Normal distributions as illustrations, 8. Concept about non-parametric method and some important non-parametric tests

	Sampling techniques and design of experiments P-IV	1. Introduced to various statistical sampling schemes such as simple, stratified and systematic sampling. 2. an idea of conducting the sample surveys and selecting appropriate sampling techniques, 3. Knowledge about comparing various sampling techniques. 4. carry out one way and two-way Analysis of Variance, understand the basic terms used in design of experiments, 5. Use appropriate experimental designs to analyze the experimental data.
	Applied Statistics-I P-V	1. Time series data, its applications to various fields and components of time series, 2. Fitting and plotting of various growth curves such as modified exponential, Gompertz and logistic curve, fitting of trend by Moving Average method, 3. Measurement of Seasonal Indices by Ratio-to-Trend, Ratio-to-Moving Average and Link Relative methods, 4. Applications to real data by means of laboratory assignments. 5. Interpret and use a range of index numbers commonly used in the business sector
	Quality and reliability P-VI	1. Perform calculations involving simple and weighted index numbers Understand the basic structure of the consumer price index and perform calculations involving its use various data collection methods enabling to have a better insight in policy making, planning and systematic implementation, 3. Construction and implementation of life tables, 4. Population growth curves, population estimates andprojections, 5. Real data implementation of various demographicconcepts as outlined above through practical assignments.

	Applied StatisticsII	1. Fitting and plotting of various growth curves such as modified exponential, Gompertz and logistic curve, fitting of trend by Moving Average method, 2. Measurement of Seasonal Indices by Ratio-to-Trend, Ratio-to-Moving Average and Link Relative methods 3. Time series data, its applications to various fields and components of time series, 4. Interpret and use a range of index

DEPARTMENT OF CHEMISTRY

S. No	Title of the Paper	Course Outcomes
13	Inorganic &Physical Chemistry P-I	1. Understand the basic concepts of p-block elements 2. Explain the difference between solid, liquid and gases in terms of intermolecular interactions. 3. Apply the concepts of gas equations, pH and electrolytes while studying other chemistry courses.
	Organic & General Chemistry P-II	1. 1. Understand and explain the differential behavior of Organic compounds based on fundamental concepts learnt. 2. Formulate the mechanism of organic reactions by Recalling and correlating the fundamental properties of the reactants involved. 3. Learn and identify many organic reaction mechanisms including Free Radical 4. Substitution, Electrophilic Addition and Electrophilic Aromatic Substitution. 5. Correlate and describe the stereochemical properties of organic compounds and reactions.
	Organic Chemistry & Spectroscopy P-III	1. Understand preparation, properties and reactions of haloalkanes, halo arenes and Oxygen containing functional groups. 2. Use the synthetic chemistry learnt in this course to do functional group transformations. 3. To propose plausible mechanisms for any relevant reaction.
	Inorganic, Organic & Physical Chemistry P-IV	1. To learn about the laws of absorption of light energy by molecules and the subsequent photo chemical reactions. 2. To understand the concept of quantum efficiency and mechanisms of photochemical reactions.
	Inorganic &Physical Chemistry P-V	1. Understand concepts of boundary conditions and quantization, probability distribution, most probable values, uncertainty and expectation values 2. Application of quantization to spectroscopy. 3. Various types of spectra and the irusein structure
	Analytical Methods in Chemistry-I(6B) P-VI	1. Identify the importance of solvent extraction and ion exchange method. 2. Acquire knowledge on the basic principles of volumetric analysis and gravimetric analysis. 3. Demonstrate the usage of common laboratory apparatus used in quantitative analysis.

	Analytical Methods in Chemistry-II(7B) P-VII	1. Identify the importance of chromatography in the separation and identification of compounds in a mixture 2. Acquire a critical knowledge on various chromatographic techniques. 3. Demonstrate skills related to analysis of water using different techniques. 4. Understand the principles of Spectro chemistry in the determination of metal ions. 5. Comprehend the applications of atomic spectroscopy.

DEPARTMENT OF BOTANY

S.No	Title of the Paper	Course Outcomes
14	Fundamentals of Microbes and Non-vascular Plants (Viruses, Bacteria, Fungi, Lichens, Algae and Bryophytes. I P-I	1. Explain origin of life on the earth. 2. Illustrate diversity among the viruses and prokaryotic organisms and can categorize them. 3. Classify fungi, lichens, algae and bryophytes based ontheir structure, reproduction and life cycles 4. Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi. 5. Recall and explain the evolutionary trends among amphibians of plant kingdom for their shift to land habitat. 6. Evaluate the ecological and economic value of microbes, thallophytic and bryophytes.
	Basics of Vascular plants and Phytogeography (Pteridophytes, Gymnosperms, Taxonomy of Angiosperms and Phytogeography) P-II	1. Classify and compare Pteridophytes and Gymnosperms based on their morphology, anatomy, reproduction and life cycles. 2. Justify evolutionary trends in tracheophytes to adapt for land habitat. 3. Explain the process of fossilization and compare the characteristics of extinct and extant plants. 4. Critically understand various taxonomical aids for identification of Angiosperms. 5. Analyze the morphology o their localities and recognize their families. 6. Evaluate the ecological, ethnic and economic value of different tracheophytes and summarize their goods and services for human welfare.
	Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity P-III	1. Understand on the organization of tissues and tissue systems in plants. 2. Illustrate and interpret various aspects of embryology. 3. Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities. 4. Appraise various qualitative and quantitative parameters to study the population 5. and community ecology. 6. Correlate the importance of biodiversity and consequences due to its loss. 7. Enlist the endemic/endangered flora and fauna from two biodiversity hot spots 8. In India and assess strategies for their conservation.

	Plant Physiology and Metabolism P-IV	1. Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants. 2. Evaluate the role of minerals in plant nutrition and their deficiency symptoms. 3. Interpret the role of enzymes in plant metabolism. 4. Critically understand the light reactions and carbon assimilation processes 5. responsible for synthesis of food in plants. 6. Analyze the biochemical reactions in relation to Nitrogen and lipid metabolisms. 7. Evaluate the physiological factors that regulate growth and development in plants. 8. Examine the role of light on flowering and explain physiology of plants under stress conditions.
	Cell Biology, Genetics and Plant Breeding P- V	1. Distinguish prokaryotic and eukaryotic cells and design the model of a cell. 2. Explain the organization of a eukaryotic chromosome and the structure of genetic material. 3. Demonstrate techniques to observe the cell and its components under a microscope. 4. Discuss the basics of Mendelian genetics, its variations and interpret inheritance of traits in living beings. 5. Evaluate the structure, function and regulation of genetic material. 6. Understand the application of principles and modern techniques in plant breeding.
	Plant Propagation (6A)	1. Explain various plant propagation structures and their utilization. 2. Understand advantages and disadvantages of vegetative, asexual and sexual plant propagation methods. 3. Assess the benefits of asexual propagation of certain economically valuable plants using apomictics and adventive polyembryony. 4. Demonstrate skills related to vegetative plant propagation techniques such as cuttings,layering, grafting and budding. 5. Apply a specific macro-propagation technique for a given plant species
	Seed Technology(7A)	1. Explain the causes for seed dormancy and methods to break dormancy. 2. Understand critical concepts of seed processing and seed storage procedures. 3. Acquire skills related to various seed testing methods. 4. Identify seed borne pathogens and prescribe methods to control them. 5. Understand the legislations on seed production and procedure of seed certification.

DEPARTMENT OF BIOTECHNOLOGY

S.No	Title of the Paper	Couse Outcomes
15	Biomolecules,Bioenergetics, Biostatistics, Analytical Techniques P-I	1. To learn about the chemistry and structure of biomolecules 2. Understand the energy producing pathways of glycolsis, Krebs cycle, oxidative phosphorylation, and fatty acid oxidation 3. Study statistical reasoning, probability, random variables, proportions, means and regressions 4. Apply the knowledge of chromatography to separate constituents from a complex mixture.
	Microbiology, Cellbiology, Molecular Biology P-II	1. Apply the knowledge to understand the microbial physiology and to identify the microorganisms 2. Understand the basic components of prokaryotic and 3. eukaryotic cells 4. Understand how the cellular components are used to generate and utilize energy in cells 5. Understand and analyze the concepts of DNA replication and enzymology 6. Understand and describe the process of Protein synthesis and regulation of Prokaryotic gene expression
	BiophysicalTechniques P-III	1. Understand principles and applications of centrifugation, chromatography techniques like Paper, Thin layer, Gel filtration, Ion exchange and Affinity. 2. Understand the principles and applications of Electrophoresis, Colorimeter, Spectrophotometer 3. Principles of tracer technique, advantages and limitations, applications of isotopes in biotechnology 4. Measurement of radioactivity
	Immunology and Vaccinology P-IV	1. Understand the concepts of Innate and Acquired Immunity, Hap tens and monoclonal antibodies 2. Describe the immunological reactions like agglutination, Immune precipitation and apply the knowledge in Immunodiagnostics 3. Understand immune cells and organs, antigen-antibody reactions 4. Describe MHC complex, Antibody diversity, Hypersensitivity and autoimmunity 5. Transplantation Immunology, Cancer and Immune system 6. Understand and analyze the concepts of DNA replication and enzymology

	Molecular Biology P-V	1. Understand and analyze the concepts of DNA replication and enzymology 2. Understand and describe the process of Protein synthesis and 3. regulation of Prokaryotic gene expression 4. Explain Gene regulation through Open on concept, and regulatory elements
	Paper-VI Techniques in nursery development	1. Good nursery management is to supply elite planting material for establishment of new orchads 2. To increase the production and productivity of fruit crops
	Paper-VII Hydrphonics cultivation	1. The Benefits of Hydroponics include upto 90% more efficient use of water 2. Production increses 3to 10 times in the same amount of space. 3. There is no need for Herbicides or Pesticideds,they are safe from weeds and insects

DEPARTMENT OF MICROBIOLOGY

S. No	Title of the Paper	Course Outcomes
16	Introduction of Microbiology and Microbial Diversity P-I	1. Apply knowledge of the standard rules of classification systems to categorize microorganisms. 2. Appreciate and explain the dynamic and ever developing nature of the field of microbial taxonomy and systematic.
	Microbial Physiology and Biochemistry P-II	1. Apply the knowledge to understand the microbial physiology and to identify the microorganisms. 2.Understand the regulation of biochemical pathway andpossible process modifications for improved control over microorganisms for microbial product synthesis.
	Molecular biology and Microbial Genetics P-III	1. Understanding of gene structure, expression and regulation of gene expression in both prokaryotes and eukaryotes for application in molecular research. 2. Explain principles/concept of Prokaryotic and Eukaryotic genetics, Viral genetics and application in research. 3. Mutagenesis, Mutation and mutants and their significancein microbial evolution. 4. Application of bacterial and eukaryotic plasmids in research.
	Medical Microbiology and Immunology P-IV	1. Explains the mechanisms of immunological responses. 2. Apply the principles of cellular ontogeny and the gene rearrangement to understand the novel and complex immune system. 3. Explain the various pathological events during the progression of an infectious disease. 4. Apply the principle of epidemiological sciences in studying the underlying mechanisms of spread of disease and controls required thereof to combat the spread of pathogens
	Microbial Ecologyand Industrial Microbiology P-V	1. Understand the concept of ecological valence and the relationship of microorganisms to abiotic and biotic environmental factors. 2. Ability the principle of management and controls on the microbial processes in industrial settings. 3. Ability the principles of physiological understanding in improvement of industrial processes.

	Microbial Biotechnology P-VI	1. Ability to use techniques and instruments involved in the study of microorganisms and their products. 2. Significance in biogeochemical cycling, industry, pharma and degradation of xenobiotics. 3. Apply the knowledge of various techniques in developing technology for sustainable development. 4. Explain commercialization of a technology.
	Microbial Quality Control in Food and Pharma industries P-VII	1. Ability the principle of management and controls on the microbial processes in industrial settings. 2. Ability the principles of physiological understanding in improvement of industrial processes

DEPARTMENT OF COMMERCE ((Gen &CA))

S. No	Title of the Paper	Course Outcomes
17	Fundamentals of Accounting -IA	1. Identify transactions and events that need to be recorded in the books of accounts. 2. Equip with the knowledge of accounting process and preparation of final accounts of sole trader. Develop the skill of recording financial transactions and preparation of reports in accordance with GAAP. 3. Analyze the difference between cash book and pass book in terms of balance and make reconciliation. 4. Critically examine the balance sheets of a sole trader for different accounting periods. 5. Design new accounting formulas & principles for business organizations.
	Business Organization and Management-IB	1. Understand different forms of business organizations. 2. Comprehend the nature of Joint Stock Company and formalities to promote a Company. 3. Describe the Social Responsibility of Business towards the society. 4. Critically examine the various organizations of the business firms and judge the best among them. Design and plan to register a business firm. Prepare different documents to register a company at his own. 5. Articulate new models of business organizations
	Business Environment -IC	1. Understand the concept of business environment. 2. Define Internal and External elements affecting business environment. 3. Explain the economic trends and its effect on Government policies. 4. Critically examine the recent developments in economic and business policies of the Government. Evaluate and judge the best business policies in Indian business environment. 5. Develop the new ideas for creating good business environment.

Financial Accounting -2A	1. Understand the concept of consignment and learn the accounting treatment of the various aspects of consignment. 2. Analyze the accounting process and preparation of accounts in consignment and joint venture. Distinguish Joint Venture and Partnership and to learn the methods of maintaining records under Joint Venture. 3. Determine the useful life and value of the depreciable assets and maintenance of Reserves in business entities. 4. Design an accounting system for different models of businesses at his own using the principles of existing
Business Economics-2B	1. Describe the nature of economics in dealing with the issues of scarcity of resources. 2. Analyze supply and demand analysis and its impact on consumer behavior. 3. Evaluate the factors, such as production and costs affecting firms' behaviour. 4. Recognize market failure and the role of government in dealing with those failures. 5. Use economic analysis to evaluate controversial issues and policies. 6. Apply economic models for managerial problems, identify their relationships, and formulate the decision-making tools to be applied for business.
Banking Theory &Practice-2C	1. Understand the basic concepts of banks and functions of commercial banks. 2. Demonstrate an awareness of law and practice in a banking context. 3. Engage in critical analysis of the practice of banking law. 4. Organize information as it relates to the regulation of banking products and services. 5. Critically examine the current scenario of Indian Banking system. 6. Formulate the procedure for better service to the customers from various banking innovations.
Advanced Accounting -3A	1. Understand the concept of Non-profit organizations and its accounting process 2. Comprehend the concept of single-entry system and preparation of statement of affairs 3. Familiarize with the legal formalities at the time of dissolution of the firm 4. Prepare financial statements for partnership firm on dissolution of the firm. 5. Employ critical thinking skills to understand the difference between the dissolution of the firm and dissolution of partnership

Business Statistics-3B	1. Understand the importance of Statistics in real life 2. Formulate complete, concise, and correct mathematical proofs. 3. Frame problems using multiple mathematical and statistical tools, measuring relationships by using standard techniques. 4. Build and assess data-based models. 5. Learn and apply the statistical tools in day life. 6. Create quantitative models to solve real world problems in appropriate contexts.
Marketing-3C	1. Develop an idea about marketing and marketing environment. 2. Understand the consumer behavior and market segmentation process. 3. Comprehend the product life cycle and product line decisions. 4. Know the process of packaging and labelling to attract the customers. 5. Formulate new marketing strategies for a specific new product. 6. Develop new product line and sales promotion techniques for a given product. 7. Design and develop new advertisements to given products.
Corporate Accounting-4A	1. Understand the Accounting treatment of Share Capital and aware of process of book building. 2. Demonstrate the procedure for issue of bonus shares and buyback of shares. 3. Comprehend the important provisions of Companies Act, 2013 and prepare final accounts of a company with Adjustments. 4. Participate in the preparation of consolidated accounts for a corporate group. 5. Understand analysis of complex issues, formulation of well-reasoned arguments and reaching better conclusions. 6. Communicate accounting policy choices with reference to relevant laws and accounting standards.

Cost and Management Accounting -4B	1. Understand various costing methods and management techniques. 2. Apply Cost and Management accounting methods for both manufacturing and service industry. Prepare cost sheet, quotations, and tenders to organization for different works. 3. Analyze cost-volume-profit techniques to determine optimal managerial decisions. 4. Compare and contrast the financial statements of firms and interpret the results. 5. Prepare analysis of various special decisions, using relevant management techniques
Income Tax-4C	1. Acquire the complete knowledge of the tax evasion, tax avoidance and tax planning. 2. Understand the provisions and compute income tax for various sources. 3. Grasp amendments made from time to time in Finance Act. 4. Compute total income and define tax complicacies and structure. 5. Prepare and File IT returns of individual at his own.
Business Laws-4D	1. Understand the legal environment of business and laws of business. 2. Highlight the security aspects in the present cyber-crime scenario. 3. Apply basic legal knowledge to business transactions. 4. Understand the various provisions of Company Law. 5. Engage critical thinking to predict outcomes and recommend appropriate action on issues relating to business associations and legal issues. 6. Integrate concept of business law with foreign trade.
Auditing-4E	1. Understanding the meaning and necessity of audit in modern era 2. Comprehend the role of auditor in avoiding the corporate frauds 3. Identify the steps involved in performing audit process 4. Determine the appropriate audit report for a given audit situation 5. Apply auditing practices to different types of business entities 6. Plan an audit by considering concepts of evidence, risk and materiality

Goods and Service Tax- 4F	1. Understand the basic principles underlying the Indirect Taxation Statutes. 2. Examine the method of tax credit. Input and Output Tax credit and Cross Utilization of Input Tax Credit. 3. Identify and analyze the procedural aspects under different applicable statutes related to GST. 4. Compute the assessable value of transactions related to goods and services for levy and determination of duty liability. 5. Develop various GST Returns and reports for business transactions in Tally.
Advanced Corporate Accounting (16A)	1. Understand Corporate Accounting environment 2. Record Transactions related to Purchase of Business, Amalgamation and Reconstruction 3. Analyze the situations of Purchase of Business and Liquidation 4. Create formulas and calculations relating to Amalgamation, Internal Reconstruction and Holding company accounts 5. Acquire skills of Accounting Procedure of Advanced Corporate Accounting Environment.
Software Solutions to Accounting (17A)	1. Understand the technical environment of accounting softwares. 2. Highlight the major accounting softwares in India. 3. Apply basics of accounting softwares into business firms for accounting transactions. 4. Understand the various versions of Tally and other softwares. 5. Integrate the concept of different Accounting softwares for accounting purpose 6. Design new approaches for use of accounting software environment.
Life Insurance with Practice (20B)	1. Understand the Features of Life Insurance, schemes and policies and insurance companies in India 2. Analyze various schemes and policies related to Life Insurance sector 3. Choose suitable insurance policy for given situation and respective persons 4. Acquire Insurance Agency skills and other administrative skills

General Insurance Procedure and Practice (21B)	1. Understand the Features of General Insurance and Insurance Companies in India 2. Analyse various schemes and policies related to General Insurance sector 3. Choose suitable insurance policy under Health, Fire, Motor, and Marine Insurances 4. Acquire General Insurance Agency skills and administrative skills
Income Tax Assessment Procedures and Practice (18C)	1. Understand the basic concepts in computation of tax liability under all heads of income of the individuals. 2. Analyse the clubbing provisions, aggregate income after set-off and carry forward of losses under the Income Tax Act. 3. Compute taxable income and tax liability of individuals and firms. 4. Acquire the ability to file online returns of income. 5. Acquire skills of TDS/TCS and online filing of Tax returns.
Goods And Services Tax With Tally (19C)	1. Understand the concept of Liability and Payment of GST 2. Create a new company in Tally with GST components and establish environment for GST Voucher entry. 3. Comprehend the utilization of input tax credit, and the reverse charge mechanism in GST 4. Acquire Skills of preparation of GST Returns in accordance with GST Law and Tally 5. Acquire skill of online payment of GST through GST Portal.
Big data Analytics using R (6A)	1. Understand data and classification of digital data. 2. Understand Big Data Analytics. 3. Load data in to R. 4. Organize data in the form of R objects and manipulate them as needed. 5. Perform analytics using R programming.
Data Science using Python (7A)	1. Understand basic concepts of data science 2. Understand why python is a useful scripting language for developers. 3. Use standard programming constructs like selection and repetition. 4. Use aggregated data (list, tuple, and dictionary). 5. Implement functions and modules.

DEPARTMENT OF ECONOMICS

S. No	Title of the Paper	Course Outcomes
18	MICROECONOMIC ANALYSIS – P-I	1. Remembers and states in a systematic way (Knowledge) a. the differences between microeconomic analysis and macroeconomic analysis b. various laws and principles of microeconomic theory under consumption, 2. Explains (understanding) a. various terms and concepts relating to microeconomic analysis with the help of examples of real life b. consumer's equilibrium and consumer's surplus using indifference curve analysis. c. various laws and principles of consumption, production, and income distribution d. determination of price and output discriminating different market conditions in short term and long term 3. Critically examines using data and figures (analysis and evaluation) a. various laws and principles of microeconomic analysis and market conditions b. application of the concept of demand elasticity and its relation with Average and Marginal Revenue c.the relationship between average and marginal cost/revenue both in long term and 4. Draws critical diagrams and graphs to explain and examine the application of various laws and principles of microeconomic analysis
	MACROECONOMIC ANALYSIS- P-II	1. Remembers and states in a systematic way (knowledge) Various concepts, definitions,laws and principles of macroeconomic theory with referenceto income, employment, money, banking and finance 2. Explains (understanding) a. the difference between various concepts and components of national income with illustrations and methods of measuring national income b. various terms, concepts, laws and principles, theories relating to income, employment, consumption, investment, money, price-level and phases of trade cycles c. functions of commercial banks and central bank, creation and control of credit 3. Critically examines using data and figures (analysis and evaluation) a. in order to understand the interrelationship between various components of national income

		b. the theories of macroeconomics with reference to their assumptions, implications and applicability c. Empirical evidences of Consumption and Investment Functions and factors influencing them 4. Draws critical formulae, diagrams and graphs. a. consumption and investment functions; concepts of multiplier and accelerator b. price indices, inflation and trade cycles
	DEVELOPMENT ECONOMICS P-III	1. Remembers and states in a systematic way (Knowledge) Various concepts and definitions and indicators relating to economic growth and Development including recent developments 2. Explains (understanding) a. Distinction between growth and development with examples b. Characteristics of developing and developing economies and distinction between the two c. factors contributing to development, Choice of Techniques and a few important models and strategies of growth 3. Critically examines using data and figures (analysis and evaluation) a. the theoretical aspects of a few models and strategies of economic growth b. role and importance of various financial and other institutions in the context of India's economic development 4. Draws critical diagrams and graphs. a. to explain the models and strategies b. to highlight empirical evidences to support the strategies
	ECONOMIC DEVELOPMENT- INDIA AND ANDHRA PRADESH P-IV	1. Remembers and states in a systematic way (Knowledge) a. leading issues of Indian economic development with reference to potential for growth, obstacles and policy responses b. Objectives, outlays and achievements of economic plans and growth strategies 2. Explains (understanding) a. Available Resources, demographic issues, general problems of poverty and unemployment and relevant policies b. Sector specific problems, remedial policies and their effectiveness relating to Agriculture and Industrial Sectors of Indian and AP economy and infrastructure issues of AP economy

		c. Indian Tax system, recent changes, issues of public expenditure and public debt, recent finance commissions and devolution of funds d. Major issues of economic development of Andhra Pradesh after bifurcation and Central assistance 3. Critically examines using data and figures (analysis and evaluation) a.Leading issues of current importance relating to India and AP economy, major policies and programmes b. Covid– 19 and its impact on Indian economy 4. Uses official statistical data and reports including tables and graphs a. To explain the achievements of Indian economy with reference to the objectives of planning and policy and make critical evaluation
	STATISTICAL METHODS FOR ECONOMICS P-V	1. Remembers and states in a systematic way (Knowledge) a. the definitions, terms and their meaning relating to statistical methods b. various formulae used to measure central tendency, correlation regression and Indices 2. Explains (understanding) a. Importance of statistics and its applications b. The method of classification of primary data c. Uses of Correlation and Regression analysis, time series and index numbers in economic analysis 3. Analyses and solves usinggiven data and information (analysis and evaluation) a. different kinds of statistical problems using various principles and formulae relating to central tendency, correlation, regression, time series and indices b. to interpret data and suggest solutions to economic problems 4. Draws critical diagrams and graphs. a. Histogram, Frequency Polygon and Frequency Curve b. More than cumulative and less than cumulative frequency curves (Ogive) c. Different types of Bar diagrams d. Pie Diagram and its uses in economic analysis
	Rural Entrepreneurship (6A) – P-VI	1. Explain the basic theories and essentials of entrepreneurship; 2. Identify and analyze the entrepreneurship opportunities available in local rural area; 3. Apply the theories of entrepreneurship to the conditions of local rural area and formulate appropriate business ideas; 4. Demonstrate practical skills that will enable them to start rural entrepreneurship.

	Urban Entrepreneurship and MSMEs(6B) Paper-VI	1.Explain the basic theories and essentials of entrepreneurship 2.Identify and analyze the entrepreneurship opportunities available in local urban area. 3. Apply the theories of entrepreneurship to the conditions of local urban area andformulate appropriate business ideas. 4. Demonstrate practical skills that will enable them to start urban entrepreneurship
	Retail and Digital Marketing (7B) Paper-VII	1. Explain the concepts and principles about the retail and digital marketing; 2. Identify and analyse the opportunities related to retail and digital marketing availablein the local area; 3. Apply the concept to formulate the new strategies related to retail and digitalmarketing; 4. Demonstrate the practical skills required to get employment in retail and digitalmarketing or to start own digital marketing.

LIFE SKILL COURSES

S. No	Title of the Paper	Course Outcomes
1	ANALYTICAL SKILLS	1. Understand the basic concepts of arithmetic ability, quantitative ability, logical reasoning, business computations and data interpretation and obtain the associated skills. 2. Acquire competency in the use of verbal reasoning. 3. Apply the skills and competencies acquired in the related areas Solve problems pertaining to quantitative ability, logical reasoning and verbal ability inside and outside the campus.
	BASIC COMPUTER APPLICATIONS	1. Demonstrate basic understanding of computer hardware and software. 2. Apply skills and concepts for basic use of a computer. 3. Identify appropriate tool of MS office to prepare basic documents, charts, spreadsheets and presentations. 4. Create personal, academic and business documents using MS office. 5. Create spreadsheets, charts and presentations. 6. Analyze data using charts and spread sheets.
	ELEMENTARY STATISTICS	1. To understand the concept of Statistics and its merits and demerits. Distinguishing primary and secondary data. Classification, Tabulation and Pictorial representation of data. 2. To understand the basic nature of data and how a single value describes the entire data set .Measuring the degree of departure of a distribution from symmetry and reveals the direction of scatterdness of the items. 3. To understand the spread of the data and to draw conclusions from the comparison of averages. 4. To understand the concept of correlation and regression and to learn the degree of association between two variables and establishing relationship between the variables.
	ENTREPRENEURSHIP DEVELOPMENT	2. Understand the concept of Entrepreneurship, its applications and scope. 3. Know various types of financial institutions that help the business at Central, State and Local level 4. Understand Central and State Government policies, Aware of various tax incentives, 5. concessions 6. Applies the knowledge for generating a broad idea for a starting an enterprise/start up 7. Understand the content for preparing a Project Report for a startup and differentiate between 8. financial, technical analysis and business feasibility

ENVIRONMENTAL EDUCATION	1. Understand the nature, components of an ecosystem and that humans are an integral part of nature. 2. Realize the importance of environment, the goods and services of a healthy biodiversity, dependence of humans on environment. 3. Evaluate the ways and ill effects of destruction of environment, population explosion on ecosystems and global problems consequent to anthropogenic activities. 4. Discuss the laws/ acts made by government to prevent pollution, to protect biodiversity and environment as a whole. 5. Acquaint with international agreements and national movements, and realize citizen's role in protecting environment and nature.
HEALTH & HYGIENE	1. How can we use available information to optimize our diet? 2. Can nutrition be used for a healthy life? 3. Is there a one-size-fits-all "good" diet or should we individualize our dietary goals? 4. Disaster management and responsiveness of public in pandemic and epidemic diseases 6. Assess the impact of policies on health and hygiene Health measures to consider while travelling 8. Awareness in public through digital media viz., mobile apps
HUMAN VALUES AND PROFESSIONAL ETHICS (HVPE)	1. Understand the significance of value inputs in a classroom and start applying them in their life and profession 2. Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual, etc. 3. Understand the value of harmonious relationship based on trust and respect in their life and profession 4. Understand the role of a human being in ensuring harmony in society and nature. 5. Distinguish between ethical and unethical practices, and start working out the strategy 6. to actualize a harmonious environment wherever they work.
INDIAN CULTURE & SCIENCE	1. Understand the evolution of India's culture 2. Analyze the process of modernization of Indian society and culture from past to future 3. Comprehend objective education and evaluate scientific development of India in various spheres 4. Inculcate nationalist and moral fervor and scientific temper

	INFORMATION & COMMUNICATION TECHNOLOGY	1. Understand the literature of social networks and their properties. 2. Explain which network is suitable for whom. 3. Develop skills to use various social networking sites like twitter, flickr, etc. 4. Learn few GOI digital initiatives in higher education. 5. Apply skills to use online forums, docs, spreadsheets, etc for communication, collaboration and research. 6. Get acquainted with internet threats and security mechanisms.
	PERSONALITY ENHANCEMENT & LEADERSHIP	1. Develop comprehensive understanding of personality 2. Know how to assess and enhance one's own personality 3. Comprehend leadership qualities and their importance 4. Understand how to develop leadership qualities

SKILL DEVELOPMENT COURSES

S. No	Title of the Paper	Course Outcomes
2	STREAM-A (Arts) TOURISM GUIDANCE Sem-I	1. Understand the basic tourism aspects 2. Comprehend the requirements, role and responsibilities of profession of a Tourist Guide 3. Apply the knowledge acquired in managing different groups and guiding in a tour 4. Explain basic values related to tourism and heritage
	SURVEY & REPORTING Sem-II	1. Understand the basics of survey and reporting needs and methods 2. Comprehend designing of a questionnaire 3. Conduct a simple and valid survey and Collect data 4. Organize and interpret data and prepare and submit report.
	SOCIAL WORK METHODS Sem-II	1. Understand the basic concepts relating to social work practice, values, principles of social work and social problems in India 2. List out different approaches of providing help to the people in need. 3. Acquaint the process of primary methods of social work 4. Get to know the skills of working with individuals, groups and communities.
	FINANCIAL MARKETS Sem-III	1. Acquire knowledge of financial terms 2. Know the concepts relating to and markets and different avenues of investment 3. Understand the career skills related to Stock Exchanges 4. Comprehend the personal financial planning and money market skills
	STREAM-B (Commerce) INSURANCE PROMOTION Sem-I	1. Understand the field level structure and functioning of insurance sector and its role in protecting the risks 2. Comprehend pertaining skills and their application for promoting insurance coverage 3. Prepare better for the Insurance Agent examination conducted by IRDA 4. Plan 'promoting insurance coverage practice' as one of the career options.
	BUSINESS COMMUNICATION Sem-II	1. Understand the types of business communication and correspondence 2. Comprehend the processes like receiving, filing and replying 3. Acquire knowledge in preparing good business communications 4. Acquaint with organizational communication requirements and presentations.

LOGISTICS AND SUPPLY CHAIN MANAGEMENT Sem-II	1. Summarize relationship between marketing and Logistic Management 2. Understand the concepts of Supply Chain Management in connection with products. 3. Understanding various types of seller and suppliers 4. Evaluate best logistic method among all means of transport operations 5. Analysis of different distribution strategies - online and physical distribution 6. Compare the Logistics in National and International Scenario. 7. Design and develop new methods and models of Logistics in SCM
RETAILING Sem-III	1. Know the retailing business, its growth in India and social impact 2. Understand the and organization and supply in retailing 3. Comprehend the opportunities and challenges in retailing 4. Learn the functions that support outlet operations, sales and services 5. Create a shopping experience model that builds customer loyalty and business promotion
STREAM-C (Science) ELECTRICAL APPLIANCES Sem-I	1. Acquire necessary skills/hand on experience/ working knowledge on multimeters, galvanometers, ammeters, voltmeters, ac/dc generators, motors, transformers, single phase and three phase connections, basics of electrical wiring with electrical protection devices. 2. Understand the working principles of different household domestic appliances. 3. Check the electrical connections at house-hold but will also learn the skill to repair the electrical appliances for the general troubleshoots and wiring faults.
PLANT NURSERY Sem-I	1. Understand the importance of a plant nursery and basic infrastructure toestablish it. 2. Explain the basic material, tools and techniques required for nursery. 3. Demonstrate expertise related to various practices in a nursery. 4. Comprehend knowledge and skills to get an employment or to become an entrepreneur in plant nursery sector.
SOLAR ENERGY Sem-II	1. Acquire knowledge onsolarradiation principles with respect to solar energy estimation. 2. Get familiarized with various collecting techniques of solar energy and its storage 3. Learn the solar photovoltaic technology principles and different types of solar cells for energy conversion and different photovoltaic applications.

		4. Understand the working principles of several solar appliances like Solar cookers, Solar hot water systems, Solar dryers, Solar Distillation, Solar greenhouses
	DAIRY TECHNOLOGY SemII	1. Understand the pre-requisites for starting a Dairy farm 2. Recognize different breeds of Cows & buffaloes following safety precautions. 3. Prepare and give recommended feed and water for livestock 4. Maintain health of livestock along with productivity 5. Vaccination of cattle, nutrients requirements 6. Entrepreneurship i.e., Effectively market dairy products 7. Ensure safe and clean dairy farm and Standard safety measures to be taken in establishing am industry 8. Efficiently start and manage to establish or develop a Dairy Industry
	POULTRY FARMING Sem-III	1. Understand the field level structure and functioning of insurance sector and its role in protecting the risks 2. Comprehend pertaining skills and their application for promoting insurance coverage 3. Prepare better for the Insurance Agent examination conducted by IRDA 4. Plan 'promoting insurance coverage practice' as one of the career options.