s.no	SEMESTER	COURSE NO.	COURSE TITTLE	COURSE OUTCOMES
1	1	COURSE - I	FUNDAMENTALS OF MICROBES AND NON-VASCULAR PLANTS	• Explain origin of life on the earth. • Illustrate diversity among the viruses and prokaryotic organisms and can categorize them. • Classify fungi, lichens, algae and bryophytes based on their structure, reproduction and life cycles. • Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi.
				• Recall and explain theevolutionary trends among amphibians of plant kingdom for their shift to land habitat.
				• Evaluate the ecological and economic value of microbes, thallophytes and bryophytes.
2	2	COURSE - II	BASICS OF VASCULAR PLANTS AND PHYSTOGROGRAPHY	• Classify and compare Pteridophytes and
				Gymnosperms based on their morphology, anatomy, reproduction and life cycles.
				• Justify evolutionary trends in tracheophytes to adapt for land habitat. • Explain the process of fossilization and compare the characteristics of extinct and extant plants. • Critically understand various taxonomical aids for identification of Angiosperms.
				• Analyze the morphology of the most common
				Angiospermplants of their localities and recognize their families. • Evaluate the ecological, ethnic and economic value of different tracheophytes and summarize their goods and services for human welfare. • Locate different phytogeographical regions of the world and India and can analyze their floristic wealth.
3	3	COURSE - III	ANATOMY AND EMBRYOLOGY OF ANGIOSPERMS, PLANT ECOLOGY AND BIODIVERSITY	• Understand on the organization of tissues and tissue systems in plants. • llustrate and interpret various aspects of embryology. • Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities. • Appraise various qualitative and quantitative parameters to study the population and community ecology. • Correlate the importance of biodiversity and consequences due to its loss. • Enlist the endemic/endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation.

4		4	COURSE - IV	PLANT PHYSIOLIGY AND METABOLISM	• Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants. • Evaluate the role of minerals in plant nutrition and their deficiency symptoms. • Interpret the role of enzymes in plant metabolism. • Critically understand the light reactions and carbon assimilation processes responsible for synthesis of food in plants. • Analyze the biochemical reactions in relation to Nitrogen and lipid metabolisms. • Evaluate the physiological factors that regulate growth and development in plants.
					• Examine the role of light on flowering and explain physiology of plants under stress conditions.
5		5	COURSE - V	CELL BIOLOGU, GENETICS AND PLANT BREEDING	Distinguish prokaryotic and eukaryotic cells and design the model of a cell. • Explain the organization of a eukaryotic chromosome and the structure of genetic material. • Demonstrate techniques to observe the cell and its components under a microscope. • Discuss the basics of Mendelian genetics, its variations and interpret inheritance of traits in living beings. • Elucidate the role of extra-chromosomal genetic material for inheritance of characters.
					• Evaluate the structure, function and regulation of genetic material.
					• Understand the application of principles and modern techniques in plant breeding. •
					Explain the procedures of selection and hybridization for improvement of crops.

	2020 CBCS				
SNo	Course title	Course code	Semester	Outcomes	
1	DIFFERENTIAL EQUATIONS		I	CO1	Solve linear differential equations.
				CO2	Convert non exact homogeneous equations to exact differential equations by using integrating factors.
				CO3	Know the methods of finding solutions of differential equations of the first order but not of the first degree.
				CO4	Know the methods of finding solutions of differential equations of the first order but not of the first degree.
				CO5	Understand the concept and apply appropriate methods for solving differential equations.
2	THREE DIMENSIONAL ANALYTICAL SOLID GEOMETRY		II	CO1	Get the knowledge of planes.
				CO2	Basic idea of lines, sphere and cones.
				CO3	Understand the properties of planes, lines, spheres and cones.
				CO4	Express the problems geometrically and then to get the solution.
3	ABSTRACT ALGEBRA		III	CO1	Acquire the basic knowledge and structure of groups, subgroups and cyclic groups.
				CO2	Acquire the basic knowledge and structure of groups, subgroups and cyclic groups.
				CO3	Get the behavior of permutations and operations on them.
				CO4	Study the homomorphisms and isomorphisms with applications.
				CO5	Understand the ring theory concepts with the help of knowledge in group theory and to prove the theorems.
				CO6	Understand the applications of ring theory in various fields.
				CO1	Get a clear idea about the real numbers and real valued functions.

4	REAL ANALYSIS		IV	CO2	Obtain the skills of analyzing the concepts and applying appropriate methods for testing convergence of a sequence/ series.
				CO3	Test the continuity and differentiability and Riemann integration of a function.
				CO4	Know the geometrical interpretation of mean value theorems.
5	LINEAR ALGEBRA		IV	CO1	Understand the concepts of vector spaces, subspaces, basis, dimension and their properties
				CO2	Understand the concepts of linear transformations and their properties
				CO3	Apply Cayley- Hamilton theorem to problems for finding the inverse of a matrix and higher powers of matrices without using routine methods
				CO4	Learn the properties of inner product spaces and determine orthogonality in inner product spaces.
6	Numerical Methods		V	CO1	Understand the subject of various numerical methods that are used to obtain approximate solutions
				CO2	Understand various finite difference concepts and interpolation methods.
				CO3	Work out numerical differentiation and integration whenever and wherever routine methods are not applicable.
				CO4	Find numerical solutions of ordinary differential equations by using various numerical methods.
				CO5	Analyze and evaluate the accuracy of numerical methods.
				CO1	Understand the Beta and Gamma functions, their properties and relation between these two functions, understand the orthogonal properties of Chebyshev polynomials and recurrence relations.
				CO2	Find power series solutions of ordinary differential equations.

7	Mathematical Special Functions		V	CO3	Solve Hermite equation and write the Hermite Polynomial of order (degree) n, also find the generating function for Hermite Polynomials, study the orthogonal properties of Hermite Polynomials and recurrence relations.
				CO4	Solve Legendre equation and write the Legendre equation of first kind, also find the generating function for Legendre Polynomials, understand the orthogonal properties of Legendre Polynomials.
				CO5	Solve Bessel equation and write the Bessel equation of first kind of order n, also find the generating function for Bessel function and understand the orthogonal properties of Bessel function.

s.no	semester	course	out comes	
	1/2020	Ancient Indian History & Culture (From Early to 600A.D)	1.Identify and define various kinds of sources and understand how history books are Shaped	
			2.Increase the awareness and appreciation of Transition from Territorial States to Emergence of Empires	
			3. Visualize where places are in relation to one another through map pointing	
	2/2020	Early Medieval Indian History & Culture (600 A.D To 1526A.D	1. Understand the socio, economic and cultural conditions of medieval India 2. Explain the Administration and art and architecture of Vijayanagar Rulers, Mughals and also analyze the rise of the Marathas and the contribution of Shivaji 3. Analyze the emergence of composite culture in Indian	
	3/2020	Late Medieval & colonial History of India (1526 to 1857 A. D)	1. Unearth the true nature of the British rule and its disastrous impact on Indian economy and society. 2. Gauge the disillusionment of people against the Company's rule even during the early 19th century. 3. Evaluate the undercurrent of communal politics that led to India's partition and identify the enemies of India's integrity and sovereignty	
	4/2020	Social Reform Movement & Freedom Struggle (from 1820 to 1947 AD)	1.To gain knowledge on Indian freedom movement and the value of freedom fighters. 2. to get an idea on various methods used by freedom fighters. 3. the roles of freedom fighters	
	paper-5 5/2020	Age of Rationalism And Humanism the World Between 15th & 18th Centuries	1. A brief idea on world history 2. A view on world war. 3.The use of international organizations.	
	paper-6 5/2020	History and Culture of Andhra Desa from 12th to 19th Century A.D.)	1.A view on culture of Andhra desa 2.To gain knowledge on various kingdoms and new reforms 3.A view on political system and the changes	

	6/2020	History of Modern Europe (from 19th century to 1945 A. D.)	1. To gain knowledge about modern world. 2. Problems of colonialism. 3.How to overcome the problems and importance of trade and comers	
	CLUSTER-1	CULTURE TOURISM IN ANDHRA PRADESH	1. To gain knowledge on tourism. 2. Importance of tourism. 3. How to operate tours and travel and to get job through tourism	
	CLUSTER-2	POPULAR MOVEMENTS IN ANDHRA PRADESH	1. To gain knowledge on tourism. 2. Importance of tourism. 3. How to operate tours and travel and to get job through tourism	
	CLUSTER-3	CONTEMPORARY HISTORY OF ANDHRA PRADESH	1.To gain knowledge about modern Andhra Pradesh 2.To get an idea on new ideologies, movements in contemporary Andhra 3.To create awareness on bifurcation of Andhra Pradesh and power politics. 4. To gain perfect knowledge on separation of state like separate Telangana till 2014	

2021 CBCS					
SNo	Course title	Course code	Semester		Outcomes
1	escriptive Statisti		I	CO1	The objective of this paper is to throw light on the role of statistics in different fields with special reference to business and economics.
				CO2	It gives the students to review good practice in presentation and the format most applicable to their own data.
				CO3	The measures of central tendency or averages reduce the data to a single value which is highly useful for making comparative studies.
				CO4	The concept of Correlation and Linear Regression deals with studying the linear relationship between two or more variables, which is needed to analyze real life problems.
				CO5	The attributes gives an idea that how to deal with qualitative data.
2	Probability Theory and Distributions		II	CO1	This paper deals with the situation where there is uncertainty and how to measure that uncertainty by defining the probability, random variable and mathematical expectation which are essential in all research areas.
				CO2	This paper gives an idea of using various standard theoretical distributions, their chief characteristics and applications in analyzing any data.
3	tatistical Inferenc		III	CO1	This paper deals with standard sampling distributions like Chi Square, t and F and their characteristics and applications.
				CO2	This paper deals with the different techniques of point estimation for estimating the parameter values of population and interval estimation for population parameters.
				CO3	In this paper, various topics of Inferential Statistics such as interval estimation,Testing of Hypothesis, large sample tests (Z-test), small sample tests (t-test, F-test, chi-square test) and non-parametric tests are dealt with. These techniques play an important role in many fields like pharmaceutical, agricultural, medical etc.
4	Sampling Techniques and Design of Experiments		IV	CO1	The sampling techniques deals with the ways and methods that should be used to draw samples to obtain the optimum results, i.e., the maximum information about the characteristics of the population with the available sources at our disposal in terms of time, money and manpower to obtain the best possible estimates of the population parameters.
				CO2	This paper throws light on understanding the variability between group and within group through Analysis of Variance.
				CO3	This gives an idea of logical construction of Experimental Design and applications of these designs nowadays in various research areas.
				CO4	Factorial designs allow researchers to look at how multiple factors affect a dependent variable, both independently and together.
5	Applied Statistics		IV	CO1	This paper deals with the time series on simple description methods of data, explains the variation, forecasting the future values, control procedures.
				CO2	It gives an idea of using index numbers in a range of practical situations, limitations and uses.
				CO3	The vital statistics enlighten the students in obtaining different mortality, fertility rates thus obtaining the population growth rates and construction and use of life tables in actuarial science.
				CO1	To know the scope of Operations Research.

6	OPERATIONS RESEARCH - I			V	CO2	To link the OR techniques with business environment and life sciences.
					CO3	To convert real life problems into mathematical models.
					CO4	To find a solution to the problem in different cases.
					CO5	To inculcate logical thinking to find a solution to the problem.
7	OPERATIONS RESEARCH - II			V	CO1	To solve the problems in logistics.
					CO2	To find a solution for the problems having space constraints.
					CO3	To minimize the total elapsed time in an industry by efficient allocation of jobs to the suitable persons.
					CO4	To find a solution for an adequate usage of human resources.
					CO5	To find the most plausible solutions in industries and agriculture when a random environment exists.

2020-21			
Sem	Title of Course	CO	Course outcomes
I	ANIMAL DIVERS	CO1	Describe general taxonomic rules on animal classification
		CO2	Classify Protozoa to Coelenterata with taxonomic keys
		CO3	Classify phylum Platy hemninthes to Annelida phylum using examples from parasitic adaptation and vermin composting
			Describe Phylum Arthropoda to Mollusca using examples and importance of insects and Molluscans
		CO5	Describe Echinodermata to Hemi chordata with suitable examples and larval stages in relation to the phylogeny
II	ANIMAL DIVERS	CO1	Describe general taxonomic rules on animal classification of chordates
		CO2	Classify protochordata to mammalia with taxonomic keys
		CO3	Understand Mammals with specific structural adaptaions
		CO4	Understand the significance of dentition and evolutionary significance
		CO5	Understand the origin and evolutionary relationship of different phyla from prochordata to mammalia
III	**MOLECULAR**	CO1	To understand the basic unit of the living organisms and to differentiate the organisms by their cell structure
		CO2	Describe fine structure and function of plasma membrane and different cell organelles of eukaryotic cell
		CO3	To understandthe history of origin of branch of genetics, gain knowledge on heredity, interaction of genes, various types of inheritance patterns existing in animals
		CO4	Acquiring in-depth knowledge on various of aspects of genetics involved in sex determination, human karyotyping and mutations of chromosomes resulting in various disorders
		CO5	Understand the central dogma of molecular biology and flow of genetic information from DNA to proteins
		CO6	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
IV	ANIMAL PHYSIOLOGY, CELLULAR METABOLISM AND EMBRYOLOGY	CO1	Understand the functions of important animal physiological systems including digestion, cardio-respiratory and renal systems
		CO2	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
		CO3	Describe the structure, classification and chemistry of biomolecules and enzymes responsible for sustenance of life in living organisms

		CO4	Develop broadunderstanding the basic metabolic activities pertaining to the catabolism and anabolism of various biomolecules
		CO5	Describe the key events in early embryonic development starting from the formation of gametes upto gastrulation and formation of primary germ layers
V	IMMUNOLOGY A	CO1	To get knowledge of the organs of Immune system, types of immunity, cells and organs of immunity
		CO2	To describe immunological response as to how it is triggered (antigens) and regulated (antibodies)
		CO3	Understand the applications of Biotechnology in the fields of industry and agriculture including animal cell/tissue culture, stem cell technology and genetic engineering
		CO4	Get familiar with the tools and techniques of animal biotechnology
VIA	SUSTAINABLE A	CO1	Evaluate the present status of aquaculture at the Global level and National level
		CO2	Classify different types of ponds used in aquaculture
		CO3	Demonstrate induced breeding of carps
		CO4	Acquire critical knowledge on commercial importance of shrimps
		CO5	Identify fin and shell fish diseases
VIIA	POSTHARVEST TECHNOLOGY OF FISH AND FISHERIES	CO1	Identify the types of preservation methods employed in aquaculture
		CO2	Choose the suitable processing methods in aquaculture
		CO3	Maintain the standard quality control protocols laid down in aqua industry
		CO4	Identify the best seafood quality assurance system

2021-22COMPUTER SCIENCE

SEMESTERTITLE OF THE COURSECO NUMBERCOURSE OUTCOME

IPROBLEM SOLVING IN CC01Understand the evolution and functionality of a Digital Computer.
C02Apply logical skills to analyse a given problem
C03Develop an algorithm for solving a given problem.
C04Understand „C‟ language constructs like Iterative statements, Array processing, Pointers, etc.
C05Apply "C‟ language constructs to the algorithms towrite a "C‟ language program.

IIDATA STRUCTURES USING CC01Understand available Data Structures for data storage and processing.
C02ComprehendData Structure and their real-time applications - Stack, Queue, Linked List, Trees and Graph
C03Choose a suitable Data Structures for an application
C04Develop ability to implement different Sorting and Search methods
C05Have knowledge onData Structures basic operations like insert, delete, search,update and traversal
C06Design and develop programs using various data structures
C07Implement the applications of algorithms for sorting, pattern matching etc

IIIDATABASE MANAGEMENT SYSTEMSC01Gain knowledge of Database and DBMS.
C02Understand the fundamental concepts of DBMS with special emphasis on relational data model.
C03Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database
C04Model database using ER Diagrams and design database schemas based on the model.
C05Create a small database using SQL.
C06Store, Retrieve data in database.

S NO	Sem	Title of course	CO	Course outcome
	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
	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 analyse and evaluate the existing systems
	III	INDIAN GOVERNMENT AND POLITICS	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
			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
	IV	INDIAN POLITICAL PROCESS	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
	IV	WESTERN POLITICAL THOUGHT	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