Sri Ramakrishna Degree College(Autonomous):Nandyal

Course Outcomes(COs)

	Undergraduate Courses				
Class	Course	Topic	Course Outcome		
	English	General English	 Use grammar effectively in writing and speaking. Demonstrate the use of good vocabulary Demonstrate an understating of writing skills Acquire ability to use Soft Skills in professional and daily life. Confidently use the tools of communication skills 		
B.A and B.C.A		Reading & Writing Skills	 Use reading skills effectively Comprehend different texts Interpret different types of texts Analyze what is being read Build up a repository of active vocabulary Use good writing strategies Write well for any purpose Improve writing skills independently for future needs 		
B.A, B.Com, B.Sc, B.B.A and B.C.A		Conversational Skills	 Participate confidently in any social interaction Face any professional discourse Demonstrate critical thinking Enhance conversational skills by observing the professional interviews 		
B.A,	Telugu	Pracheena Kavithvamu,Natakamu	 Familiarizes to poets like pothana and koravi Goparaju and analyses the uniqueness of their poetry. Understands all the aspects of our mother tongue and its importance for our existence. Becomes familiarised to different styles of writers and different dialects of the language. 		
		Old poetry, Modern Poetry and Story, Navala	 Understands qualities of prabandha yugam and effect of the luxurious living of 16th century/Sri Krishnadevaraya yugam. Appreciates Telugu literature and understands the reflection of social 		

			issues in writings of modern poetry and short stories.
		Prose, Poetry and Grammar-I	 Develops Listening, Reading, Speaking and Writing skills in Sanskrit Appreciates ancient Sanskrit literature and its importance Recites Slokas from old literature Recites Sabdas and Dhaathus in Sanskrit grammar
	Sanskrit	Drama, Upanishad, prose, Alankaras, of Sanskrit Literature and Grammar	 Develops Listening, Reading, Speaking and Writing skills in Sanskrit Appreciates ancient Sanskrit literature and its importance Knows about Sanskrit Dramas and Upanishads Knows about alankaras such as Upama, Ananvaya, Uthpreksha, etc. Improves in grammar and vocabulary
B.A	History	Ancient indian History & Culture	Identify and define various kinds of sources and understand how history books are shaped □ Compare and contrast various stages of progress from IVC to Vedic age and analyze the Jain, Buddhist and Vedic faiths □ Increase the awareness and appreciation of Transition from Territorial States to Emergence of Empires □ Analyze the emergence of the Mauryan and Gupta empires during the —classical agell in India □ Evaluate the key facets of ancient society, polity and culture in South India—the feudalism, and the rise of technology and commerce. □ Critically examine the nature of monarchic rule and develop an comprehensive understanding of cultural evolution during ancient period □ Visualize where places are in relation to one another through map pointing
		Medieval indian history & culture	Understand the socio, economic and cultural conditions of medieval India ☐ Describe the advent of Islam in India and study the traces of political and cultural

		expansion of Turks & Afghans □ Explain the Administration and art and architecture of Vijayanagar Rulers, Mughals and also analyse the rise of the Marathas and the contribution of Shivaji □ Evaluate the establishment of the British rule in India and understand the dangerous consequences disunity at all levels □ Analyze the emergence of composite culture in Indian □ Visualize where places are in relation to one another through map pointing
	Modern Indian History & Culture	Unearth the true nature of the British rule and its disastrous impact on Indian economy and society Gauge the disillusionment of people against the Company's rule even during the early 19th century Assess the causes and effects of Reformation movements and also inspire the public to overthrow inequalities of the present day society Rise above petty parochial issues after understanding the sacrificial saga of freedom
	History & Culture of Andhra	Interpret social and political and cultural transformation from medieval to modern Andhra □ Relate key historical developments during medieval period occurring in coastal Andhra and Telangana regions and analyze socio - political and economic changes under QutbShahi rulers □ Understand gradual change, or change in certain aspects of society in Andhra, rather than rapid or fundamental changes □ Explain how the English East India Company became the most dominant power and outline the impact of colonial policies on different aspects in Andhra □ Outline the issues related to caste, women, widow remarriage, child marriage, social reforms and the laws and policies of colonial administration towards these issues □ Take pride in the non-violence struggle for

	Indian Independence and relate
	the importance of peace in everyday life
	☐ Apply the knowledge of the regional history
	to understand the regional,
	linguistic and other cultural aspirations of the
	present day society
	☐ Visualize where places are in relation to one
	another through map pointing
	Demonstrate advanced factual knowledge of
	world histories, politics, and cultures
	☐ Assess and appraise the developments in
	art, literature, and society during the
	Renaissance and utilize content knowledge of
	the Reformation and Counter
	Reformation to make predictions about the
	evolution of Christianity in Europe and
	Abroad
	☐ Evaluate the causes for the Glorious
	Revolution and American Revolution and
	identify the background for the evolution of
	human rights movement
	☐ Understand the main events of the French
	Revolution and its significance in the shift
	in European culture from Enlightenment to
Histo	
Histo	
	☐ Think how Russia's traditional monarchy
	was replaced with the world's first
	Communist state.
	☐ Know how the world wars affected people
	all over the world and the destruction
	they caused
	☐ Develop the intellectual curiosity and habits
	of thought that will lead to life-long
	learning and continued engagement with
	European history, literature, culture,
	languages, and current affairs and acquire
	advanced international and intercultural
	competency through coursework in
	international studies
	☐ Visualize where places are in relation to one
	another through map pointing

B.A	Economics	Microeconomic Analysis	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	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
		1
		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
		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
		c. Characteristics of developing and
		developing economies and distinction between
		the two
		d. factors contributing to development, Choice
	Development Economic	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
 		
		Remembers and states in a systematic way
	Economic Development- India	(Knowledge)
		a. leading issues of Indian economic
	and Andhra pradesh	growth, obstacles and policy responses
		b. Objectives, outlays and achievements of
		economic plans and growth strategies
		2. Explains (understanding)
		a. Available Resources, demographic issues,
		in 11. minest 1100 areas, actinographic library,

	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	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	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	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 and formulate appropriate business ideas. 4. Demonstrate practical skills that will enable them to start urban entrepreneurship
Retail and Digital Marketing	Explain the concepts and principles about the retail and digital marketing; 2. Identify and analyse the opportunities related to retail and digital marketing available in the local area; 3. Apply the concept to formulate the new strategies related to retail and digital marketing; 4. Demonstrate the practical skills required to get employment in retail and digital marketing or to start own digital marketing
Insurance Services	Explain the concept and principles of insurance service and functioning of insurance service agencies; 2. Identify and analyse the opportunities related insurance services in local rural area; 3. Apply the concepts and principles of insurance to build a career in Insurance services; 4. Demonstrate practical skills to enable them to start insurance service agency or earn wage employment in it.

B.A	Political Science	Introduction To Political Science	 Recall the previous knowledge about Political Science and understand the nature and scope, traditional and modern approaches of Political Science. Understand concepts intrinsic to the study of Political Science. Have solid theoretical understanding of Rights and its theories along with the basic aspects of certain political ideologies. Apply the knowledge to observe the field level phenomena
		Basic Organs of The Government	 Understand the Origin and Evolution of the concept of Constitutionalism and classification of Constitutions. Acquaint themselves with different theories of origin of State. Understand and analyses organs and forms of Governments along with a deep insight into the various agents involved in the political process. Apply the knowledge to analyse and evaluate the existing systems
		Indian Government and Politics	 Acquire knowledge about the historical background of Constitutional development in India, appreciate philosophical foundations and salient features of the Indian Constitution. Analyze the relationship between State and individual interms of Fundamental Rights and Directive Principles of State Policy. Understand the composition of and functioning of Union Government as well as State Government and finally Acquaint themselves with the judicial system of the country and its emerging trends such as judicial reforms.
		Indian Political Process	Know and understand the federal system of the country and some of

	 the vital contemporary emerging issues. Evaluate the electoral system of the country and to identify the areas of electoral reforms. Know the constitutional base and functioning of local governments with special emphasis on 73rd& 74th Constitutional Amendment Acts. Understand the dynamics of Indian politics, challenges faced and gain a sensitive comprehension to the contributing factors. Apply the knowledge and critically comprehend the functioning of some of the regulatory and governance institutions. Propose theoretical outline alternate models
Western Politi	 Understand the fundamental contours classical, western political philosophy, basic features of medieval political thought and shift from medieval to modern era. Understand the Social Contract Theory and appreciate its implications on the perception of State in terms of its purposes and role. Acquaint with the Liberal and Marxist philosophy and analyze some trends in Western Political Thought. Critically analyse the evolution of western political thought
E Governance	 Acquaint student with the introduction to good governance and how it can be achieved by information and communication technology. Understand the growing needs of E-Governance, improving transparency in the system of governance

			 Have understanding of various government schemes and E-Governance projects and initiatives. Provide the practical knowledge about the effective delivery of citizen services through online mode. Realize the issues and challenges of E-Governance.
B.Com	Commerce	Advanced Corporate Accounting	 Understand Corporate Accounting environment Record Transactions related to Purchase of Business Amalgamation and Reconstruction Analyze the situations of Purchase of Business and Liquidation Create formulas and calculations relating to Amalgamation, Internal Reconstruction and Holding company accounts Acquire skills of Accounting Procedure of Advanced Corporate Accounting Environment.
		Management Accounting	 Understand the nature and scope of management accounting and differentiate management accounting, financial accounting and cost accounting. Compute ratios and draw inferences Analyze the performance of the organization by preparing funds flow statement and cash flow statements Prepare cash budget, fixed budget and flexible budget.
		Digital Marketing	Analyze online Micro and Macro Environment Design and create website Discuss search engine marketing Create blogs, videos, and share
		Income Tax Assessment Procedures and Practice	 Understand the basic concepts in computation of tax liability under all heads of income of the individuals. Analyze 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
		. 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.
	Goods and Services Tax	3. Comprehend the utilization of input tax
	Coods and Services 14A	credit, and the reverse charge mechanism in GST
		4. Acquire Skills of preparation of GST
		Returns in accordance with GST
		5. Acquire skill of online payment of GST
		through GST Portal.
		1. Understand the mechanism of ecommerce
		2. Equip specialization in website designing for e commerce
		3. Enhance their skills in operational services
	E Commerce	of e commerce
		4. Involve in activities of e commerce
		5. Able to create awareness among the public
		one commerce activities
		1.Understand the Features of General
		Insurance and Insurance Companies in India
		2. Analyze various schemes and policies
	Insurance Procedure And Practice	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
		5. Apply skill for settlement of claims under
		various circumstances
		1. Understand the role of advertising in
		business environment 2. Understand the legal and ethical issues in
		2. Understand the legal and ethical issues in advertising
	Advertising and Media	3. Acquire skills in creating and developing
	Planning	advertisements
		4. Understand up-to-date advances in the
		current media industry.
		5. Acquire the necessary skills for planning
	Sales Promotion and	an advertising media campaign.1. Analyse various sales promotion activities
	Practice	2. Get exposed to new trends in sales
	Tactice	2. Set exposed to new tiends in sales

1	Duomotion
	Promotion 3. Understand the concepts of creativity in sales promotion 4. Enhance skills to motivate the salesperson to reach their targets 5. Develop the skills of designing of sales promotion events
Logistics Services & Practice	 Appraise the Principles of Logistics and its informatics. Examine the Financial Issues in Logistics sector performance. Describe basic EOQ model and ABC analysis. Determine warehouse safety rules, concepts of Retail Logistics and strategies of Supply Chain Management.
Export Import Procedure &Practice	1. Understand the significance of Export and Import Management and its role in Economy and as job careers 2. Acquire knowledge on Procedures of export and import 3. Involve in pre and post EXIM activities 4. Enhance their skills by practicing in foreign trade
Digital Marketing	 Analyze online Micro and Macro Environment Design and create website Discuss search engine marketing Create blogs, videos, and share
Service Marketing	 Discuss the reasons for growth of service sector. Examine the marketing strategies of Banking Services, insurance and education services. Review conflict handling and customer Responses in services marketing Describe segmentation strategies in service marketing. Suggest measures to improve services quality and their service delivery.
e Filing	 Understand and apply basic knowledge of Indian Tax System Equip specialization in taxation system Enhance their skills in presenting returns Involve in activities of Charted Accountants for filing returns file returns of Income Tax and GST

	MATHEMATICS	Differential Equations	 After successful completion of this course, the student will be able to; Solve linear differential equations. Convert nonexact homogeneous equations to exact differential equations by using integrating factors. Know the methods of finding solutions of differential equations of the first order but not of the first degree. Solve higher-order linear differential equations, both homogeneous and non homogeneous, withconstant coefficients. Understand the concept and apply appropriate methods for solving differential equations.
B.Sc		Three Dimensional Analytical Solid Geometry	 get the knowledge of planes. basic idea of lines, sphere and cones. understand the properties of planes, lines, spheres and cones. express the problems geometrically and then to get the solution
		Abstract Algebra	 1.acquire the basic knowledge and structure of groups, subgroups and cyclic groups. 2. get the significance of the notation of a normal subgroups. 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 thetheorems. 6. understand the applications of ring theory in various fields.
		Real Analysis	1. get clear idea about the real numbers and real valued functions. 2. obtain the skills of analyzing the concepts and applying appropriate methods fortesting 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	understand the concepts of vector spaces, subspaces, basises, dimension and their properties understand the concepts of linear

		4
		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
		understand the subject of various numerical
		methods that are used to obtain approximate
		solutions
		2. Understand various finite difference
		concepts and interpolation methods.
		3. Work out numerical differentiation and
	Numerical Methods	integration whenever and wherever routine
		methods
		are not applicable.
		4. Find numerical solutions of ordinary
		differential equations by using various
		numerical
		methods.
		5. Analyze and evaluate the accuracy of
		numerical methods
		.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
	Vester coloul	integral.
	Vector calculus	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)
		Classify partial differential aquations
		Classify partial differential equations,
		formation of partial differential equations and solve
	Partial differential equations & Fourier series	
		Cauchy's problem for first order equations.
		2. Solve Lagrange's equations by various
		methods, find integral Surface passing through
		a given
		curve and Surfaces orthogonal to a given

			system of Surfaces. 3. Find solutions of nonlinear partial differential equations of order one by using Char pit's method. 4. Find solutions of nonlinear partial differential equations of order one by using Jacobi's method. 5. Understand Fourier series expansion of a function f(x) and Parseval's theorem.
		Number theory	 Find quotients and remainders from integer division, study divisibility properties of integers and the distribution of primes. Understand Dirichlet multiplication which helps to clarify interrelationship between various arithmetical functions. Comprehend the behaviour of some arithmetical functions for large n. Understand the concepts of congruencies, residue classes and complete residues systems. Comprehend the concept of quadratic residues mod p and quadratic non residues mod p.
	PHYSICS	Mechanics	 Recalls the mechanics principles, Physical quantities, their representation and relations among them Identifies the principle of mechanics Solves the problems relating to mechanics Applies the principles in different fields like rockets
B.Sc		Waves and Oscillations	 Differentiates different types of pendulums, different wave motions and oscillations Memorizes formulae, principle and phenomena related waves Solves the problems relating to waves and oscillations Uses the concept in the real life
		Thermodynamics	 Explains thermodynamically variables and potentials Specifies principles, experiments related to thermodynamics Uses the learned principles in their daily life
		Optics	1.Explains the Optics variables and potentials 2.Learns the principles experiments related to wave nature of light

			3.Tests the learned principles in their daily life
		Electricity, Magnetism & Electromagnetics	 Explains the principles and formulae in electricity Magnetism and electromagnetic Solves the problems related to above topics Tests learned principles and formulae in their daily life
		Solid State Physics	 Designs the structural arrangement of crystals Discriminates different solids and their internal arrangement of atom Uses the learned concept in daily life
		Modern Physics	 Designs Raman experiments, Explains DE Broglie Hypothesis and other Modern developments in Physics Summarizes different theories and developments in modern physics like Raman effect, Uncertainty principle
		Analog and Digital Electronics	 Identifies different number systems, logic gates Designs different combinations of logic gates and their outcomes Develops electronic circuits by their own
		Basic Circuit Theory	Designs basic electronic circuits Identifies different components involved in electronic circuit connections
	CCS	Electronic Devices and Circuits	 Constructs the basic electronic devices used for circuit connections Chooses correct electronic devices as per their requirement
B.Sc	ELECTRONICS	Digital Electronics	 Identifies different number systems, logic gates, registers, memory devices etc. Constructs different digital electronic devices involved in circuits Chooses correct memory devices and logic gates as per their requirement
		Microprocessors	 Explains the Microprocessors, their internal parts and working Demonstrates the applications of different Microprocessors

		Embedded Systems and Microcontrollers	 Differentiates Embedded Systems and Micro Controllers Chooses correct applications of Embedded Systems and Micro Controllers Designs Micro Controllers as per their requirement
B.Sc	STATISTICS	Descriptive Statistics	The objective of this paper is to throw light on the role of statistics in different fields with special reference to business and economics. • It gives the students to review good practice in presentation and the format most applicable to their own data. • The measures of central tendency or averages reduce the data to a single value which is highly useful for making comparative studies. • The measures of dispersion throw light on reliability of average and control of variability • The concept of Correlation and Linear Regression deals with studying the linear relationship between two or more variables, which is needed to analyze the real life problems. • The attributes gives an idea that how to deal with qualitative data.
		Probability Theory and Distributions	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. • This paper gives an idea of using various standard theoretical distributions, their chief characteristics and applications in analyzing any data.
		Statistical Inference	This paper deals with standard sampling distributions like Chi Square, t and F and their characteristics and applications. • This paper deals with the different techniques of point estimation for estimating the parameter values of population and interval estimation for population parameters. • 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.
	ampling Techniques and esign of Experiments	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 • This paper throw light on understanding the variability between group and within group through Analysis of Variance • This gives an idea of logical construction of Experimental Design and applications of these designs now days in various research areas. • Factorial designs allow researchers to look at how multiple factors affect a dependent variable, both independently and together.
Aı	pplied Statistics	This paper deals the time series on simple description methods of data, explains the variation, forecasting the future values, control procedures. • It gives an idea of using index numbers in a range of practical situations, limitations and uses • 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.
Oj	perations Research	 To know the scope of Operations Research To link the OR techniques with business environment and life sciences To convert real life problems into mathematical models To find a solution to the problem in different cases To inculcate logical thinking to find a solution to the problem

B.Sc	BOTANY	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, algaeand bryophytes based on theirstructure, 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.
		Basics of Vascular plants and Phytogeography	Classify and compare Pteridophytes and Gymnosperms based on their morphology, anatomy, reproduction and life cycles. Justifyevolutionary 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 localitiesand 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
		Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity	Understand on the organization of tissues and tissue systems in plants. ☐ Illustrate and interpret various aspects of embryology. ☐ Discuss the basic concepts of plant ecology, and evaluate the effects ofenvironmental and biotic factors on plant communities. ☐ Appraise various qualitative and quantitative parameters to study the population and community ecology.
		Plant Physiology and Metabolism	Comprehend the importance of water in plant life and mechanisms for transport

ofwater 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
Distinguish prokaryotic and eukaryotic cells and design the model of a cell. □ Explain the organization of a eukaryotic chromosome and the structure of geneticmaterial. □ Demonstrate techniques to observe the cell and its components under amicroscope. Cell Biology, Genetics and Plant Breeding □ 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 inplant breeding. □ Explain the procedures of selection and hybridization for improvement of crops.
 Perform various skills related to gardening. Identify the living and non-living components required for garden development. Identify the pests and diseases of garden plants and control the same. Demonstrate skills of making bonsai and developing lawn. Make landscape design using CAD

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B.Sc	XOOTOOZ	Animal Diversity	 Describe general taxonomic rules on animal classification Classify Protozoa to Coelenterata with taxonomic keys 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 Describe Echinodermata to Hemi chordata with suitable examples and larval stages in relation to the phylogeny
		Animal Diversity - Biology of Nonchordates	 To understand the importance of preservation of museum specimens To identify animals based on special identifying characters To understand different organ systems through demo or virtual dissections To maintain a neat, labeled record of identified museum specimens
		Biology of Chordates	 Describe general taxonomic rules on animal classification of chordates Classify Protochordata to Mammalia with taxonomic keys Understand Mammals with specific structural adaptaions Understand the significance of dentition and evolutionary significance Understand the origin and evolutionary relationship of different phyla from Prochordata to mammalia.
		Cell Biology, Genetics, Molecular Biology And Evolution	 To understand the basic unit of the living organisms and to differentiate the organisms by their cell structure. Describe fine structure and function of plasma membrane and different cell organelles of eukaryotic cell. To understandthe history of origin of branch of genetics, gain knowledge on heredity, Interaction of genes, various types of inheritance patterns existing in animals

	 Acquiring in-depth knowledge on various of aspects of genetics involved in sex determination, human karyotyping and mutations of chromosomes resulting in various
Animal Physiology, Cellular Metabolism And Embryology	 Understand the functions of important animal physiological systems including digestion, cardio-respiratory and renal systems. 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. Describe the structure, classification and chemistry of biomolecules and enzymes responsible for sustenance of life in living organisms Develop broadunderstanding the basic metabolic activities pertaining to the catabolism and anabolism of various biomolecules Describe the key events in early embryonic development starting from the formation of gametes upto gastrulation and formation of primary germ layers.
Immunology and Animal Biotechnology	 organs of Immune system, types of immunity, cells and organs of immunity. To describe immunological response as to how it is triggered (antigens) and regulated (antibodies) Understand the applications of Biotechnology in the fields of industry and agriculture including animal cell/tissue culture, stem cell technology and genetic engineering. Get familiar with the tools and techniques of animal biotechnology.

	Organic Chemistry&Spectro Scopy	 Underst and preparation, properties and reactions of haloalkanes, haloarenes and oxygen containing functional groups. Use the synthetic chemistry learnt in this course to do functional group transformations. To propose plausible mechanisms for any relevant reaction
	Inorganic, Organic and Physical Chemistry	 To learn about the laws of absorption of light energy by molecules and the sub sequent photo chemical reactions. To understand the concept of quantum efficiency and mechanisms of photo chemical reactions
Š	Inorganic &Physical Chemistry	 Understand concepts Of boundary conditions and quantization, probability distribution, most probable values, uncertainty and expectation values Application of quantization to spectroscopy. Various types of spectra and the irusein structure determination.
B.Sc	Analytical Methods in Chemistry	 Identify the importance of solvent extraction and ion exchange method. Acquire knowledge on the basic principles of volumetric analysis and gravimetric analysis. Demonstrate the usage of common laboratory apparatus used in quantitative analysis. Understand the theories of different types of titrations. Gain knowledge on different types of errors and their minimization methods.
	Industrial Chemistry	 Identify the importance of different surface coatings. Acquire a critical knowledge on manufacture of ceramics and cement. Understand various steps in the manufacture of cane sugar. Explain the manufacture of pulp and paper.

		problem solving in c	 Understand the evolution and functionality of a Digital Computer. Apply logical skills to analyse a given problem Develop an algorithm for solving a given problem. Understand "C" language constructs like Iterative statements, Array processing, Pointers, etc. Apply "C" language constructs to the algorithms towrite a "C" language program.
	COMPUTER SCIENCE	Data Structures Using C	1.Understand available Data Structures for data storage and processing. 2. ComprehendData Structure and their realtime 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 onData 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	 Gain knowledge of Database and DBMS. Understand the fundamental concepts of DBMS with special emphasis on relational data model. Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database Model database using ER Diagrams and design database schemas based on the model. Create a small database using SQL. Store, Retrieve data in database.
		Object Orientated Programming Through Java	Understand the benefits of a well-structured program Understand different computer programming paradigms Understand underlying principles of Object-Oriented Programming in Java 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
		Web Interface Designing Technologies	 Understand and appreciate the web architecture and services. Gain knowledge about various components of a website. Demonstrate skills regarding creation of a static website and an interface to dynamic website. Learn how to install word press and gain the knowledge of installing various plugins to use in their websites.
		Web Applications Development using PHP & MYSQL	 Write simple programs in PHP. Understand how to use regular expressions, handle exceptions, and validate data using PHP. Apply In-Built functions and Create User defined functions in PHP programming. Write PHP scripts to handle HTML forms. Write programs to create dynamic and interactive web based applications using PHP and MYSQL. Know how to use PHP with a MySQL database and can write database driven web pages
		Internet of Things	 Appreciate the technology for IoT Understand various concepts, terminologies and architecture of IoT systems. Understand various applications of IoT Learn how to use various sensors and actuators for design of IoT. Learn how to connect various things to Internet. Learn the skills to develop simple IOT Devices.
		Application Development Using Python	 Understand and appreciate the web architecture and services. Examine Python syntax and semantics and be fluent in the use of Python flow control and functions. Demonstrate proficiency in handling Strings and File Systems. Create, run and manipulate Python Programs using core data structures like Lists, Dictionaries and use Regular

		Expressions. 5. Interpret the concepts of Object-Oriented Programming as used in Python. 6. Apply concepts of Python programming in various fields related to IOT, Web Services and Databases in Python.
	Data Science	 Develop relevant programming abilities. Demonstrate proficiency with statistical analysis of data. Develop the ability to build and assess data-based models. Demonstrate skill in data management Apply data science concepts and methods to solve problems in real-world contexts and will communicate these solutions effectively
	Python for Data Science	 Identify the need for data science and solve basic problems using Python builtin data types and their methods. Design an application with user-defined modules and packages using OOP concept Employ efficient storage and data operations using NumPy arrays. Apply powerful data manipulations using Pandas. Do data pre-processing and visualization using Pandas
PLICATIONS	Big Data Analytics Using R	 Understand data and classification of digital data. Understand Big Data Analytics. Load data in to R. Organize data in the form of R objects and manipulate them as needed. Perform analytics using R programming
COMPUTER APPLICATIONS	Data Science Using Python	 Understand basic concepts of data science Understand why python is a useful scripting language for developers. Use standard programming constructs like selection and repetition. Use aggregated data (list, tuple, and dictionary). Implement functions and modules.

Mobile Application Development	1. Identify basic terms ,tools and software related to android systems 2. Describe components of IDE, understand features of android development tools 3. Describe the layouts and controls 4. Explain the significance of displays using the given view 5. Explain the features of services and able to publish android Application 6. Developing interesting Android applications using MIT App Inventor
Cyber Security And Malware Analysis	Understand the computer networks, networking tools and cyber security Learn about NIST Cyber Security Framework Understand the OWASP Vulnerabilities Implement various Malware analysis tools Understand about Information Technology act 2000
E– Commerce Application Development	1. To apply in an integrative and summative fashion the students' knowledge in all fields of business studies by drafting a website presence plan. 2. To understand the factors needed in order to be a successful in ecommerce 3. To gain the skills to bring together knowledge gathered about the different components of building a web presence 4. To critically think about problems and issues that might pop up during the establishment of the web presence 5. To apply Word Press as a content management system (CMS), Plan their website by choosing colour schemes, fonts, layouts, and more
Real Time Governance System (Rtgs)	1. Understand the terms regarding Governance, E-Governance and RTGS 2. Learn about E-Governance Infrastructure 3. Understand the E-Governance implementation in several countries 4. Understand the E-Governance implementation in several Indian states 5. Understand the applications of RTG
Multimedia Tools and Applications	Gain knowledge on the concepts related to Multimedia.

		 Understand the concepts like image data representation and colour modes. Understand the different types of video signals and digital audio. Know about multimedia data compression types and audio compression standards Know about basic video compression techniques.
	Digital Imaging	 Gain knowledge about Types of Graphics, Types of Objects and Types of video editing tools Show their skills in editing and altering photographs for through a basic understanding of the tool box. Gain knowledge in using the layers. Gain knowledge in using the selection tools, repair tools. Gain knowledge in using selection tools, applying filters and can show their skills.
S	Tourism Development	Understand the basic tourism aspects Comprehend the requirements, role and responsibilities of profession of a Tourist Guide Apply the knowledge acquired in managing different groups and guiding in a tour Explain basic values related to tourism and heritage
SKILL DEVELOPMET COURSES	Journalistic Reporting	1. Understand the historical background and role Public Relations in various areas 2. Have insight into the use of the technological advancements Public Relations 3. Comprehend tools of Public Relations inorder to develop the required skills. 4. Understand the ethical aspects and future of Public Relations in India 5. Develop writing skills for news papers and creation of Blogs.
-	Survey and Reporting	 Understand the basics of survey and reporting needs and methods Comprehend designing of a questionnaire Conduct a simple and valid survey and Collect data Organize and interpret data and Prepare and submit report.

Financial Markets	Acquire knowledge of financial terms Know the concepts relating to and markets and different avenues of investment Understand the career skills related to Stock Exchanges Comprehend the personal financial planning and money market skill
Disaster Management	 Understand the nature, cause and effects of disasters Comprehend the importance of Disaster Management and the need of awareness Acquire knowledge on disaster preparedness, recoveryremedial measures and personal precautions Volunteer in pre and post disaster management service activities
Social Work	 Understand the basic concepts relating to social work practice, values, principles of social work and social problems in India List out different approaches of providing help to the people in need. Acquaint the process of primary methods of social work Get to know the skills of working with individuals, groups and communities
Advertising	 Understand the field of Advertising Comprehend opportunities and challenges in Advertising sector Prepare a primary advertising model Understand applying of related skills Examine the scope for making advertising a future career
Agricultural Marketing	1. Know the kinds of agricultural products and their movement 2. Understand the types, structure and functioning of agricultural marketing system 3. Comprehend related skills and apply them in sample situations 4. Extend this knowledge and skills to their production/consumption environment
Business Communication	Understand the types of business communication and correspondence Comprehend the processes like receiving, filing and replying Acquire knowledge in preparing good business communications Acquaint with organizational communication requirements and

		presentations.
		Understand the field level structure and
		functioning of insurance sector and it's role in
		protecting the risks 2. Comprehend pertaining
		skills and their application for promoting
	Insurance Promotion	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.
		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
	Logistics And Supply Chain	suppliers
	Management	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
		1. Understand the online business and its
		advantages and disadvantages
		2. Recognize new channels of marketing, their
	Online Business	scope and steps involved
		3. Analyze the procurement, payment process,
		security and shipping in online business
		4. Create new marketing tools for online
		business
		5. Define search engine, payment gateways
		and SEO techniques.
		1. Understand the organizational hierarchy and
		outlines of functioning
		2. Comprehend the role of office secretaryship
	Office Secretaryship	in a small and medium organization
	,	3. Acquire knowledge on office procedures
		and interpersonal skills
		4. Apply the skills in preparing and presenting
		notes, letters, statements, reports in different
		situations.
		1. Acquire necessary skills/hand on
		experience/ working knowledge on
	B	multimeters, galvanometers, ammeters,
	Retailing	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 household but will also learn the skill to repair the electrical appliances for the general troubleshoots and wiring fauly
Solar Energy	 Acquire knowledge onsolarradiation principles with respect to solar energy estimation. Get familiarized with various collecting techniques of solar energy and its storage Learn the solar photovoltaic technology principles and different types of solar cells for energy conversion and different photovoltaic applications. Understand the working principles of several solar appliances like Solar cookers, Solar hot water systems, Solar dryers, Solar Distillation, Solar greenhouses
Food Adulteration	 Get basic knowledge onvarious foods and about adulteration. Understand the adulteration of common foods and their adverse impact on health Comprehend certain skills of detecting adulteration of common foods. Be able to extend their knowledge to other kinds of adulteration, detection and remedies. Know the basic laws and procedures regarding food adulteration and consumer protection.
Environmental Audit	1. Understand the basic concepts Environmental health 2. Learn and identify the industrial pollution 3. Explain the highlights in the regulatory aspects of Environmental law and policy 4. Understand the various phases of Environmental Audit
Plant Nursery	 Understand the importance of a plant nursery and basic infrastructure toestablish it. Explain the basic material, tools and techniques required for nursery. Demonstrate expertise related to various practices in a nursery. Comprehend knowledge and skills to get an employment or to become an entrepreneur in plant nursery sector.
Fruits And Vegetable Preservation	1. Identify various types of fruits and vegetables and explain their nutritive value.

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		 Understand the fragile nature of fruits and vegetables and causes for their damage. Explain various methods of preservation for fresh fruits and vegetables. Get to know the value-added products made from fruits and vegetables.
	Dairy Technology	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	1. Understand the field level structure and functioning of insurance sector and it's 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.
COURSES	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 4) Solve problems pertaining to quantitative
LIFE SKILL COURSES	Entrepreneurship Development	1) After successful completion of the course the student will be able to; Understand the concept of Entrepreneurship, its applications and scope. 2) Know various types of financial institutions that help the business at Central, State and LocalLevel Understand Central and State Government policies 3) Aware of various tax

	incentives,—concessions Applies the knowledge for generating a broad idea for a starting an enterprise/start up 4) Understand the content for preparing a Project Report for a start up and differentiate between 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	 What is a healthy diet How can we use available information to optimize our diet? Can nutrition be used for a healthy life? Is there a one-size-fits-all "good" diet or should we individualize our dietary goals? Disaster management and responsiveness of public in pandemic and epidemic diseases Assess the impact of policies on health and hygiene Health measures to consider while travelling Awareness in public through digital media viz., mobile apps
Human Values and Professional Ethics (Hvpe)	1) Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual, etc. 2) Understand the value of harmonious relationship based on trust and respect in their life and profession 3) Understand the role of a human being in ensuring harmony in society and nature. 4) Distinguish between ethical and unethical practices, and start working out the strategy to

		actualize a harmonious environment wherever they work.
	Information & Communication Technology	 Understand the literature of social networks and their properties. Explain which network is suitable for whom. Develop skills to use various social networking sites like twitter, flickr, etc. Learn few GOI digital initiatives in higher education. Apply skills to use online forums, docs, spreadsheets, etc for communication, collaboration and research. Get acquainted with internet threats and security mechanisms.
	Leadership Education	Develop comprehensive understanding of personality Know how to assess and enhance one's own personality Comprehend leadership qualities and their importance Understand how to develop leadership qualities