GOVERNMENT COLLEGE FORMEN, KURNOOL

Accredited with NAAC '*B*$^{+}$' *G*rade

Course Outcomes (UG)

ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION (A Statutory body of the Government of Andhra Pradesh)

CBCS – UG SYLLABUS SUBJECT REVIEW COMMITTEE

w.e.f 2020-21 Academic Year)

DEPARTMENT OF ENGLISH

S. No	Title of the Paper	Course Outcomes
1	PAPER – I: 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
	PAPER – II: 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

DEPARTMENT OF TELUGU

S. No	Title of the Paper	Course Outcomes
2	General Telugu Paper- I Praacheena telugu kavithvam	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 the knowledge of classical Literature and trends. 3. Students cultivate the social mobilization and awareness through literature. 4. Student will get the language skills; those are LSRW and develop creative writing on contemporary social issues.

	General Telugu Paper- II Aadhunika telugu saahithyam	**1.** Students gain the knowledge in modern literature and itdevelops 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 through Telugu Language. **5.** Students will get the knowledge of different literary types and their social purpose. **6.** Student will get knowledge from modern literature and it will help to get employment through competitive exams.

DEPARTMENT OF HINDI

S. No	Title of the Paper	Course Outcomes
3	Hindi Sahitya Ka Itihas	1. Concept of History of Hindi Literature of beginning period (Aadikaal) and medieval period (Madhyakaal) 2. Ability to understand the development of Hindi language andliterature 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.
	Short Stories	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.

DEPARTMENT OF ZOOLOGY

S. No	Title of the Paper	Course Outcomes
4	PAPER – I: ANIMAL DIVERSITY – BIOLOGY OF NONCHORDATES	1. Describe general taxonomic rules on animal classification 2. Classify Protozoa to Coelenterata with taxonomic keys 3. Classify Phylum Platy helmninthes 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
	PAPER – II: ANIMAL DIVERSITY – BIOLOGY OF CHORDATES	1. Describe general taxonomic rules on animal classification of chordates 2. Classify Protochordata to Mammalia with taxonomic keys 3. Understand Mammals with specific structural adaptations 4. Understand the significance of dentition and evolutionary significance 5. Understand the origin and evolutionary relationship of different phyla from Prochordata to mammalia.

DEPARTMENT OF HISTORY

S. No	Title of the Paper	Course Outcomes
5	PAPER – I: ANCIENT INDIAN HISTORY & CULTURE (from Indus Valley Civilization to 13th Cen A.D)	1. Identify and define various kinds of sources and understand how history books are shaped 2. Compare and contrast various stages of progress from IVC to Vedic age and analyze the Jain, Buddhist and Vedic faiths 3. Increase the awareness and appreciation of Transition from Territorial States to Emergence of Empires 4. Analyze the emergence of the Mauryan and Gupta empires during the "classical age" in India 5. Evaluate the key facets of ancient society, polity and culture in South India—the feudalism, and the rise of technology and commerce. 6. Critically examine the nature of monarchic rule and develop an comprehensive understanding of cultural evolution during ancient period 7. Visualize where places are in relation to one another through map pointing
	PAPER – II: MEDIEVAL INDIAN HISTORY & CULTURE (1206 A.D to 1764 A.D)	1. Understand the socio, economic and cultural conditions of medieval India 2. Describe the advent of Islam in India and study the traces of political and cultural expansion of Turks & Afghans 3. Explain the Administration and art and architecture of Vijayanagar Rulers, Mughals and also analyse the rise of the Marathas and the contribution of Shivaji 4. Evaluate the establishment of the British rule in India and understand the dangerous consequences disunity at all levels 5. Analyze the emergence of composite culture in Indian 6. Visualize where places are in relation to one another through map pointing

DEPARTMENT OF ECONOMICS

S. No	Title of the Paper	Course Outcomes
6	PAPER – I: MICROECONOMIC ANALYSIS	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. 3. 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 4. 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 5. Draws critical diagrams and graphs to explain and examine the application of various laws and principles of microeconomic analysis
	PAPER – II: MACROECONOMIC ANALYSIS	1. Remembers and states in a systematic way (knowledge) Various concepts, definitions, laws and principles of macroeconomic theory with reference to 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

DEPARTMENT OF COMMERCE

S. No	Title of the Paper	Course Outcomes
7	PAPER – IA :FUNDAMENTALS OF ACCOUNTING	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. 3. Develop the skill of recording financial transactions and preparation of reports in accordance with GAAP. 4. Analyze the difference between cash book and pass book in terms of balance and make reconciliation. 5. Critically examine the balance sheets of a sole trader for different accounting periods. 6. Design new accounting formulas & principles for business organizations.
	PAPER – IB: BUSINESS ORGANIZATION AND MANAGEMENT	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. 5. Design and plan to register a business firm. Prepare different documents to register a company at hisown. 6. Articulate new models of business organizations.
	PAPER – 1C: BUSINESS ENVIRONMENT	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. 5. Evaluate and judge the best business policies in Indian business environment. 6. Develop the new ideas for creating good business environment.

	PAPER – 2A: FINANCIAL ACCOUNTING	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. 3. Distinguish Joint Venture and Partnership and to learn the methods of maintaining records under Joint Venture. 4. Determine the useful life and value of the depreciable assets and maintenance of Reserves in business entities. 5. Design an accounting system for different models of businesses at his own using the principles of existing accounting system.
	PAPER – 2B: BUSINESS ECONOMICS	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.
	PAPER – 2C:BANKING THEORY AND PRACTICE	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.

DEPARTMENT OF COMPUTER SCIENCE

S. No	Title of the Paper	Course Outcomes
8	PAPER – I: PROBLEM SOLVING IN C	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 towrite a „C“ language program.
	PAPER – II: DATA STRUCTURES USING C	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 4. Have knowledge on Data Structures basic operations like insert, delete, search, update and traversal 5. Design and develop programs using various data structures 6. Implement the applications of algorithms for sorting, pattern matching etc.

DEPARTMENT OF PHYSICS

S. No	Title of the Paper	Course Outcomes
9	PAPER – I: MECHANICS, WAVES AND OSCILLATIONS	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 precessional 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.
	PAPER – II: WAVE OPTICS	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 Fraunhoffer 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 fibreoptic communication and explore the field of Holography and Nonlinear optics and their applications.

DEPARTMENT OF MICROBIOLOGY

S. No	Title of the Paper	Course Outcomes
10	PAPER – I: PAPER I: INTRODUCTION OF MICROBIOLOGY AND MICROBIAL DIVERSITY	1. Understand the basic microbial structure and function and study the comparative characteristics of prokaryotes and eukaryotes 2. Know general bacteriology and microbial techniques 3. Understand the various methods for identifications of unknown micro organics 4. Apply knowledge of the standard rules of classification systems to categorize microorganisms. 5. Appreciate and explain the dynamic and ever developing nature of the field of microbial taxonomy and systematic.
	PAPER – II: MICROBIAL PHYSIOLOGY AND BIOCHEMISTRY	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.

DEPARTMENT OF BOTANY

S. No	Title of the Paper	Course Outcomes
11	PAPER – I: FUNDAMENTALS OF MICROBES AND NON-VASCULAR PLANTS (VIRUSES, BACTERIA, FUNGI, LICHENS, ALGAE AND BRYOPHYTES)	1. Demonstrate the techniques of use of lab equipment, preparing slides and identify the material and draw diagrams exactly as it appears. 2. Observe and identify microbes and lower groups of plants on their own. 3. Demonstrate the techniques of inoculation, preparation of media etc. 4. Identify the material in the permanent slides etc.
	PAPER – II: BASICS OF VASCULAR PLANTS AND PHYTOGEOGRAPHY (PTERIDOPHYTES, GYMNOSPERMS, TAXONOMY OF ANGIOSPERMS AND	1. Demonstrate the techniques of section cutting, preparing slides, identifying of the material and drawing exact figures. 2. Compare and contrast the morphological, anatomical and reproductive features of vascular plants. 3. Identify the local angiosperms of the families prescribed to their genus and species level and prepare

	PHYTOGEOGRAPHY)	herbarium. 4. Exhibit skills of preparing slides, identifying the given twigs in the lab and drawing figures of plant twigs, flowers and floral diagrams as they are. 5. Prepare and preserve specimens of local wild plants using herbarium techniques

DEPARTMENT OF HORTICULTURE

S. No	Title of the Paper	Course Outcomes
12	PAPER – I: FUNDAMENTALSOF HORTICULTURE AND SOIL SCIENCE	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.
	PAPER – II: PLANT PROPAGATION AND NURSERY MANAGEMENT	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

DEPARTMENT OF STATISTICS

S.No	Title of the Paper	Course Outcomes
13	Paper-I Descriptive Statistics	1. knowledge of Statistics and its scope and importance in various areas such as Medical, 2. Engineering, Agricultural and Social Sciences etc. knowledge of various types of data, their organization and evaluation of summary measures such as measures of central tendency and dispersion etc. 3. knowledge of other types of data reflecting quality characteristics including concepts of independence and association between two attributes, 4. Insights into preliminary exploration of different types of data. 5. Knowledge of correlation, regression analysis, regression diagnostics, partial and multiple 6. correlations.
	Paper-II Probability theory and distributions	1. Ability to distinguish between random and non-random experiments, 2. knowledge to conceptualize the probabilities of events including frequentist and axiomatic 3. approach. Simultaneously, they will learn the notion of 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, 7. knowledge of important discrete and continuous distributions such as Binomial, Poisson, 8. Geometric, Negative Binomial and Hyper-geometric,

DEPARTMENT OF MATHEMATICS

S.No	Title of the Paper	Course Outcomes
14	PAPER-I DIFFERENTIAL EQUATIONS& DIFFERENTIAL EQUATIONS PROBLEM SOLVING SESSIONS	1. Solve linear differential equations 2. Convert nonexact homogeneous equations to exact differential equations by using integratingfactors 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 non-homogeneous, with constant coefficients. 5. Understand the concept and apply appropriate methods for solving differential equations.
	Paper-II THREE DIMENSIONAL ANALYTICALSOLID GEOMETRY & THREE DIMENSIONAL ANALYTICALSOLID GEOMETRY PROBLEM SOLVING SESSIONS	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.,

DEPARTMENT OF POLITICAL SCIENCE

S.No	Title of the Paper	Course Outcomes
15	PAPER-I INTRODUCTION TO POLITICAL SCIENCE	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. 4. Apply the knowledge to observe the field level phenomena

	PAPER-II BASIC ORGANS OF THE GOVERNMENT	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 analyze and evaluate the existing systems

DEPARTMENT OF BIOTECHNOLOGY

S.No	Title of the Paper	Course Outcomes
16	PAPER-I BIOMOLECULES, BIOENERGETICS, BIOSTATISTICS, ANALYTICAL TECHNIQUES	1. To learn about the chemistry and structure of biomolecules 2. Understand the energy producing pathways of glycol sis, 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.
	PAPER-II MICROBIOLOGY, CELLBIOLOGY, MOLECULAR BIOLOGY	1. Apply the knowledge to understand the microbial physiology and to identify the microorganisms 2. Understand the basic components of prokaryotic and eukaryotic cells 3. Understand how the cellular components are used to generate and utilize energy in cells 4. Understand and analyze the concepts of DNA replication and enzymology 5. Understand and describe the process of Protein synthesis and regulation of Prokaryotic gene expression

DEPARTMENT OF CHEMISTRY

S.No	Title of the Paper	Course Outcomes
17	PAPER-I INORGANIC AND PHYSICAL CHEMISTRY	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.
	PAPER-II ORGANIC & GENERAL CHEMISTRY	1. Write different conformations of n-butane. Explain their relative stability. 2. Explain 1,2- & 1,4- addition reactions of conjugated diene 3. Explain the orientation effect of halogens on mono substituted benzene. 4. Explain the mechanism of E1CB elimination reaction. 5. Explain the structure of ClF3 by Valency Bond theory. 6. What are Hard & soft acids & bases? Explain with examples. 7. Draw the Wedge, Fischer, Newmann& saw-Horse representations for Tartaric acid. 8. Define Enantiomers and Diastereomers and give two examples for each.