NOBLE COLLEGE (AUTONOMOUS), MACHILIPATNAM

Programme Code	Programme Name	Course code	Course Name	Course Objectives	Course outcomes
BA	HEP	1101	**HISTORY**		
			History-Course1: ANCIENT INDIAN HISTORY & CULTURE (from Indus Valley Civilization to 13th Cen A.D)	1.Discuss the historical sources are very important to write a perfect history. 2. Explain the archaeological sources and the foreign accounts that provide valuable nformation of Indian history. .3. Discuss the different literary sources, like religious and secular literatures are useful for understanding ancient history. 4. Asses the importance of the accounts of foreign traveler	Learning Outcomes: After successful completion of this course, the student will be able to: 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
			Hsiotory-Course 2:MEDIEVAL INDIAN HISTORY & CULTURE (1206 A.D to 1764 A.D)	This course is an introductory paper intending to introduce prehistory, protohistory and important political events till 400 BCE of India to the students. The course also intends to give a brief idea about the different sources and the changing interpretations of ancient Indian history, protohistory and important political events till 400 BCE of India to the students. The course also intends to give a brief idea about the different sources and the changing interpretations of ancient Indian history.	Learning Outcomes: After successful completion of this course, the student will be able to 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
			Course- III - History & Cultute of INDIA from 1526 to 1857 AD		1. By studying this paper the student can understand the human evaluations ike the transformations occurred right from Indus valley civilization imes to 13th century A.D. 2.Identify and define various kinds of sources and understand how evidences are notified.
			Course -IV - History and culture of India 1857 to 1950	The course is designed to make the student aware about the making of modern India and the struggle for independence	Students will learn about the Mughal Indian society, economy and culture after consolidation of the Mughal rule India.
			Sem-V- History - V - Age of Rationalism and humanism the world between 15th and 18th centuries	In general, Renaissance Humanism was the study of ancient Greek and Roman texts with the goal of promoting new norms and values in society. These norms and views varied from those at the time because they focused less heavily on a religious worldview.	Age of Rationalism and humanism the World between. 15th to 18th Centuries. After successful completion of this course

			Sem-V- History- VI- History and culture of Andhra Desa(from 12th To 19th century A.D	understand the concept and meaning of culture; • establish the relationship between culture and civilization; • establish the link between culture and heritage; • discuss the role and impact of culture in human life. • describe the distinctive features of Indian culture; • identify the central points and uniqueness of Indian culture; • explain the points of diversity and underlying unity in it; and • trace the influence and significance of geographical features on Indian culture.	1. Students will be able to demonstrate a breadth of training across historical time and space. 2. Students will be able to develop an in-depth understanding of a field, theme or region. 3. Students will be able to demonstrate an historical awareness of the diversity of the human experience across time and space (research papers). 4. Students will be able to formulate historical arguments and communicate those arguments in clear and persuasive prose
			Sem-VI-History-VII-History of Modern Europe(From 19th cent. To 1945 A.D)	Modern European history has been defined by the lasting legacy of two fundamental transformations that began roughly during the late 1700s	1. Understand background of our religion, customs institutions, administration and so on. 2. . Understand the present existing social, political, religious and economic conditions of the people. 3. Analyze relationship between the past and the present is lively presented in the history. 4. Develop practical skills helpful in the study and understanding of historical events. They: (a) Draw historical maps, charts, diagrams etc. (b) Prepare historical models, tools etc.
			ECONOMICS		
			Course-1 MICROECONOMIC ANALYSIS	The objective of microeconomic theory is to analyse how individual decision-makers, both consumers and producers, behave in a variety of economic environments.	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 in difference 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

			Course-2 MACROECONOMIC ANALYSIS	The overarching goals of macroeconomics are to maximize the standard of living and achieve stable economic growth. The goals are supported by objectives such as minimizing unemployment, increasing productivity, controlling inflation, and more.	1. Remembers and states in a systematic way (knowledge) Various concepts, definitions,laws and principles of macroeconomic theory with referenceto income, employment, money, banking and finance 2. Explains (understanding) a. the difference between various concepts and components of national income with illustrations and methods of measuring national income b. various terms, concepts, laws and principles, theories relating to income,employment, consumption, investment, money, price-level and phases of trade cycles c. functions of commercial banks and central bank, creation and control of credit 3. Critically examines using data and figures (analysis and evaluation) a. in order to understand the interrelationship between various components of national income
			Sem-III-Economics-III-Macro Economics-1	The overarching goals of macroeconomics are to maximize the standard of living and achieve stable economic growth. The goals are supported by objectives such as minimizing unemployment, increasing productivity, controlling inflation, and more.	1. Remembers and states in a systematic way (knowledge) Various concepts, definitions,laws and principles of macroeconomic theory with referenceto income, employment, money, banking and finance 2. Explains (understanding) a. the difference between various concepts and components of national income with illustrations and methods of measuring national income b. various terms, concepts, laws and principles, theories relating to income,employment, consumption, investment, money, price-level and phases of trade cycles c. functions of commercial banks and central bank, creation and control of credit 3. Critically examines using data and figures (analysis and evaluation) a. in order to understand the interrelationship between various components of national income
			Sem-IV-Economics-IV-MacroEconomics	The overarching goals of macroeconomics are to maximize the standard of living and achieve stable economic growth. The goals are supported by objectives such as minimizing unemployment, increasing productivity, controlling inflation, and more.	1. Remembers and states in a systematic way (knowledge) Various concepts, definitions,laws and principles of macroeconomic theory with referenceto income, employment, money, banking and finance 2. Explains (understanding) a. the difference between various concepts and components of national income with illustrations and methods of measuring national income b. various terms, concepts, laws and principles, theories relating to income,employment, consumption, investment, money, price-level and phases of trade cycles c. functions of commercial banks and central bank, creation and control of credit 3. Critically examines using data and figures (analysis and evaluation) a. in order to understand the interrelationship between various components of national income
			Sem-V-Paper-V-Economic Development and Indian Economy	It aims to reduce the population of people living below the poverty line and provide them access to employment and social services. Increased Standard of Living: Increasing the standard of living by increasing the per capita income and equal distribution of income is one of the main aims of India's economic planning.	1. Student will be able to understand the links between household behavior and the economic models of demand. 2. It will also help in understanding the efficiency and equity implications of market interference, including government policy
			Sem-V-Paper-VI-Indian and Andhra Pradesh Economy	Economic Equity and Social Justice. Full Employment. Economic Self-Reliance.	To focus on various concepts, theories related to population studies in the context of economic development in India.
			Sem-VI-Paper-VII-Public Finance	The main objective is managing the basic needs of the public like food, shelter, health, infrastructure, and education. All these are the government's responsibilities so that the fundamental public needs are fulfilled and contribute to the development of the economy.	1. Cash Transactions and cash Balance approaches 2. The Process of Credit Creation, Assets and Liabilities. 3. Function of the Central Bank

			Sem-VI-Paper-Cluster-1-Rural Economy	The main objective of the Rural Development is improving the living standards of rural people by utilizing the easily available natural and human resources.	1. To impart better education with values and transformation of knowledge from class room to common man. 2. To attain inclusive growth and reduce regional imbalances and income inequalities. 3. Inculcate critical thinking to carry out scientific investigation objectively without being biased with preconceived notions. 4. Equip the student with skills to analyse problems, formulate a hypothesis, evaluate and validate results, and draw reasonable conclusions thereof. 5. Continue to acquire relevant knowledge and skills appropriate to professional activities.
			Sem-VI-Paper-Cluster-2-Rural Industrialization	The objectives of rural industria- lisation are many and variously defined ; promotion of decentralisa- tion and balanced industrial growth, removal of economic inequality; devolution of social and political power; eradication of rural un- employment and under-employment; establishment of an agro-industrial base.	rogramme Specific Outcomes with focus on participatory development. Students can join in Rural Development Organizations / Institutions as Social Workers.
			Sem-VI-Paper-Cluster-3-Rural Marketing	The course is mainly based on the Probability and the Sampling as well as a little bit of Hypothesis. In our daily life we use probability. Each and every moment is probabilistic in our daily life. So the knowledge of probability is a most essential in real life. Sampling is the most important part of any survey. On the other hand it is a crucial part of the Rural Studies.	The course is mainly based on the Probability and the Sampling as well as a little bit of Hypothesis. In our daily life we use probability. Each and every moment is probabilistic in our daily life. So the knowledge of probability is a most essential in real life. Sampling is the most important part of any survey. On the other hand it is a crucial part of the Rural Studies.
			POLITICAL SCIENCE		
			Course-1: INTRODUCTION TO POLITICAL SCIENCE	The purpose is to familiarize students with the basic concepts and approaches to the study of comparative politics. More specifically the course will focus on examining politics in a historical framework while engaging with various themes of comparative analysis in developed and developing countries.	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
			Course-2: BASIC ORGANS OF THE GOVERNMENT	1. esplain the thrw principal organs of modcrn governments. 2. describe the co~llpositionand types of esccutivc; 3. recall the organisation of a Icgislaturc. 4. analyze the furictions of the csecutivc. the lgislature and the judiciary;. 5. explain how independence of judiciary is ensured.	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
			Course-3: Indian Constitution and Central Government	The main objectives of the Indian constitution include sovereignty, socialism, secularism, democracy, and republic. Apart from this, justice, liberty, and fraternity are also a part of the objectives of the Indian constitution.	1. Understand the meaning and importance of Constitution 2. Explain about making of Indian Constitution - contribution of Constituent assembly on it. 3. Describe the Salient (Outstanding) features of Indian Constitution. 4. Describe the importance of Preamble of the Indian Constitution and its significance.
			Course-4:Indian Government & Politics	The main objective of Indian Polity is to create a set of disciplines that can include a broad range of subjects relating to political framework and leading administration. For example, it may help to highlight the objective meaning of constitution development, directive principles, fundamental rights, citizenship, and many more. Objective research includes executive members such as the president, the prime minister, and the council of ministers, the judiciary system, state governments, and the authorised bodies that are actively involved. It may have a strong influence on the rules and regulations of the country and hence it helps to build and develop a nation.	1. The learner develops the ability to use critical, analytical, and reflective hinking and reasoning. 2. The learner acquires the ability to reflect on social and ethical responsibilities in his/her professional life. 3. The learner gains experience and confidence in the dissemination of project/research outputs.

			Sem-V - Paper-V :Indian Political thought	To evolve a shared vision of national development priorities, sectors and strategies with the active involvement of States.	1. The learner acquires the competence to work responsibly and creatively as an individual or as a member or leader of a team and in multidisciplinary environments..2. The learner becomes able to assess the impact of the economic, social, and political environment from a global, national and regional level. 3. The learner gets to know how to access written and visual, primary and secondary sources of information, interpret concepts and data from a variety of sources in developing disciplinary and interdisciplinary analysis.
			Sem-V - Paper-VI :Western Political thought	A political philosopher aims at suggesting how to underline the basic principles regarding the justification of a particular form of state.	1. Knowledge of Political Realm: Understand the fundamentals theories, political process and issues of national and international politics, including the political process in India. Effectively apply comparative, critical and analytical skills in reading and writing to address significant issues of the political world. 2. Interdisciplinary Perspective: Understand interdisciplinary perspective to the study of social sciences. Evaluate diverse point of views embedded within various frameworks which may include temporal, cultural, linguistic, socio-political or technological contexts.
			Sem-VI - Paper-VII :Principles of Public Adminidtration	Leads and manage organizations • Understand and contribute to public policy • Critically analyze policies, programs, problems, and issues and make pertinent recommendations • Communicate effectively in oral and written discourse with a diverse and changing workforce and public	1. Develop a sound theoretical and practical understanding of the basic concepts and theories of organization and functioning of public administration in diverse field. 2. Prepare and inculcate the requisite skills and aptitude imperative for to be a good public administrator. 3. Promote and prepare students for greater commitment to higher ethical standards ofpublic administration.
B.A	M.E.P	1201	**MATHEMATICS**		
			COURSE-I DIFFERENTIAL EQUATIONS	This course is intended to expose you to the basic ideas of Differential Equations combined with some ideas from Linear Algebra. To be successful, a student must be able at the end of the class to solve the majority of the problems with no external help.	1. After successful completion of this course, the student will be able to; 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, withconstant coefficients. 5. Understand the concept and apply appropriate methods for solving differential equations.
			COURSE-II THREE DIMENSIONAL ANALYTICAL SOLID GEOMETRY	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side ...	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
			PAPER- III -Real Analysis-I	Real analysis, this course is designed to provide fundamental concepts of analysis, including classical theory of functions of a real variable, differentiation and integration of real functions, as well as some fundamental topics in general topology and metric space theory.	Completing the course students will acquire basic skills that will be measured considering the following learning outcomes: 1. Students will be able to demonstrate competence with elementary properties of sets by proving identities involving union and intersection and Cartesian Products of sets. 2. Students will be able to demonstrate competence with elementary properties of functions by proving results involving composite functions and inverse functions.
			PAPER - IV-Real Analysis & Group Theory	Group theory is one of the great simplifying and unifying ideas in modern mathematics. It was introduced in order to understand the solutions to polynomial equations and has its full significance, as a mathematical formulation of symmetry, been understood.	After studying this course, you should be able to: 1. explain what is meant by a symmetry of a plane figure. 2. Fnd the composite of two symmetries. 3. Find the inverse of a symmetry. 4. Determine whether a given set and binary operation form a group by checking group axioms. 5. Describe the symmetries of some bounded three-dimensional figures.

			Sem-V-PAPER - V- LINEAR ALGEBRA	1. Be able to state the group axioms and to verify whether a given set and binary operation form a group. 2. Define subgroup, identity element, inverse, associativity, order of an element, order of a group, group table, inverse, cyclic group, abelian/commutative group, 3. Compute orders, powers, and inverses in concrete examples.	Upon successful completion of this course, students will: Solve systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion. Carry out matrix operations, including inverses and determinants.
			Sem-V Paper-VI-Numerical Analysis	To provide the numerical methods of solving the non-linear equations, interpolation, differentiation, and integration. To improve the student's skills in numerical methods by using the numerical analysis software and computer facilities.	Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations. Analyse and evaluate the accuracy of common numerical methods.
			SEM-VI - PAPER - VII (MAT076)- MATRIX THEORY	1. Use the method of Gauss-Jordan elimination to find the solutions of systems of simultaneous linear equations 2. Solve a system of linear equations by row-reducing its augmented form 3. Perform the matrix operations of addition, multiplication and transposition and express a system of simultaneous linear equations in matrix form	1. Solve systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion. 2. Carry out matrix operations, including inverses and determinants. 3. Demonstrate understanding of the concepts of vector space and subspace. 4. Demonstrate understanding of linear independence, span, and basis. 5. Determine eigenvalues and eigenvectors and solve eigenvalue problems. 6 Apply principles of matrix algebra to linear transformations. 7. Demonstrate understandingof inner products and associated norms.
			Sem-VI- Cluster-I-Advanced Numerical Analysis	The course aims to provide students with the specialist knowledge in advanced Numerical Analysis. With this overall aim, the course strives to enable students to: Understand analytical, developmental and technical principles that relate to Numerical Linear Algebra, Numerical Methods for solving Differential Equations, and Numerical Optimization, develop the academic abilities required to solve problems and applications in Numerical Analysis and/or Numerical Optimization and critically assess relevant aspects of the industry, and demonstrate an ability to initiate and sustain in-depth research in Numerical Analysis or Numerical Optimization	1. Knowledge and Understanding: During the lecture the student understands the nature and operations of Numerical Analysis, demonstrates familiarity with theories and concepts used in Numerical Analysis, and identifies the steps required to carry out a piece of research on a topic in Numerical Analysis. 2. Intellectual Skills: By the end of the course the student is expected to recognize and apply appropriate theories, principles and concepts relevant to Numerical Analysis, critically assess and evaluate the literature within the field of Numerical Analysis, analyze and interpret information from a variety of sources relevant to Numerical Analysis.
			Sem-VI- Cluster-II-Laplace Transforms	The Laplace transform is used to solve differential equations. It is accepted widely in many fields. We know that the Laplace transform simplifies a given LDE (linear differential equation) to an algebraic equation, which can later be solved using the standard algebraic identities.	After completing this course, students will be able to understand the applications of Laplace transform and Fourier series. The students will be able to solve ordinary differential equations using Laplace transform.
			Sem-VI- Cluster-III - Project Work	The Laplace transform is used to solve differential equations. It is accepted widely in many fields. We know that the Laplace transform simplifies a given LDE (linear differential equation) to an algebraic equation, which can later be solved using the standard algebraic identities.	
			ECONOMICS		

			Course-1 MICROECONOMIC ANALYSIS	The objective of microeconomic theory is to analyse how individual decision-makers, both consumers and producers, behave in a variety of economic environments.	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 in difference 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
			Course-2 MACROECONOMIC ANALYSIS	The overarching goals of macroeconomics are to maximize the standard of living and achieve stable economic growth. The goals are supported by objectives such as minimizing unemployment, increasing productivity, controlling inflation, and more.	1. Remembers and states in a systematic way (knowledge) Various concepts, definitions,laws and principles of macroeconomic theory with referenceto income, employment, money, banking and finance 2. Explains (understanding) a. the difference between various concepts and components of national income with illustrations and methods of measuring national income b. various terms, concepts, laws and principles, theories relating to income,employment, consumption, investment, money, price-level and phases of trade cycles c. functions of commercial banks and central bank, creation and control of credit 3. Critically examines using data and figures (analysis and evaluation) a. in order to understand the interrelationship between various components of national income
			Sem-III-Economics-III-Macro Economics-1	The overarching goals of macroeconomics are to maximize the standard of living and achieve stable economic growth. The goals are supported by objectives such as minimizing unemployment, increasing productivity, controlling inflation, and more.	1. Remembers and states in a systematic way (knowledge) Various concepts, definitions,laws and principles of macroeconomic theory with referenceto income, employment, money, banking and finance 2. Explains (understanding) a. the difference between various concepts and components of national income with illustrations and methods of measuring national income b. various terms, concepts, laws and principles, theories relating to income,employment, consumption, investment, money, price-level and phases of trade cycles c. functions of commercial banks and central bank, creation and control of credit 3. Critically examines using data and figures (analysis and evaluation) a. in order to understand the interrelationship between various components of national income

			Sem-IV-Economics-IV-MacroEconomics	The overarching goals of macroeconomics are to maximize the standard of living and achieve stable economic growth. The goals are supported by objectives such as minimizing unemployment, increasing productivity, controlling inflation, and more.	1. Remembers and states in a systematic way (knowledge) Various concepts, definitions,laws and principles of macroeconomic theory with referenceto income, employment, money, banking and finance 2. Explains (understanding) a. the difference between various concepts and components of national income with illustrations and methods of measuring national income b. various terms, concepts, laws and principles, theories relating to income,employment, consumption, investment, money, price-level and phases of trade cycles c. functions of commercial banks and central bank, creation and control of credit 3. Critically examines using data and figures (analysis and evaluation) a. in order to understand the interrelationship between various components of national income
			Sem-V-Paper-V-Economic Development and Indian Economy	It aims to reduce the population of people living below the poverty line and provide them access to employment and social services. Increased Standard of Living: Increasing the standard of living by increasing the per capita income and equal distribution of income is one of the main aims of India's economic planning.	1. Student will be able to understand the links between household behavior and the economic models of demand. 2. It will also help in understanding the efficiency and equity implications of market interference, including government policy
			Sem-V-Paper-VI-Indian and Andhra Pradesh Economy	Economic Equity and Social Justice. Full Employment. Economic Self-Reliance.	To focus on various concepts, theories related to population studies in the context of economic development in India.
			Sem-VI-Paper-VII-Public Finance	The main objective is managing the basic needs of the public like food, shelter, health, infrastructure, and education. All these are the government's responsibilities so that the fundamental public needs are fulfilled and contribute to the development of the economy.	1. Cash Transactions and cash Balance approaches 2. The Process of Credit Creation, Assets and Liabilities. 3. Function of the Central Bank
			Sem-VI-Paper-Cluster-1-Rural Economy	The main objective of the Rural Development is improving the living standards of rural people by utilizing the easily available natural and human resources.	1. To impart better education with values and transformation of knowledge from class room to common man. 2. To attain inclusive growth and reduce regional imbalances and income inequalities. 3. Inculcate critical thinking to carry out scientific investigation objectively without being biased with preconceived notions. 4. Equip the student with skills to analyse problems, formulate a hypothesis, evaluate and validate results, and draw reasonable conclusions thereof. 5. Continue to acquire relevant knowledge and skills appropriate to professional activities.
			Sem-VI-Paper-Cluster-2-Rural Industrialization	The objectives of rural industria- lisation are many and variously defined ; promotion of decentralisa- tion and balanced industrial growth, removal of economic inequality; devolution of social and political power; eradication of rural un- employment and under-employment; establishment of an agro-industrial base.	rogramme Specific Outcomes with focus on participatory development. Students can join in Rural Development Organizations / Institutions as Social Workers.
			Sem-VI-Paper-Cluster-3-Rural Marketing	The course is mainly based on the Probability and the Sampling as well as a little bit of Hypothesis. In our daily life we use probability. Each and every moment is probabilistic in our daily life. So the knowledge of probability is a most essential in real life. Sampling is the most important part of any survey. On the other hand it is a crucial part of the Rural Studies.	The course is mainly based on the Probability and the Sampling as well as a little bit of Hypothesis. In our daily life we use probability. Each and every moment is probabilistic in our daily life. So the knowledge of probability is a most essential in real life. Sampling is the most important part of any survey. On the other hand it is a crucial part of the Rural Studies.
			POLITICAL SCIENCE		

			Course-1: INTRODUCTION TO POLITICAL SCIENCE	The purpose is to familiarize students with the basic concepts and approaches to the study of comparative politics. More specifically the course will focus on examining politics in a historical framework while engaging with various themes of comparative analysis in developed and developing countries.	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
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			Course-3: Indian Constitution and Central Government	The main objectives of the Indian constitution include sovereignty, socialism, secularism, democracy, and republic. Apart from this, justice, liberty, and fraternity are also a part of the objectives of the Indian constitution.	1. Understand the meaning and importance of Constitution 2. Explain about making of Indian Constitution - contribution of Constituent assembly on it. 3. Describe the Salient (Outstanding) features of Indian Constitution. 4. Describe the importance of Preamble of the Indian Constitution and its significance.
			Course-4:Indian Government & Politics	The main objective of Indian Polity is to create a set of disciplines that can include a broad range of subjects relating to political framework and leading administration. For example, it may help to highlight the objective meaning of constitution development, directive principles, fundamental rights, citizenship, and many more. Objective research includes executive members such as the president, the prime minister, and the council of ministers, the judiciary system, state governments, and the authorised bodies that are actively involved. It may have a strong influence on the rules and regulations of the country and hence it helps to build and develop a nation.	1. The learner develops the ability to use critical, analytical, and reflective hinking and reasoning. 2. The learner acquires the ability to reflect on social and ethical responsibilities in his/her professional life. 3. The learner gains experience and confidence in the dissemination of project/research outputs.
			Sem-V - Paper-V :Indian Political thought	To evolve a shared vision of national development priorities, sectors and strategies with the active involvement of States.	1. The learner acquires the competence to work responsibly and creatively as an individual or as a member or leader of a team and in multidisciplinary environments..2. The learner becomes able to assess the impact of the economic, social, and political environment from a global, national and regional level. 3. The learner gets to know how to access written and visual, primary and secondary sources of information, interpret concepts and data from a variety of sources in developing disciplinary and interdisciplinary analysis.
			Sem-V - Paper-VI :Western Political thought	A political philosopher aims at suggesting how to underline the basic principles regarding the justification of a particular form of state.	1. Knowledge of Political Realm: Understand the fundamentals theories, political process and issues of national and international politics, including the political process in India. Effectively apply comparative, critical and analytical skills in reading and writing to address significant issues of the political world. 2. Interdisciplinary Perspective: Understand interdisciplinary perspective to the study of social sciences. Evaluate diverse point of views embedded within various frameworks which may include temporal, cultural, linguistic, socio-political or technological contexts.
			Sem-VI - Paper-VII :Principles of Public Adminidtration	Leads and manage organizations • Understand and contribute to public policy • Critically analyze policies, programs, problems, and issues and make pertinent recommendations • Communicate effectively in oral and written discourse with a diverse and changing workforce and public	1. Develop a sound theoretical and practical understanding of the basic concepts and theories of organization and functioning of public administration in diverse field. 2. Prepare and inculcate the requisite skills and aptitude imperative for to be a good public administrator. 3. Promote and prepare students for greater commitment to higher ethical standards ofpublic administration.
B.A	T.H.P	1301	**TELUGU**		
			Course-1:Kaavya Sudha(Modern Language)		
			Course-2:Aadhunika Kavitaaa Parichayam (Modern Language)		

			Course-3:History of Telugu Literature and Drama		
			Course-4:History of Telugu Literature and Drama		
			Sem-V-Paper-V-Telugu bhashaa charitra		
			Sem-V-Paper-VI-Baala Vyaakaranam, Chandassu, alankaaraalu		
			Sem-VI-Paper-VII-Adhunika Sastramu		
			Sem-VI--C1-Journalism		
			Sem-VI--C2-Adhunika Telugu Basha Nirmanam		
			Sem-VI--C3-Janapada Sahithyam-Kalalu		
			HISTORY		
			History-Course1: ANCIENT INDIAN HISTORY & CULTURE (from Indus Valley Civilization to 13th Cen A.D)	1.Discuss the historical sources are very important to write a perfect history. 2. Explain the archaeological sources and the foreign accounts that provide valuable nformation of Indian history. .3. Discuss the different literary sources, like religious and secular literatures are useful for understanding ancient history. 4. Asses the importance of the accounts of foreign traveler	Learning Outcomes: After successful completion of this course, the student will be able to: 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
			Hsiotory-Course 2:MEDIEVAL INDIAN HISTORY & CULTURE (1206 A.D to 1764 A.D)	This course is an introductory paper intending to introduce prehistory, protohistory and important political events till 400 BCE of India to the students. The course also intends to give a brief idea about the different sources and the changing interpretations of ancient Indian history, protohistory and important political events till 400 BCE of India to the students. The course also intends to give a brief idea about the different sources and the changing interpretations of ancient Indian history.	Learning Outcomes: After successful completion of this course, the student will be able to 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
			Course- III - History & cultute of INDIA from 1526 to 1857 AD		1. By studying this paper the student can understand the human evaluations ike the transformations occurred right from Indus valley civilization imes to 13th century A.D. 2.Identify and define various kinds of sources and understand how evidences are notified.
			Course -IV - History and culture of India 1857 to 1950	The course is designed to make the student aware about the making of modern India and the struggle for independence	Students will learn about the Mughal Indian society, economy and culture after consolidation of the Mughal rule India.

			Sem-V- History - V - Age of Rationalism and humanism the world between 15th and 18th centuries	In general, Renaissance Humanism was the study of ancient Greek and Roman texts with the goal of promoting new norms and values in society. These norms and views varied from those at the time because they focused less heavily on a religious worldview.	Age of Rationalism and humanism the World between. 15th to 18th Centuries. After successful completion of this course
			Sem-V- History- VI- History and culture of Andhra Desa(from 12th To 19th century A.D	understand the concept and meaning of culture; • establish the relationship between culture and civilization; • establish the link between culture and heritage; • discuss the role and impact of culture in human life. • describe the distinctive features of Indian culture; • identify the central points and uniqueness of Indian culture; • explain the points of diversity and underlying unity in it; and • trace the influence and significance of geographical features on Indian culture.	1. Students will be able to demonstrate a breadth of training across historical time and space. 2. Students will be able to develop an in-depth understanding of a field, theme or region. 3. Students will be able to demonstrate an historical awareness of the diversity of the human experience across time and space (research papers). 4. Students will be able to formulate historical arguments and communicate those arguments in clear and persuasive prose
			Sem-VI-History-VII-History of Modern Europe(From 19th cent. To 1945 A.D)	Modern European history has been defined by the lasting legacy of two fundamental transformations that began roughly during the late 1700s	1. Understand background of our religion, customs institutions, administration and so on. 2. . Understand the present existing social, political, religious and economic conditions of the people. 3. Analyze relationship between the past and the present is lively presented in the history. 4. Develop practical skills helpful in the study and understanding of historical events. They: (a) Draw historical maps, charts, diagrams etc. (b) Prepare historical models, tools etc.
			POLITICAL SCIENCE		
			Course-1: INTRODUCTION TO POLITICAL SCIENCE	The purpose is to familiarize students with the basic concepts and approaches to the study of comparative politics. More specifically the course will focus on examining politics in a historical framework while engaging with various themes of comparative analysis in developed and developing countries.	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
			Course-2: BASIC ORGANS OF THE GOVERNMENT	1. esplain the thrw principal organs of modcrn governments. 2. describe the co~llpositionand types of esccutivc; 3. recall the organisation of a Icgislaturc. 4. analyze the furictions of the csecutivc. the lgislature and the judiciary;. 5. explain how independence of judiciary is ensured	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
			Course-3: Indian Constitution and Central Government	The main objectives of the Indian constitution include sovereignty, socialism, secularism, democracy, and republic. Apart from this, justice, liberty, and fraternity are also a part of the objectives of the Indian constitution.	1. Understand the meaning and importance of Constitution 2. Explain about making of Indian Constitution - contribution of Constituent assembly on it. 3. Describe the Salient (Outstanding) features of Indian Constitution. 4. Describe the importance of Preamble of the Indian Constitution and its significance.

			Course-4:Indian Government & Politics	The main objective of Indian Polity is to create a set of disciplines that can include a broad range of subjects relating to political framework and leading administration. For example, it may help to highlight the objective meaning of constitution development, directive principles, fundamental rights, citizenship, and many more. Objective research includes executive members such as the president, the prime minister, and the council of ministers, the judiciary system, state governments, and the authorised bodies that are actively involved. It may have a strong influence on the rules and regulations of the country and hence it helps to build and develop a nation.	1. The learner develops the ability to use critical, analytical, and reflective hinking and reasoning. 2. The learner acquires the ability to reflect on social and ethical responsibilities in his/her professional life. 3. The learner gains experience and confidence in the dissemination of project/research outputs.
			Sem-V - Paper-V :Indian Political thought	To evolve a shared vision of national development priorities, sectors and strategies with the active involvement of States.	1. The learner acquires the competence to work responsibly and creatively as an individual or as a member or leader of a team and in multidisciplinary environments..2. The learner becomes able to assess the impact of the economic, social, and political environment from a global, national and regional level. 3. The learner gets to know how to access written and visual, primary and secondary sources of information, interpret concepts and data from a variety of sources in developing disciplinary and interdisciplinary analysis.
			Sem-V - Paper-VI :Western Political thought	A political philosopher aims at suggesting how to underline the basic principles regarding the justification of a particular form of state.	1. Knowledge of Political Realm: Understand the fundamentals theories, political process and issues of national and international politics, including the political process in India. Effectively apply comparative, critical and analytical skills in reading and writing to address significant issues of the political world. 2. Interdisciplinary Perspective: Understand interdisciplinary perspective to the study of social sciences. Evaluate diverse point of views embedded within various frameworks which may include temporal, cultural, linguistic, socio-political or technological contexts.
			Sem-VI - Paper-VII :Principles of Public Adminidtration	Leads and manage organizations • Understand and contribute to public policy • Critically analyze policies, programs, problems, and issues and make pertinent recommendations • Communicate effectively in oral and written discourse with a diverse and changing workforce and public	1. Develop a sound theoretical and practical understanding of the basic concepts and theories of organization and functioning of public administration in diverse field. 2. Prepare and inculcate the requisite skills and aptitude imperative for to be a good public administrator. 3. Promote and prepare students for greater commitment to higher ethical standards ofpublic administration.
B.A	E.H.P	1401	**ENGLISH**		
			COURSE- 1 AN INTRODUCTION TO THE ENGLISH LITERATURE (600-1500)	1. Educate students in both the artistry and utility of the English language through the study of literature and other contemporary forms of culture. 2. Provide students with the critical faculties necessary in an academic environment, on the job, and in an increasingly complex, interdependent world. 3. Graduate students who are capable of performing research, analysis, and criticism of literary and cultural texts from different historical periods and genres. 4. Assist students in the development of intellectual flexibility, creativity, and cultural literacy so that they may engage in life-long learning.	1. know about the features of old , middle english and renaissance periods 2. review the aspects of different literary genres forms and terms 3. identify the characteristicts in poetry, drama and literary criticism 4. Interpret literature of these periods critically

			Course-II - An introduction to Elizabethan and Jacobean Literaturers (1500-1660)	1. This course aims at familiarising the student with the key features of British drama during the Golden age and the reign of king James I. 2. The course aims at providing the student a fair idea ofthe plays written during the transition from religious drama to the Golden age; the era of Shakespeare and Marlowe 3. After doing this course the student will have an understanding of thekinds of plays written by the great masters, Shakespeare and Marlowe besides the writings of the university wits	1. identify the features of Elizabethan and Jacobean periods. 2. review the aspects of romanticcomedy and evolution of prose as an genre 3. distinguish the chracteristicts that eveolved in poetry drama prose and literry criticism 4. assess literature of these periods critically
			Course-III - Prose & Drama	1. The student understand passages in English when they read them at normal conversational speed. 2. Recognize the characteristic English sounds. 3. Find contextual clues to meanings . 4. Get the tone of the speaker with which ideas are conveyed	Students are formed into skilled, knowledgeable, and ethical interpreters of literary texts in English by nurturing their ability to understand drama
			Course-IV -Poetry & Fiction	evelop a working knowledge of the differences between poetry, fiction and the third genre. Understand how to talk about these genres as writers	1. Develop a working knowledge of the differences between poetry, fiction and the third genre. 2. Understand how to talk about these genres as writers. 3. Become familiar with the workshop as a form of receiving and giving feedback. 4.Understand the writing process, from idea to draft, workshop to revision, and the importance of all steps
			Sem-V-Paper-V-20th Century English Literature	have a sophisticated understanding of the relationship between literary texts and social structures,	1. Literary history of the period from the Norman Conquest to the Restoration.2. Dramatic devices and techniques such as aside, soliloquy, play within a play, chorus mime etc. 3. Poetry from the poets belonging to the periods of Medieval and Renaissance. 4. Broad trends, authors and works of the period.
			Sem-V-Paper-VI-Glimpses of world Literature		1. Introduces guest in English. 2. Writes non formal letters. 3. Debate on “If wars are the only ways to resolve conflict”. 4. Engages in conversation in English with people from different walks of life.
			Sem-VI-Paper-VII-Elements of Literature	Identify and define the following literary terms: plot, point of view, setting, character, and theme. Create a story arc for a well-known story. Explain the importance of each literary element.	1. Use prewriting techniques to develop ideas and produce multiple drafts of different types of paragraphs.2. Recognize and create the parts of a paragraph.3. Recognize and incorporate basic grammar, mechanics, and sentence variety in writing.4. Develop skills for using the computer for writing assignments.
			Sem-VI-Paper-C1-American Literature-I	The course aims to introduce the student to the literature developed in northern America from the Colonial era up to the American Civil War. Students are also exposed to terminology and modes of approach to the study and analysis of literary texts with the aim of developing skills necessary for students of literature.	1. By the end of the course the student will be able to define the elements of short story and novel as literary genres, and their importance for literary analysis 2. By the end of the course the student will be able to identify features of short story as a literary genre 3. By the end of the course the student will be able to identify features of novel as a literary genre By the end of the course the student will be able to synthesize the significance of short story and novel as literary genres and evaluate them for improving language and teaching skills
			Sem-VI-Paper-C2-American Literature-II	The course aims to introduce the student to the literature developed in northern America from the Colonial era up to the American Civil War. Students are also exposed to terminology and modes of approach to the study and analysis of literary texts with the aim of developing skills necessary for students of literature.	1. By the end of the course the student will be able to define the elements of short story and novel as literary genres, and their importance for literary analysis 2. By the end of the course the student will be able to identify features of short story as a literary genre 3. By the end of the course the student will be able to identify features of novel as a literary genre By the end of the course the student will be able to synthesize the significance of short story and novel as literary genres and evaluate them for improving language and teaching skills

			Sem-VI-Paper-C3-American Literature-III	The course aims to introduce the student to the literature developed in northern America from the Colonial era up to the American Civil War. Students are also exposed to terminology and modes of approach to the study and analysis of literary texts with the aim of developing skills necessary for students of literature.	1. By the end of the course the student will be able to define the elements of short story and novel as literary genres, and their importance for literary analysis 2. By the end of the course the student will be able to identify features of short story as a literary genre 3. By the end of the course the student will be able to identify features of novel as a literary genre By the end of the course the student will be able to synthesize the significance of short story and novel as literary genres and evaluate them for improving language and teaching skills
			HISTORY		
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			Sem-V- History- VI- History and culture of Andhra Desa(from 12th To 19th century A.D	understand the concept and meaning of culture; • establish the relationship between culture and civilization; • establish the link between culture and heritage; • discuss the role and impact of culture in human life. • describe the distinctive features of Indian culture; • identify the central points and uniqueness of Indian culture; • explain the points of diversity and underlying unity in it; and • trace the influence and significance of geographical features on Indian culture.	1. Students will be able to demonstrate a breadth of training across historical time and space. 2. Students will be able to develop an in-depth understanding of a field, theme or region. 3. Students will be able to demonstrate an historical awareness of the diversity of the human experience across time and space (research papers). 4. Students will be able to formulate historical arguments and communicate those arguments in clear and persuasive prose
			Sem-VI-History-VII-History of Modern Europe(From 19th cent. To 1945 A.D)	Modern European history has been defined by the lasting legacy of two fundamental transformations that began roughly during the late 1700s	1. Understand background of our religion, customs institutions, administration and so on. 2. . Understand the present existing social, political, religious and economic conditions of the people. 3. Analyze relationship between the past and the present is lively presented in the history. 4. Develop practical skills helpful in the study and understanding of historical events. They: (a) Draw historical maps, charts, diagrams etc. (b) Prepare historical models, tools etc.
			POLITICAL SCIENCE		
			Course-1: INTRODUCTION TO POLITICAL SCIENCE	The purpose is to familiarize students with the basic concepts and approaches to the study of comparative politics. More specifically the course will focus on examining politics in a historical framework while engaging with various themes of comparative analysis in developed and developing countries.	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
			Course-2: BASIC ORGANS OF THE GOVERNMENT	1. esplain the thrw principal organs of modcrn governments. 2. describe the co~llpositionand types of esccutivc; 3. recall the organisation of a Icgislaturc. 4. analyze the furictions of the csecutivc. the lgislature and the judiciary;. 5. explain how independence of judiciary is ensured.	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
			Course-3: Indian Constitution and Central Government	The main objectives of the Indian constitution include sovereignty, socialism, secularism, democracy, and republic. Apart from this, justice, liberty, and fraternity are also a part of the objectives of the Indian constitution.	1. Understand the meaning and importance of Constitution 2. Explain about making of Indian Constitution - contribution of Constituent assembly on it. 3. Describe the Salient (Outstanding) features of Indian Constitution. 4. Describe the importance of Preamble of the Indian Constitution and its significance.
			Course-4:Indian Government & Politics	The main objective of Indian Polity is to create a set of disciplines that can include a broad range of subjects relating to political framework and leading administration. For example, it may help to highlight the objective meaning of constitution development, directive principles, fundamental rights, citizenship, and many more. Objective research includes executive members such as the president, the prime minister, and the council of ministers, the judiciary system, state governments, and the authorised bodies that are actively involved. It may have a strong influence on the rules and regulations of the country and hence it helps to build and develop a nation.	1. The learner develops the ability to use critical, analytical, and reflective hinking and reasoning. 2. The learner acquires the ability to reflect on social and ethical responsibilities in his/her professional life. 3. The learner gains experience and confidence in the dissemination of project/research outputs.

			Sem-V - Paper-V :Indian Political thought	To evolve a shared vision of national development priorities, sectors and strategies with the active involvement of States.	1. The learner acquires the competence to work responsibly and creatively as an individual or as a member or leader of a team and in multidisciplinary environments..2. The learner becomes able to assess the impact of the economic, social, and political environment from a global, national and regional level. 3. The learner gets to know how to access written and visual, primary and secondary sources of information, interpret concepts and data from a variety of sources in developing disciplinary and interdisciplinary analysis.
			Sem-V - Paper-VI :Western Political thought	A political philosopher aims at suggesting how to underline the basic principles regarding the justification of a particular form of state.	1. Knowledge of Political Realm: Understand the fundamentals theories, political process and issues of national and international politics, including the political process in India. Effectively apply comparative, critical and analytical skills in reading and writing to address significant issues of the political world. 2. Interdisciplinary Perspective: Understand interdisciplinary perspective to the study of social sciences. Evaluate diverse point of views embedded within various frameworks which may include temporal, cultural, linguistic, socio-political or technological contexts.
			Sem-VI - Paper-VII :Principles of Public Adminidtration	Leads and manage organizations • Understand and contribute to public policy • Critically analyze policies, programs, problems, and issues and make pertinent recommendations • Communicate effectively in oral and written discourse with a diverse and changing workforce and public	1. Develop a sound theoretical and practical understanding of the basic concepts and theories of organization and functioning of public administration in diverse field. 2. Prepare and inculcate the requisite skills and aptitude imperative for to be a good public administrator. 3. Promote and prepare students for greater commitment to higher ethical standards ofpublic administration.
B.COM	GENERAL	2101&2201	**COMMERCE**		
			Course1A: Fundamentals of Accounting	The main objective of accounting is to keep a systematic record of financial transactions which helps the users to understand the day to day transactions in a systematic manner so as to gain knowledge about overall business.	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.
			Course 1B: Business Organization and Management	Management attempts to accomplish specific objectives which are the solicited outcome of any action. They must be received from the fundamental view of the business. In any business, there are several objectives and the administration has to complete all objectives in an efficient and effective manner. Objectives can be categorised into organisational objectives, social objectives and personal or individual objectives.	1. Understand different forms of business organizations. 2. Describe the Social Responsibility of Business towards the society 3. Articulatenew models of business organizations. 4. Design and plan to register a business firm.
			Course 1C: Business Environment	The business environment helps the business to find opportunities in the market. Change in the market condition, customer behaviour, technology, and other factor, business need to finding new opportunities. Business needs to change to survive in the market. Business needs to identify the problem of the market and solve it to gain the customer.	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. Develop the new ideas for creating good business environment
			Course 2A: Financial Accounting	1. Compliance with Statutory Requirements. 2. Safeguarding of Interest of Various Stakeholders. 3. Helps in the Measurement of Profit and Loss of Business. 4. Presentation of Historical Records. 5. Focus on External Transaction of Business.	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.

			Course 2B: Business Economics	Objectives of business refer to purpose for which business is established. Generally objective of business is to make profit and avoid loss. No doubt profit is driving force in undertaking any business activity but not the only objective of business. Urwick says “earning of profit cannot be the objective of a business any more than eating is the objective of living”. Following are the main objectives of business Economic Objectives of Business Social Objectives of Business Human Objectives of Business National Objectives of Business	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 behaviour 3. Evaluate the factors,such as production and costs affecting firmsbehaviour. 4. Recognize market failure and the role of government in dealing with those failures
			Course 2C:Banking Theory and Practice	1. To acquire knowledge of working of Indian Banking system. 2. The impact of government policy and regulations on the banking industry. 3. Financial statements.	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. Critically examine the current scenario of Indian Banking system.
			Course 3A-Corporate Accounting	he ability to account for a range of advanced financial accounting issues. An understanding of the accounting requirements for a corporate group and familiarity with the theory underlying the methods used to account for inter-company investments. The ability to prepare consolidated accounts for a corporate group.	1. Acquire the knowledge in accounting, system of maintenance of accounts, journal, ledger, bill of exchange, account current, average due date and bank reconciliation statement.2. Familiarise and understand the basic accounting concepts and conventions, preparation of subsidiary books and final accounts, account of Consignment, Joint venture and non-trading concerns
			Course 3B-Business Statistics	1.To develop the students ability to deal with numerical and quantitative issues in business 2. To enable the use of statistical, graphical and algebraic techniques wherever relevant. 3. To have a proper understanding of Statistical applications in Economics and Management	1. Describe and discuss the key terminology, concepts tools and techniques used in business statistical analysis 2. . Critically evaluate the underlying assumptions of analysis tools 3. . Understand and critically discuss the issues surrounding sampling and significance 4. . Discuss critically the uses and limitations of statistical analysis 5. Solve a range of problems using the techniques covered 6. Conduct basic statistical analysis of data
			Course 3C-Banking Theory and Practice	1. To acquire knowledge about banking laws in India as it is must for management students. 2. To have conceptual clarity about the process of banking,product and stakeholders with reference to particular acts passed in India. 3. A deep study about the remittance process ,virtual banking,digital banking with various laws applicable in India.	The main learning outcome of this course is to provide the student an understanding of legal and regulatory aspects of banking.
			Course 4A-Business Laws	1. Knowledge: Basic and broad knowledge in business laws in management. 2. Ability to apply concepts, principles and theories to understand simple business laws. 3. To help the students to understand the concept of Consent, Free Consent, Classification of contracts, Modes of Discharge of Contracts, Breach of Contract and Remedies against the breach	1. Students would learn the basics of Laws governing commercial contracts and nuances of competency to contract, rules of Consideration and Objects of Contracts with case laws and illustrations 2. Students would learn the concept of Consent & Free Consent, different types of Agreements and Contracts, different Modes of discharge of Contracts, Breach of contracts and remedies for the aggrieved parties.

			Course 4B-Accounting for Service Organizations	1. To develop the knowledge of business and management principles. 2. To learn decision thinking and problem skills.	1. Describe, explain, and integrate fundamental concepts underlying accounting, finance, management, marketing, and economics 2. Use information to support business processes and practices, such as problem analysis and decision making 3. Apply quantitative skills to help analyze and solve business problems and to take advantage of business opportunities 4. Apply oral and written communication skills 5. Describe and explain the ethical and social responsibilities of accountants in ensuring the integrity of financial information 6. Develop an understanding of internal control issues and the effects of the regulatory environment on financial reporting 7. Apply knowledge of generally accepted accounting principles (GAAP) and managerial accounting theories to business organizations, state and local governments, and nonprofit organizations 8. Apply knowledge of federal tax laws and procedures to individuals and businesses
			Course 4C-Income Tax	1. To enable the students to identify the basic concepts, definitions and terms related to Income Tax. Students would identify the technical terms related to Income Tax. 2. To enable the students to determine the residential status of an individual and scope of total income.	1. Build a strong foundation in accounting, management and business subjects 2. Seek variety of career options in accounting, management and business related fields 3. Equip with skills and knowledge to excel in their future careers 4.Develop critical thinking skills in students 5. Enter master programmes like M.Com, MBA and pursue professional programmes like C.A, CMA, C.S, etc. 6. Develop entrepreneurial skills
			Sem-V-Paper-COM135 - Cost Accounting	1.Recognize and apply appropriate theories, principles and concepts relevant to cost accounting. 2. Exercise appropriate judgment in selecting and presenting information using various methods relevant to cost accounting.	1.Students would classify costs and would be able to prepare cost sheet for manufacturing and trading concerns. 2. Students would be able to prepare contract account and understand various aspects of contract costing including treatment of profit on incomplete contracts .3. Students would be able to prepare process accounts and statement of joint products and by-products. They would also recall and discuss various concepts related to Process Costing.

			Sem-V-Paper-COM145 - Goods & Service Tax Fundamentals	It helps create a common market in India with a uniform taxation system and curb tax evasion in the country. The laws for GST are far more stringent compared to the erstwhile indirect tax laws. The aim is to have a nationwide surveillance system under GST, making it easier to catch defaulters and tax evaders. 2.It removes the cascading effect of the indirect taxes on a single transaction. It also allows the setting off for prior taxes that are related to the same transactions in the form of the input tax credit. Under GST, the tax is applicable only on the net value added during each stage of the supply chain. 3.The government aims to reduce the need for multiple documentation under the previous taxation system by introducing a consolidated tax like GST. The idea is to help companies with an uncomplicated tax filing procedure that will improve their efficiency and cut down the overall costs associated with business processes. 4.It helps to subsume most indirect taxes into a single taxation system that reduces the burden of compliance for taxpayers and eases the government's tax administration process. The main aim of this taxation system is to simplify the entire process of paying taxes and simplify compliance. Compared to the erstwhile indirect taxes, almost the whole GST process, including registration, returns filing, refunds and e-way bill generation, has shifted to the online mode.	GST is vital for the functioning of the Indian economy. The government aims to simplify the entire taxation procedure and bring more businesses under the taxation system. It will help them generate significant revenue from these taxes, which they can use for the developmental activities within the country.
			Sem-V-Paper-COM155 - Commercial Geography	1.To identify the early commercial activities in the world reflecting different occupations in various environments. 2. To note, shift and change from primitive activities, and to understand the different stages of agricultural development. 3. To comprehend the importance of manufacturing industries and handi-crafts in the world as commercial activities. 4 Growth of population, its trends and distribution	1. Make a relation among commercial, economic and commercial geography of commerce, economics and commercial geography; 2. Explain the scope of study of commercial geography; 3 Describe the value of study of commercial geography, i.e. educational and practical value;
			Sem-V-Paper-COM165 - Rural & Farm Credit	This course is designed to provide basic ideas about financial management, financial markets, criteria of judging investment decisions and rural credit system	1. Rural Development: Concept, Objectives and Indicators 2. Rural Development Strategies 3. Theories of Rural Development 4. Infrastructural Development: An Overview 5. Rural Development Experiences in India – A Retrospective 6. Rural Development Experiences in South East Asia
			Sem-V-Paper-COM175 - Central Banking	The main objective of a central bank is to ensure financial stability. Depending on the country, central banks might have other objectives such as controlling inflation, unemployment, interest rates, or exchange rates. However, all these objectives are in line with the main objective of ensuring financial stability.	This course studies the purpose and the functions of central banks and monetary policies and how they have evolved over time. Students are introduced to the tools of monetary policy and to the rules that central banks follow, with special attention to inflation targets. At the end of the course students know the effects of the main policy tools and understand how central banks affect the financial system and the economy more generally and the role they have played in the recent financial crisis.
			Sem-VI-Paper-COM185-Banking Rural Credit-Project	1.To outline key marketing concepts and its application to different markets 2. To identify factors and processes essential for designing marketing strategy 3. To analyze and examine the implementation of marketing concepts and strategy to firms	1. Critically evaluate the key analytical frameworks and tools used in marketing. 2. Apply key marketing theories, frameworks and tools to solve Marketing problems. 3. Utilise information of a firm's external and internal marketing environment to identify and prioritise appropriate marketing strategies.

			Sem-VI-Paper-COM196 - Marketing	1.Exhibit and be able to discuss understanding of ethics and social responsibility. 2.Apply Critical Thinking Skills by solving problems requiring quantitative and/or qualitative analysis. 3.Apply and demonstrate the accounting knowledge and skills in Auditing	Program learning outcomes define the knowledge, skills, and abilities students are expected to demonstrate upon completion of an academic program. These learning outcomes are regularly assessed to determine student learning and to evaluate overall program effectiveness
			Sem-VI-Paper-COM206 - Auditing	1. To introduce the concept of auditing and to enable students to understand its various aspects. 2.To enable students to understand the importance of audit planning and documentation and procedures involved in audit. 3.To enable students to assess the audit techniques and the concepts of internal control and internal checks.	1. Students would outline the basic objective of Auditing, the concepts of errors and frauds, principles of audit and different types of audit. 2. Students would construct the factors involved preparation of Audit plan and Audit.They would also understand the and importance of Audit working papers. 3.Students would evaluate the importance of assessment of internal control and internal checks. Also, they would learn about Test check and Audit sampling as audit techniques.
			Sem-VI-Paper-COM216 - Management Accounting	The objective of the course is to enable students to acquire sound Knowledge of concepts, methods and techniques of management accounting and to make the students develop competence with their usage in managerial decision making and control.	1. critically analyse and provide recommendations to improve the operations of organisations through the application of management accounting techniques; 2.demonstrate mastery of costing systems, cost management systems, budgeting systems and performance measurement systems 3.demonstrate the need for a balance between financial and non-financial information in decision making, control and performance evaluation applications of management accounting; 4.evaluate the costs and benefits of different conventional and contemporary costing systems; 5.learn independently and to demonstrate high level personal autonomy and accountability;
			Sem-VI-Paper-COM226 - Financial Services	Enable the students to understand the practical applications of statistical techniques. Develop the skills to understand the relationship among different variables. Develop the skills to calculate simple and Compound Interest. Understanding the relevance of the concept of inflation and cost of living.	The basic objective of the course is to provide to the students specializing in the MBA (Financial Services), the concepts and basics of the various financial services which are in a nascent and developing stage in our country. The course provides a complete package of finance and financial services related subjects so that the students are well equipped with the functional aspects of the various types of financial products and services available in our country.
			Sem-VI-Paper-COM236 - Management of Financial Services	Enable the students to understand the practical applications of statistical techniques. Develop the skills to understand the relationship among different variables. Develop the skills to calculate simple and Compound Interest. Understanding the relevance of the concept of inflation and cost of living.	1.Describe the dimensions of performance and risk relevant to financial services companies. 2. Calculate contemporary financial measures of performance and risk. 3. Describe contemporary managerial risk management oversight processes. 4. Explain how the financial services component industries (insurance, banking, securities, real estate and financial planning) interact.
			Sem-VI-Paper-COM246 -Banking Financial Services-Project		
B.COM	COMPUTERS	2301	**COMMERCE**		
			Course1A: Fundamentals of Accounting	The main objective of accounting is to keep a systematic record of financial transactions which helps the users to understand the day to day transactions in a systematic manner so as to gain knowledge about overall business.	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.

			Course 1B: Business Organization and Management	Management attempts to accomplish specific objectives which are the solicited outcome of any action. They must be received from the fundamental view of the business. In any business, there are several objectives and the administration has to complete all objectives in an efficient and effective manner. Objectives can be categorised into organisational objectives, social objectives and personal or individual objectives.	1. Understand different forms of business organizations. 2. Describe the Social Responsibility of Business towards the society 3. Articulatenew models of business organizations. 4. Design and plan to register a business firm.
			Course 1C:Information Technology	Information Technology will allow you to streamline work processes and improve communication within the company, thereby helping your employees save time and making your operations much more efficient	1. Describe the fundamental hardware components that make up a computer's hardware and the role of each of these components 2.Use technology ethically, safely, securely, and legally 3. understand the difference between an operating system and an application 4. Use systems development, word-processing, spreadsheet, and presentation software to solve basic information systems problems
			Course 2A: Financial Accounting	1. Compliance with Statutory Requirements. 2. Safeguarding of Interest of Various Stakeholders. 3. Helps in the Measurement of Profit and Loss of Business. 4. Presentation of Historical Records. 5. Focus on External Transaction of Business.	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
			Course 2B: Business Economics	Objectives of business refer to purpose for which business is established. Generally objective of business is to make profit and avoid loss. No doubt profit is driving force in undertaking any business activity but not the only objective of business. Urwick says "earning of profit cannot be the objective of a business any more than eating is the objective of living". Following are the main objectives of business Economic Objectives of Business Social Objectives of Business Human Objectives of Business National Objectives of Business	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 behaviour 3. Evaluate the factors,such as production and costs affecting firmsbehaviour. 4. Recognize market failure and the role of government in dealing with those failures
			Course 2C: E- Commerce & Web Designing	1. Increase relevant traffic. 2. Grow your email list. 3. Give clients a personalized experience	1. Understand the foundations and importance of E-commerce 2. Describe the infrastructure for E-commerce 3.Discuss legal issues and privacy in E-Commerce 4. Recognize and discuss global E-commerce issues
			Course 3A-Corporate Accounting	he ability to account for a range of advanced financial accounting issues. An understanding of the accounting requirements for a corporate group and familiarity with the theory underlying the methods used to account for inter-company investments. The ability to prepare consolidated accounts for a corporate group.	1. Acquire the knowledge in accounting, system of maintenance of accounts, journal, ledger, bill of exchange, account current, average due date and bank reconciliation statement.2. Familiarise and understand the basic accounting concepts and conventions, preparation of subsidiary books and final accounts, account of Consignment, Joint venture and non-trading concerns
			Course 3B-Business Statistics	1.To develop the students ability to deal with numerical and quantitative issues in business 2. To enable the use of statistical, graphical and algebraic techniques wherever relevant. 3. To have a proper understanding of Statistical applications in Economics and Management.	1. Describe and discuss the key terminology, concepts tools and techniques used in business statistical analysis 2. . Critically evaluate the underlying assumptions of analysis tools 3. . Understand and critically discuss the issues surrounding sampling and significance 4. . Discuss critically the uses and limitations of statistical analysis 5. Solve a range of problems using the techniques covered 6. Conduct basic statistical analysis of data

			Course 3C-Office Automation Tools	Greater efficiency, • Better service, • Better accuracy, • Demanding for timeliness, • Facility in control, • Standardization of office routine, • Relieves of monotony, • Prevention of fraud, • Better information retrieval, • Lower operating cost, • Reduction in paper work, • Improved communication environment	1. to perform documentation 2. to perform accounting operations •3.to perform presentation skills
			Course 4A-Business Laws	1. Knowledge: Basic and broad knowledge in business laws in management. 2. Ability to apply concepts, principles and theories to understand simple business laws. 3. To help the students to understand the concept of Consent, Free Consent, Classification of contracts, Modes of Discharge of Contracts, Breach of Contract and Remedies against the breach	1. Students would learn the basics of Laws governing commercial contracts and nuances of competency to contract, rules of Consideration and Objects of Contracts with case laws and illustrations 2. Students would learn the concept of Consent & Free Consent, different types of Agreements and Contracts, different Modes of discharge of Contracts, Breach of contracts and remedies for the aggrieved parties.
			Course 4B-Business Analytics	1. Provide solutions, assessments and validation to a broad range of situations by eliciting, planning, monitoring and analyzing enterprise requirements. 2. Work as a professional maintaining high standards of practice, making ethical/legal judgments and decisions, and sustaining professional standing through a commitment to life-long learning. 3. Demonstrate effective use of written, verbal, and non-verbal communication, employing relevant knowledge, skills, and judgment in a business setting. 4. Document, manage, research and communicate business requirements from the initial stakeholder meeting, to the final solution assessment and validation phase.	Identify and describe complex business problems in terms of analytical models. Apply appropriate analytical methods to find solutions to business problems that achieve stated objectives. Translate results of business analytic projects into effective courses of action. Demonstrate ethical decision-making in structured or unstructured and ambiguous situations. Communicate technical information to both technical and non-technical audiences in speech, in writing, and graphically. Exhibit effective collaboration and leadership skills.
			Course 4C-Banking Theory & Practice	1. To acquire knowledge about banking laws in India as it is must for management students. 2. To have conceptual clarity about the process of banking,product and stakeholders with reference to particular acts passed in India. 3. A deep study about the remittance process ,virtual banking,digital banking with various laws applicable in India.	The main learning outcome of this course is to provide the student an understanding of legal and regulatory aspects of banking.
			Sem-V-Paper-COM135 - Cost Accounting	1.Recognize and apply appropriate theories, principles and concepts relevant to cost accounting. 2. Exercise appropriate judgment in selecting and presenting information using various methods relevant to cost accounting.	1.Students would classify costs and would be able to prepare cost sheet for manufacturing and trading concerns. 2. Students would be able to prepare contract account and understand various aspects of contract costing including treatment of profit on incomplete contracts .3. Students would be able to prepare process accounts and statement of joint products and by-products. They would also recall and discuss various concepts related to Process Costing.

			Sem-V-Paper-COM145 - Taxation	1.To enable the students to identify the basic concepts, definitions and terms related to Income Tax. Students would identify the technical terms related to Income Tax. 2.To enable the students to determine the residential status of an individual and scope of total income.	1. Understand the application of business Knowledge in both theoretical and practical aspects. 2. Determine the procedures and schedules to be followed on preparing financial statements of Companies. 3. - File Income tax return and compute the tax liability of individuals 4. Develop proficiency in the management of an organisation 5. Attain skills in conducting business transactions online 6. Learn the basic skills for the effective utilisation of funds 7. Follow the ethics pertaining to business transactions
			Sem-V-COM155-Commercial Geography	The objective of this course is to introduce Commercial Geography, Conservation of Resources & sustainable economic development, Classification of Economic activities and Globalization & Indian Economy	The student should be knowing the bases of commercial and marketing activities related to the earth
			Sem-V-Paper-COM165 - Database Management Systems	This course provides an introduction to relational database systems. The topics covered include the relational model, SQL, transactions, database design, and concepts and algorithms for building database management systems.	1. have a broad understanding of database concepts and database management system software 2.have a high-level understanding of major DBMS components and their function be able to model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model. 3.be able to write SQL commands to create tables and indexes, insert/update/delete data, and query data in a relational DBMS. 4.be able to program a data-intensive application using DBMS APIs.
			Sem-V-Paper-COM175 - Web Technology	1 .Understand the principles of creating an effective web page, including an in-depth consideration of information architecture. 2. Become familiar with graphic design principles that relate to web design and learn how to implement theories into practice. 3. Develop skills in analyzing the usability of a web site. 4. Understand how to plan and conduct user research related to web usability. 5. Learn the language of the web: HTML and CSS. 6. Learn CSS grid layout and flexbox. 7. Learn techniques of responsive web design, including media queries.	The student will be able to: • Analyze a web page and identify its elements and attributes. Create web pages using XHTML and Cascading Style Sheets. Build dynamic web pages using JavaScript (Client side programming). Create XML documents and Schems.
			Sem-V-Paper-COM185 - C- Language	1. To develop the competence of children to understand what they hear. ... 2. To develop the ability to read with comprehension. 3. To develop effortless expression. ...	1. To develop the skill of coherent writing. ... 2. To develop control over different registers. ... 3. To develop children's creativity.
			Sem-VI-Paper-COM196 - Marketing	1.Exhibit and be able to discuss understanding of ethics and social responsibility. 2.Apply Critical Thinking Skills by solving problems requiring quantitative and/or qualitative analysis. 3.Apply and demonstrate the accounting knowledge and skills in Auditing	Program learning outcomes define the knowledge, skills, and abilities students are expected to demonstrate upon completion of an academic program. These learning outcomes are regularly assessed to determine student learning and to evaluate overall program effectiveness
			Sem-VI-Paper-COM206 - Auditing	1. To introduce the concept of auditing and to enable students to understand its various aspects. 2.To enable students to understand the importance of audit planning and documentation and procedures involved in audit. 3.To enable students to assess the audit techniques and the concepts of internal control and internal checks.	1. Students would outline the basic objective of Auditing, the concepts of errors and frauds, principles of audit and different types of audit. 2. Students would construct the factors involved preparation of Audit plan and Audit.They would also understand the and importance of Audit working papers. 3.Students would evaluate the importance of assessment of internal control and internal checks. Also, they would learn about Test check and Audit sampling as audit techniques.

			Sem-VI-Paper-COM216 - Management Accounting	The objective of the course is to enable students to acquire sound Knowledge of concepts, methods and techniques of management accounting and to make the students develop competence with their usage in managerial decision making and control.	1. critically analyse and provide recommendations to improve the operations of organisations through the application of management accounting techniques; 2.demonstrate mastery of costing systems, cost management systems, budgeting systems and performance measurement systems 3.demonstrate the need for a balance between financial and non-financial information in decision making, control and performance evaluation applications of management accounting; 4.evaluate the costs and benefits of different conventional and contemporary costing systems; 5.learn independently and to demonstrate high level personal autonomy and accountability;
			Sem-VI-Paper-COM226 - Tally	This course is designed to impart knowledge regarding concepts of Financial Accounting Tally is an accounting package which is used for learning to maintain accounts. As this course is useful for Commerce students to get placements in different offices as well as companies in Accounts departments.	1.To understand business and its role in society 2.: To have an understanding of Business ethics and CSR 3. To comprehend the business environment and various dimensions 4.: To familiarise Technology integration in business 5: To introduce the importance and fundamentals of business research
			Sem-VI-Paper-COM236 - E-Commerce	This course provides an introduction to information systems for business and management. It is designed to familiarize students with organizational and managerial foundations of systems, the technical foundation for understanding information systems	1. Analyze the impact of E-commerce on business models and strategy. 2. Describe the major types of E-commerce. 3. Explain the process that should be followed in building an E-commerce presence. 4. Identify the key security threats in the E-commerce environment
			Sem-VI-Paper-COM246 -PHP & My SQL	The objective of this course is to provide the necessary knowledge to design and develop dynamic, database-driven web applications using PHP version 5. Students will learn how to connect to any ODBC-compliant database, and perform hands on practice with a MySQL database to create database-driven HTML forms and reports etc. Students also learn how to configure PHP and Apache Web Server. Comprehensive lab exercises provide facilitated hands on practice crucial to develop competence web sites.	1. List the major elements of the PHP & MySQL work and explain why PHP is good for web development. 2. Learn how to take a static website and turn it into a dynamic website run from a database using PHP and MySQL.
B.S.C	B.Z.C	3101	**BOTANY**		
			Course - 1- Fundamentals of Microbes and Non-vascular Plants	1. Students will be able to identify, compare and distinguish various groups of microbes and primitive plants based on their characteristics. 2. Students will be able to explain the evolution of trachaeophytes and also distribution of plants on globe. 3. Students will be able to discuss on internal structure, embryology and ecological adaptations of plants, and want of conserving Biodiversity.	1. Explain origin of life on the earth. 2. Illustrate diversity among the viruses and prokaryotic organisms and can categorize them. 3. Classify fungi, lichens, algaeand bryophytes based on theirstructure, reproduction and life cycles. 4. Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi.
			Course – 2 - Basics of Vascular plants and Phytogeography	1. Students will be able to identify, compare and distinguish various groups of microbes and primitive plants based on their characteristics. 2. Students will be able to explain the evolution of trachaeophytes and also distribution of plants on globe. 3. Students will be able to discuss on internal structure, embryology and ecological adaptations of plants, and want of conserving Biodiversity.	1. Justifyevolutionary trends in tracheophytes to adapt for land habitat. 2. Critically understand various taxonomical aids for identification of Angiosperms. 3. Analyze the morphology of the most common Angiospermplants of their ocalitiesand recognize their families. 4.Evaluate the ecological, ethnic and economic value of different tracheophytes and summarize their goods and services for human welfare.

			Course –3- Plant Anatomy & Embryology	1.This course aims to impart an insight into the internal structure and reproduction of the most evolved group of plants, the Angiosperm. 2. Identifies role of anatomy in solving taxonomic and phylogenetic problems. 3. Understand the structural adaptations in plants growing in different environment. 4. Understand the life cycle pattern of Angiosperms. 5. Understand the morphology and development of reproductive parts. 6. Get an insight in to the fruit and seed development.	1. To gain knowledge about microbial diversity. 2. To have the ability to utilize the concept of mushroom cultivation. 3. To understand the phylogeny of plants. 4. To know about various plant diseases and their control measures. 5. To understand life cycles of different algal species. 6. To explore economic importance of algae& fungi.
			Course –4-Cell Biology & Genetics	1.Students will understand the structures and purposes of basic components of prokaryotic and eukaryotic cells, especially macromolecules, membranes, and organelles 2. Students will understand how these cellular components are used to generate and utilize energy in cells 3. Students will understand the cellular components underlying mitotic cell division. 4. Students will apply their knowledge of cell biology to selected examples of changes orlosses in cell function. These can include responses to environmental or physiological changes, or alterations of cell function brought about by mutation.	Exhibit a knowledge base in genetics, cell and molecular biology, and anatomy and physiology. Demonstrate the knowledge of common and advanced laboratory practices in cell and molecular biology.
			Sem-V-Botany-V-Cell Biology,Genetics, Plant Breeding	1.Students will understand the structures and purposes of basic components of prokaryotic and eukaryotic cells, especially macromolecules, membranes, and organelles 2. Students will understand how these cellular components are used to generate and utilize energy in cells 3. Students will understand the cellular components underlying mitotic cell division. 4. Students will apply their knowledge of cell biology to selected examples of changes orlosses in cell function. These can include responses to environmental or physiological changes, or alterations of cell function brought about by mutation.	Exhibit a knowledge base in genetics, cell and molecular biology, and anatomy and physiology. Demonstrate the knowledge of common and advanced laboratory practices in cell and molecular biology.
			Sem-V-Botany-VI-Plant Ecology, Phytogeography	1. This course will provide to understand the major factors influencing the geographic distribution of species. 2. Be able to understand the ecological context in which a particular species may have evolved, or a specific ecological process takes place.	1. Have increased capacity to think critically; ability to design and execute an experiment; confidence and ability in communicating ideas. 2. Serve as a lasting and practical basis for a career, for example, in research whether industry or academia - as well as teaching, media, law, commerce, government or management. 3. Pursue higher studies to get employability opportunity.
			Sem-VI-Botany-VII-Nursery,Gardening and Floriculture		
			ZOOLOGY		

			PAPER – I - ANIMAL DIVERSITY – BIOLOGY OF NONCHORDATES	1. To understand the taxonomic position of protozoa to helminthes. 2. To understand the general characteristics of animals belonging to protozoa to hemichordata. 3. To understand the structural organization of animals phylum from protozoa to hemichordata. 4. To understand the origin and evolutionary relationship of different phyla from protozoa to hemichordata.	1. Describe general taxonomic rules on animal classification 2. Classify Protozoa to Coelenterata with taxonomic keys 3. Classify Phylum Platy hemninthes to Annelida phylum using examples from parasitic adaptation and vermin composting 4. Describe Phylum Arthropoda to Mollusca using examples and importance of insect
			PAPER – II - ANIMAL DIVERSITY – BIOLOGY OF CHORDATES	1. To understand the animal kingdom . 2. To understand the taxonomic position of Protochordata to Mammalia. 3. To understand the general characteristics of animals belonging to Fishes to Reptilians. 4. To understand the body organization of Chordata. 5. To understand the taxonomic position of Protherian mammals	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
			PAPER – III - Biology of Chordates & Evolution	1. To understand the animal kingdom . 2. To understand the taxonomic position of protozoa to helminthes. 3. To understand the general characteristics of animals belonging to protozoa to helminthes. 4. To understand the body organization of phylum from protozoa to helminthes. 5. To understand the origin and evolutionary relationship of different phylum from protozoa to helminthes	1.Student should be able to describe unique characters of protozoa, porifera, coelenterate and helminthes. 2. Student should be able to recognize life functions of protozoa, porifera, coelenterate and helminthes. 3. To recognise the ecological role of phylum protozoa, porifera, coelenterate and helminthes. 4. To recognise the diversity from protozoa, porifera, coelenterate and helminthes.
			PAPER – IV - Developmental Biology	Be able to analyze scientific data and draw conclusions from it. Be able to identify important unsolved problems in cell and developmental biology. Be able to articulate a hypothesis of an unsolved problem and design a research plan to test the hypothesis. Be able to perform controlled experiments to test hypotheses.	1. Have mastered the foundational knowledge that defines the fields of cell and developmental biology. 2. Be able to write clearly and effectively about cell and developmental biology at the graduate level as well as in layperson terms. 3. Be able to explain cell and developmental biology orally to professional scientists, students of the discipline, and to a lay audience. 4. Be prepared to teach foundational cell and developmental biology at the college level. 5. Be able to analyze scientific data and draw conclusions from it.
			Sem-V-Zoology-V-Animal Biotechnology	1. Transgenic animals. 2. Steps in the production of transgenicanimals. 3. Applications of transgenic animals. 4. Biopharming. 5. Benefits and risks of biopharms.	Be able to describe the structure of animal genes and genomes. Be able to describe how genes are expressed and what regulatory mechanisms contribute to control of gene expression. Be able to describe basic principles and techniques in genetic manipulation and genetic engineering.
			Sem-V-Zoology-VI-Animal Husbandry	To satisfy the need for food of the growing population. To do proper management of the domestic animals. To develop high yielding breeds of animals. To increase the standard of living of farmers	Students will able to apply concepts of breeding, physiology, nutrition, herd-health, economics and management into practical and profitable animal production
			Sem-VI-Zoology-VII-Immunology	1. The students will be able to identify the cellular and molecular basis of immune responsiveness. 2. The students will be able to describe the roles of the immune system in both maintaining health and contributing to disease.	demonstrate the basic knowledge of immunological processes at a cellular and molecular level. define central immunological principles and concepts. outline, compare and contrast the key mechanisms and cellular players of innate and adaptive immunity and how they relate.
			Sem-VI-Zoology-C1-Principles of Aquaculture	1. To understand the techniques involved in aquaculture practices. 2. To get a detailed information about aquaculture. 3. To provide a basic idea about the importance of live feed in culture systems	1. The learners will be aware of all the techniques involved in aquaculture. 2. At the end of the course, student can able to gain the knowledge on the aquaculture practices

			Sem-VI-Zoology-C2-Aquaculture Management	Graduates who have knowledge and skills need in tropical aquaculture production and development and are able to use them to make decision and to overcome challenges arise at various types of aquaculture. Skills and knowledge acquired including cultivate commercial commodity of aquaculture, formulate artificial feed, culture natural feed, disease diagnose and disease control, fish health management, develop sustainable aquaculture system and technology, seed production, water quality management, aquaculture spatial planning, aquaculture business and entrepreneurship.	1. Graduates who are capable of applying logical, critical, systematic, and innovative thinking in the development and implementation based on science and technology aquaculture. 2. Graduates who are responsible, discipline, comply to the law as a citizen, internalize norms and academic ethics in doing their profession and advancing their career 3. Graduates who internalize spirit of self-reliance, independence, resilience, entrepreneurship, teamwork, and have social sensitivity in practicing and solving problems in aquaculture
			Sem-VI-Zoology-C3-Post Harvest Technology	This course is an advanced course wherein, various aspects of the “farm to table” theme will be covered. The course is designed to give students an understanding on various changes occurring in fruits and vegetables during the pre-and post-harvest stages. The students will learn more on the physiology, biochemistry and on various technologies involved relevant to shelf life extension.	1. Explain the principles of post-harvest technology. 2. Illustrate the physiological and biochemical changes occurring during various stages of fruits and vegetables development and production. 3. Indicate the importance and the significance of proper post-harvest handling to maintain the quality of fruits and vegetables. 4. Analyse various aspects of quality control and evaluation.
			CHEMISTRY		
			Course I - Inorganic & Physical Chemistry	Acquisition of skills in General Chemistry and Inorganic Chemistry. To develop the ability to correlate the chemical and physical properties of elements and their compounds with their positions in the periodic table. To establish the link between theory and laboratory practice by conducting laboratory experiments. To acquire expertise in chemistry laboratory in handling of reagents and solvents as well as in analytical techniques.	1. Understand the basic concepts of p-block elements 2. Explainthe difference between solid, liquid and gases in terms of intermolecularinteractions. 3. Apply the concepts of gas equations, pH and electrolytes while studying other chemistry courses
			Course II - Organic & General Chemistry	Predict and explain Patterns and Properties. Predict and explain patterns in shape, structure, bonding, hybridization, formal charge, stability, acidity, basicity, solubility, and reactivity for hydrocarbons, halocarbons, alkenes, dienes, and arenes, by understanding and applying concepts of organic chemical structure and bonding and stability	1. Understand and explain the differential behavior of organic compounds based on fundamental concepts learnt 2. Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved. 3. Correlate and describe the stereo chemical properties of organic compounds and reactions
			Course III-Inorganic Chemistry -II	1. To understand the shapes of different orbitals. 2.To understand different principles for filling electrons. 3. To understand how to draw energy diagrams. 4. To understand how to calculate bond order	Acquisition of skills in General Chemistry and Inorganic Chemistry. To develop the ability to correlate the chemical and physical properties of elements and their compounds with their positions in the periodic table. To establish the link between theory and laboratory practice by conducting laboratory experiments. To acquire expertise in chemistry laboratory in handling of reagents and solvents as well as in analytical techniques.
			Course IV: Organic and Physical Chemistry	1. To understand the shapes of different orbitals. 2.To understand different principles for filling electrons. 3. To understand how to draw energy diagrams. 4. To understand how to calculate bond order. 5. To understand how to calculate lattice energy through Born Haber Cycle .6. To understand the shapes of different orbitals. 7..To understand different principles for filling electrons. 8. To understand how to draw energy diagrams. 9. To understand how to calculate bond order	1. Able to write electronic configuration of given atomic number 2. Able to tell the name of orbitals by recognizing shapes of orbitals 3. Able to calculate bond order of different molecules. 4. Able to draw MO digrams of different molecules Acquisition of skills in General Chemistry and Inorganic Chemistry. To develop the ability to correlate the chemical and physical properties of elements and their compounds with their positions in the periodic table. To establish the link between theory and laboratory practice by conducting laboratory experiments. To acquire expertise in chemistry laboratory in handling of reagents and solvents as well as in analytical techniques.

			Sem V- Paper-V-Inorganic, Organic and Physical Chemistry	1. To understand the shapes of different orbitals. 2.To understand different principles for filling electrons. 3. To understand how to draw energy diagrams. 4. To understand how to calculate bond order. 5. To understand how to calculate lattice energy through Born Haber Cycle .6. To understand the shapes of different orbitals. 7..To understand different principles for filling electrons. 8. To understand how to draw energy diagrams. 9. To understand how to calculate bond order	1. Able to write electronic configuration of given atomic number 2. Able to tell the name of orbitals by recognizing shapes of orbitals 3. Able to calculate bond order of different molecules. 4. Able to draw MO digrams of different molecules Acquisition of skills in General Chemistry and Inorganic Chemistry. To develop the ability to correlate the chemical and physical properties of elements and their compounds with their positions in the periodic table. To establish the link between theory and laboratory practice by conducting laboratory experiments. To acquire expertise in chemistry laboratory in handling of reagents and solvents as well as in analytical techniques.
			Sem V- Paper-VI-Inorganic, Organic and Physical Chemistry	1. To understand the shapes of different orbitals. 2.To understand different principles for filling electrons. 3. To understand how to draw energy diagrams. 4. To understand how to calculate bond order. 5. To understand how to calculate lattice energy through Born Haber Cycle .6. To understand the shapes of different orbitals. 7..To understand different principles for filling electrons. 8. To understand how to draw energy diagrams. 9. To understand how to calculate bond order	1. Able to write electronic configuration of given atomic number 2. Able to tell the name of orbitals by recognizing shapes of orbitals 3. Able to calculate bond order of different molecules. 4. Able to draw MO digrams of different molecules Acquisition of skills in General Chemistry and Inorganic Chemistry. To develop the ability to correlate the chemical and physical properties of elements and their compounds with their positions in the periodic table. To establish the link between theory and laboratory practice by conducting laboratory experiments. To acquire expertise in chemistry laboratory in handling of reagents and solvents as well as in analytical techniques.
			Sem VI- Paper VII-Analyticsl Methods in Chemistry	1. to develop an understanding of the range and uses of analytical methods in chemistry 2.. to develop an understanding of the broad role of the chemist in measurement and problem solving for analytical tasks. 3. to provide an understanding of chemical methods employed for elemental and compound analysis.	Knowledge of the concepts through theoretical understanding of the principles of chemistry. Topics like thermodynamics, kinetics, stereochemistry, quantum, symmetry fromanalytical, organic, inorganic and physical chemistry
BSC	MPC (TM & EM)	3201 & 3501	**MATHEMATICS**		
			COURSE-I DIFFERENTIAL EQUATIONS	This course is intended to expose you to the basic ideas of Differential Equations combined with some ideas from Linear Algebra. To be successful, a student must be able at the end of the class to solve the majority of the problems with no external help.	1. After successful completion of this course, the student will be able to; 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, withconstant coefficients. 5. Understand the concept and apply appropriate methods for solving differential equations
			COURSE-II THREE DIMENSIONAL ANALYTICAL SOLID GEOMETRY	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side ...	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
			PAPER- III -Solid Geometry-I & Analysis-II	Real analysis, this course is designed to provide fundamental concepts of analysis, including classical theory of functions of a real variable, differentiation and integration of real functions, as well as some fundamental topics in general topology and metric space theory.	Completing the course students will acquire basic skills that will be measured considering the following learning outcomes: 1. Students will be able to demonstrate competence with elementary properties of sets by proving identities involving union and intersection and Cartesian Products of sets. 2. Students will be able to demonstrate competence with elementary properties of functions by proving results involving composite functions and inverse functions.

			PAPER - IV- Solid Geometry-II & Group Theory	Group theory is one of the great simplifying and unifying ideas in modern mathematics. It was introduced in order to understand the solutions to polynomial equations and has its full significance, as a mathematical formulation of symmetry, been understood.	After studying this course, you should be able to: 1. explain what is meant by a symmetry of a plane figure. 2. Fnd the composite of two symmetries. 3. Find the inverse of a symmetry. 4. Determine whether a given set and binary operation form a group by checking group axioms. 5. Describe the symmetries of some bounded three-dimensional figures
			Sem-V-PAPER - V- LINEAR ALGEBRA	1. Be able to state the group axioms and to verify whether a given set and binary operation form a group. 2. Define subgroup, identity element, inverse, associativity, order of an element, order of a group, group table, inverse, cyclic group, abelian/commutative group, 3. Compute orders, powers, and inverses in concrete examples.	Upon successful completion of this course, students will: Solve systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion. Carry out matrix operations, including inverses and determinants.
			Sem-V Paper-VI-Numerical Analysis	To provide the numerical methods of solving the non-linear equations, interpolation, differentiation, and integration. To improve the student's skills in numerical methods by using the numerical analysis software and computer facilities.	Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations. Analyse and evaluate the accuracy of common numerical methods.
			SEM-VI - PAPER - VII (MAT076)- MATRIX THEORY	1. Use the method of Gauss-Jordan elimination to find the solutions of systems of simultaneous linear equations 2. Solve a system of linear equations by row-reducing its augmented form 3. Perform the matrix operations of addition, multiplication and transposition and express a system of simultaneous linear equations in matrix form	1. Solve systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion. 2. Carry out matrix operations, including inverses and determinants. 3. Demonstrate understanding of the concepts of vector space and subspace. 4. Demonstrate understanding of linear independence, span, and basis. 5. Determine eigenvalues and eigenvectors and solve eigenvalue problems. 6 Apply principles of matrix algebra to linear transformations. 7. Demonstrate understandingof inner products and associated norms.
			Sem-VI- Cluster-I-Advanced Numerical Analysis	The course aims to provide students with the specialist knowledge in advanced Numerical Analysis. With this overall aim, the course strives to enable students to: Understand analytical, developmental and technical principles that relate to Numerical Linear Algebra, Numerical Methods for solving Differential Equations, and Numerical Optimization, develop the academic abilities required to solve problems and applications in Numerical Analysis and/or Numerical Optimization and critically assess relevant aspects of the industry, and demonstrate an ability to initiate and sustain in-depth research in Numerical Analysis or Numerical Optimization	1. Knowledge and Understanding: During the lecture the student understands the nature and operations of Numerical Analysis, demonstrates familiarity with theories and concepts used in Numerical Analysis, and identifies the steps required to carry out a piece of research on a topic in Numerical Analysis. 2. Intellectual Skills: By the end of the course the student is expected to recognize and apply appropriate theories, principles and concepts relevant to Numerical Analysis, critically assess and evaluate the literature within the field of Numerical Analysis, analyze and interpret information from a variety of sources relevant to Numerical Analysis.
			Sem-VI- Cluster-II-Laplace Transforms	The Laplace transform is used to solve differential equations. It is accepted widely in many fields. We know that the Laplace transform simplifies a given LDE (linear differential equation) to an algebraic equation, which can later be solved using the standard algebraic identities.	After completing this course, students will be able to understand the applications of Laplace transform and Fourier series. The students will be able to solve ordinary differential equations using Laplace transform.
			Sem-VI- Cluster-III - Project Work		
			PHYSICS		

			Course I: MECHANICS, WAVES AND OSCILLATIONS	A valid or inertial reference frame is that in which this tell tale of signature of freedom from forces, that is a state of rest or of uniform rectilinear	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.
			Course-II: WAVE OPTICS	It is used in many areas of science, such as astronomy, engineering, oceanography, physics, and fiber optics. Popular applications of interferometry in industry include the measurement of small displacements, refractive index changes, and surface irregularities.	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.
			Course-III - Heat & Thermodynamics	1. To be able to state the First Law and to define heat, work, thermal efficiency and the difference between various forms of energy. 2. To be able to identify and describe energy exchange processes (in terms of various forms of energy, heat and work) in aerospace systems. 3. To be able to apply ideal cycle analysis to simple heat engine cycles to estimate thermal efficiency and work as a function of pressures and temperatures at various points in the cycle	Restate defination of system, surrounding, closed and open system, extensive and intensive properties. calculate absolute and gage pressure, and absolute temperature. calculate changes in kinetic, potential, enthalpy and internal energy.
			Course-IV-Optics	o understand the behavior of light rays travelling in free space and incident on reflective surfaces and refractive index discontinuities. To be able to trace rays through optical systems involving such features. To understand the concept of ABCD matrices and to be able to use them to analyze and design simple optical systems. To understand Fermat's principle, the ray equation, and the eikonal equation as three equivalent statements of the laws of geometrical optics	1. The student is able to identify and perform simple procedures within the area 2. he student is able to name, describe, and combine topics within the area. 3. he student is able to compare, differentiate, explain connections, make an analysis, and put into practice the topics within the area.
			Sem-V-Paper-V-Electricity,Magnetism and Electrons	Electricity and Magnetism - The goal is for students to learn how magnetic poles interact. Also, they will learn the shape of the magnetic lines of force and how the domains of a magnet are arranged. Electromagnets- The students will make an electromagnet and determine the strength of the electromagnet.	Apply knowledge of electricity and magnetism to explain natural physical processes and related technological advances. 2) Use an understanding of calculus along with physical principles to effectively solve problems encountered in everyday life, further study in science, and in the professional world.
			Sem-V-Paper-VI-Modern Physics	Mainly it includes the special relativity, relativistic quantum mechanics, Dirac equation and the Feynman diagrams, quantum fields with general relativity. The aim of modern physics is to cover these topics in sufficient depth.	1. Understand the concept of Reference point. 2. Define the Special and general theories of relativity. 3. Make Galileo conversions. 4. Be knowledgeable about the propositions of relativity
			Sem-Vi-Paper-VII-Renewable Energy	The primary objective for deploying renewable energy in India is to advance economic development, improve energy security, improve access to energy, and mitigate climate change.	ou have a good understanding of renewable energy systems, its components and interactions between the components. This includes all renewable energy technologies, different storage technologies, distribution grid, smart grid including sensors. Regulation and control, and both "stand alone" systems and large integrated distribution systems.

			CHEMISTRY		
			Course I - Inorganic & Physical Chemistry	Acquisition of skills in General Chemistry and Inorganic Chemistry. To develop the ability to correlate the chemical and physical properties of elements and their compounds with their positions in the periodic table. To establish the link between theory and laboratory practice by conducting laboratory experiments. To acquire expertise in chemistry laboratory in handling of reagents and solvents as well as in analytical techniques.	1. Understand the basic concepts of p-block elements 2. Explainthe difference between solid, liquid and gases in terms of intermolecularinteractions. 3. Apply the concepts of gas equations, pH and electrolytes while studying other chemistry courses
			Course II - Organic & General Chemistry	Predict and explain Patterns and Properties. Predict and explain patterns in shape, structure, bonding, hybridization, formal charge, stability, acidity, basicity, solubility, and reactivity for hydrocarbons, halocarbons, alkenes, dienes, and arenes, by understanding and applying concepts of organic chemical structure and bonding and stability	1. Understand and explain the differential behavior of organic compounds based on fundamental concepts learnt 2. Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved. 3. Correlate and describe the stereo chemical properties of organic compounds and reactions
			Course III-Inorganic Chemistry -II	1. To understand the shapes of different orbitals. 2.To understand different principles for filling electrons. 3. To understand how to draw energy diagrams. 4. To understand how to calculate bond order	Acquisition of skills in General Chemistry and Inorganic Chemistry. To develop the ability to correlate the chemical and physical properties of elements and their compounds with their positions in the periodic table. To establish the link between theory and laboratory practice by conducting laboratory experiments. To acquire expertise in chemistry laboratory in handling of reagents and solvents as well as in analytical techniques.
			Course IV: Organic and Physical Chemistry	1. To understand the shapes of different orbitals. 2.To understand different principles for filling electrons. 3. To understand how to draw energy diagrams. 4. To understand how to calculate bond order. 5. To understand how to calculate lattice energy through Born Haber Cycle .6. To understand the shapes of different orbitals. 7..To understand different principles for filling electrons. 8. To understand how to draw energy diagrams. 9. To understand how to calculate bond order	1. Able to write electronic configuration of given atomic number 2. Able to tell the name of orbitals by recognizing shapes of orbitals 3. Able to calculate bond order of different molecules. 4. Able to draw MO digrams of different molecules Acquisition of skills in General Chemistry and Inorganic Chemistry. To develop the ability to correlate the chemical and physical properties of elements and their compounds with their positions in the periodic table. To establish the link between theory and laboratory practice by conducting laboratory experiments. To acquire expertise in chemistry laboratory in handling of reagents and solvents as well as in analytical techniques.
			Sem V- Paper-V-Inorganic, Organic and Physical Chemistry	1. To understand the shapes of different orbitals. 2.To understand different principles for filling electrons. 3. To understand how to draw energy diagrams. 4. To understand how to calculate bond order. 5. To understand how to calculate lattice energy through Born Haber Cycle .6. To understand the shapes of different orbitals. 7..To understand different principles for filling electrons. 8. To understand how to draw energy diagrams. 9. To understand how to calculate bond order	1. Able to write electronic configuration of given atomic number 2. Able to tell the name of orbitals by recognizing shapes of orbitals 3. Able to calculate bond order of different molecules. 4. Able to draw MO digrams of different molecules Acquisition of skills in General Chemistry and Inorganic Chemistry. To develop the ability to correlate the chemical and physical properties of elements and their compounds with their positions in the periodic table. To establish the link between theory and laboratory practice by conducting laboratory experiments. To acquire expertise in chemistry laboratory in handling of reagents and solvents as well as in analytical techniques.
			Sem V- Paper-VI-Inorganic, Organic and Physical Chemistry	1. To understand the shapes of different orbitals. 2.To understand different principles for filling electrons. 3. To understand how to draw energy diagrams. 4. To understand how to calculate bond order. 5. To understand how to calculate lattice energy through Born Haber Cycle .6. To understand the shapes of different orbitals. 7..To understand different principles for filling electrons. 8. To understand how to draw energy diagrams. 9. To understand how to calculate bond order	1. Able to write electronic configuration of given atomic number 2. Able to tell the name of orbitals by recognizing shapes of orbitals 3. Able to calculate bond order of different molecules. 4. Able to draw MO digrams of different molecules Acquisition of skills in General Chemistry and Inorganic Chemistry. To develop the ability to correlate the chemical and physical properties of elements and their compounds with their positions in the periodic table. To establish the link between theory and laboratory practice by conducting laboratory experiments. To acquire expertise in chemistry laboratory in handling of reagents and solvents as well as in analytical techniques.

			Sem VI- Paper VII-Analyticsl Methods in Chemistry	1. to develop an understanding of the range and uses of analytical methods in chemistry 2.. to develop an understanding of the broad role of the chemist in measurement and problem solving for analytical tasks. 3. to provide an understanding of chemical methods employed for elemental and compound analysis.	Knowledge of the concepts through theoretical understanding of the principles of chemistry. Topics like thermodynamics, kinetics, stereochemistry, quantum, symmetry fromanalytical, organic, inorganic and physical chemistry
BSC	MECs	3301	**MATHEMATICS**		
			COURSE-I DIFFERENTIAL EQUATIONS	This course is intended to expose you to the basic ideas of Differential Equations combined with some ideas from Linear Algebra. To be successful, a student must be able at the end of the class to solve the majority of the problems with no external help.	1. After successful completion of this course, the student will be able to; 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, withconstant coefficients. 5. Understand the concept and apply appropriate methods for solving differential equations
			COURSE-II THREE DIMENSIONAL ANALYTICAL SOLID GEOMETRY	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side ...	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
			PAPER- III -Solid Geometry-I & Analysis-II	Real analysis, this course is designed to provide fundamental concepts of analysis, including classical theory of functions of a real variable, differentiation and integration of real functions, as well as some fundamental topics in general topology and metric space theory.	Completing the course students will acquire basic skills that will be measured considering the following learning outcomes: 1. Students will be able to demonstrate competence with elementary properties of sets by proving identities involving union and intersection and Cartesian Products of sets. 2. Students will be able to demonstrate competence with elementary properties of functions by proving results involving composite functions and inverse functions.
			PAPER - IV- Solid Geometry-II & Group Theory	Group theory is one of the great simplifying and unifying ideas in modern mathematics. It was introduced in order to understand the solutions to polynomial equations and has its full significance, as a mathematical formulation of symmetry, been understood.	After studying this course, you should be able to: 1. explain what is meant by a symmetry of a plane figure. 2. Fnd the composite of two symmetries. 3. Find the inverse of a symmetry. 4. Determine whether a given set and binary operation form a group by checking group axioms. 5. Describe the symmetries of some bounded three-dimensional figures
			Sem-V-PAPER - V- LINEAR ALGEBRA	1. Be able to state the group axioms and to verify whether a given set and binary operation form a group. 2. Define subgroup, identity element, inverse, associativity, order of an element, order of a group, group table, inverse, cyclic group, abelian/commutative group, 3. Compute orders, powers, and inverses in concrete examples.	Upon successful completion of this course, students will: Solve systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion. Carry out matrix operations, including inverses and determinants.
			Sem-V Paper-VI-Numerical Analysis	To provide the numerical methods of solving the non-linear equations, interpolation, differentiation, and integration. To improve the student's skills in numerical methods by using the numerical analysis software and computer facilities.	Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations. Analyse and evaluate the accuracy of common numerical methods.
			SEM-VI - PAPER - VII (MAT076)- MATRIX THEORY	1. Use the method of Gauss-Jordan elimination to find the solutions of systems of simultaneous linear equations 2. Solve a system of linear equations by row-reducing its augmented form 3. Perform the matrix operations of addition, multiplication and transposition and express a system of simultaneous linear equations in matrix form	1. Solve systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion. 2. Carry out matrix operations, including inverses and determinants. 3. Demonstrate understanding of the concepts of vector space and subspace. 4. Demonstrate understanding of linear independence, span, and basis. 5. Determine eigenvalues and eigenvectors and solve eigenvalue problems. 6 Apply principles of matrix algebra to linear transformations. 7. Demonstrate understandingof inner products and associated norms.

			Sem-VI- Cluster-I-Advanced Numerical Analysis	The course aims to provide students with the specialist knowledge in advanced Numerical Analysis. With this overall aim, the course strives to enable students to: Understand analytical, developmental and technical principles that relate to Numerical Linear Algebra, Numerical Methods for solving Differential Equations, and Numerical Optimization, develop the academic abilities required to solve problems and applications in Numerical Analysis and/or Numerical Optimization and critically assess relevant aspects of the industry, and demonstrate an ability to initiate and sustain in-depth research in Numerical Analysis or Numerical Optimization	1. Knowledge and Understanding: During the lecture the student understands the nature and operations of Numerical Analysis, demonstrates familiarity with theories and concepts used in Numerical Analysis, and identifies the steps required to carry out a piece of research on a topic in Numerical Analysis. 2. Intellectual Skills: By the end of the course the student is expected to recognize and apply appropriate theories, principles and concepts relevant to Numerical Analysis, critically assess and evaluate the literature within the field of Numerical Analysis, analyze and interpret information from a variety of sources relevant to Numerical Analysis.
			Sem-VI- Cluster-II-Laplace Transforms	The Laplace transform is used to solve differential equations. It is accepted widely in many fields. We know that the Laplace transform simplifies a given LDE (linear differential equation) to an algebraic equation, which can later be solved using the standard algebraic identities.	After completing this course, students will be able to understand the applications of Laplace transform and Fourier series. The students will be able to solve ordinary differential equations using Laplace transform.
			Sem-VI- Cluster-III - Project Work		
			ELECTRONICS		
			COURSE-I :CIRCUIT THEORY AND ELECTRONIC DEVICES	1. To explain the basic concepts and laws of DC and AC electrical networks and solve them using mesh and nodal analysis techniques. 2. To analyze circuits in time and frequency domain .3. To synthesize the networks using passive elements. 4. To understand the concept of power supply.	1. Apply concepts of electric network topology, nodes, branches, loops to solve circuit problems including the use of computer simulation. 2. Apply time and frequency concepts of analysis. 3. Synthesize the network using passive elements. 4. Know about amplifier circuits, switching circuits and oscillator circuits their design and use in electronics. 5. Design and construction of a power supply.
			COURSE_II : Digital Electronics	1. To understand the number systems, Binary codes and Complements. 2. To understand the Boolean algebra and simplification of Boolean expressions. 3. To analyze logic processes and implement logical operations using combinational logic circuits. 4. To understands characteristics of memory and their classification. 5. To implement combinational and sequential circuits using VHDL	1. Develop a digital logic and apply it to solve real life problems. 2. Analyze, design and implement combinational logic circuits. 3. Classify different semiconductor memories. 4. Analyze, design and implement sequential logic circuits. 5. Simulate and implement combinational and sequential logic circuits using
			Course-III-Electronics Devices & Circuits	1. To introduce basic semiconductor devices, their characteristics and application 2. To understand analysis and design of simple diode circu 3. To learn to analyze the PN junction behavior at the circuit level and its role in the operation of diodes and active device	1. Ability to analyze PN junctions in semiconductor devices under various conditions. 2. Ability to design and analyze simple rectifiers and voltage regulators using diodes. 3. Ability to describe the behavior of special purpose diodes. 4. Ability to design and analyze simple BJT and MOSFET circuits.

			Course-IV-Analog Circuits & Communications	1.To build the strong foundation in Mathematics of students needed for the field of electronics and Telecommunication Engineering 2. To provide students with mathematics fundamentals necessary to formulate, solve and analyses complex engineering problems. 3. To prepare student to apply reasoning informed by the contextual knowledge to engineering practice. 4. To prepare students to work as part of teams on multi-disciplinary projects. 5. Linear differential equations of higher order using analytical methods and numerical methods applicable to Control systems and Network analysis	1.Comprehend the fundamentals of construction of the semiconducting material, fabrication of elements, working principles and operation of semiconductors. 2. Analyze the concept with the working principles of forward and reverse bias characteristics. 3. Demonstrate the basic skills in design and analysis of filter circuits, biasing circuits. 4. Discriminate the principle, construction and operation of BJTs, FETs and MOSFETs.
			Sem-V-paper-V-Micro Processors(Intel-8085)	1. Basic terminology of computer networks. 2. To get the awareness on different types of networks available for the companies. 3. To get knowledge on ISO-OSI and TCP/IP models and their layer functionalities. 4. To understand the routing algorithms, transmission media and their addressing techniques	1. Understand the basic networking terminology. 2. To gain the knowledge on various types of networks like Local Area Network, Metropolitan Area Network and Wide Area Network. 3. Identify the comparisons between wired and wireless networks. 4. Design an algorithm for routing the data using TCP(Connection-Oriented) or UDP(Connectionless) Protocol..
			Sem-V-paper-VI-Electronic Communication	1.Practice the ethics of their profession consistent with a sense of social responsibility and develop their engineering design, problem –solving skills and aptitude for innovations as they work individually and in multi-disciplinary teams. 2. Communicate effectively and manage resources skillfully as members and leaders of the profession. 3. Be receptive to new technologies and attain professional competence through lifelong learning such as advanced degrees, professional registration, publications and other professional activities	1. Utilize the basic knowledge in mathematics, science and engineering in Electronics and Communication Engineering field. 2. Identify, formulate and solve complex problems to achieve demonstrated conclusions using mathematical principles and engineering sciences. 3. Design system components that meet the requirement of public safety and offer solutions to the societal and environmental concerns. 4. Apply research based knowledge to design and conduct experiments, analyze, synthesize and interpret the data pertaining to Electronics and Communication Engineering problems and arrive at valid conclusions.
			Sem-VI-Paper-VII-Micro Controllers & Applications	1. Give an understanding about the concepts and basic architecture of 8051 2 .Provide an overview of difference between microprocessor and micro controller 3. Provide background knowledge and core expertise in microcontroller 4. Study the architecture and addressing modes of 8051 5. Impart knowledge about assembly language programs of 8051 6. Help understand the importance of different peripheral devices & their interfacing to 8051 7. Impart knowledge of different types of external interfaces including LEDS, LCD, Keypad Matrix, Switches & Seven segment display	1. Explain the general construction of microcomputer system. 2. Explain that a microcomputer system consists of CPU, RAM and ROM memories, input /output interfaces and peripheral units. And explain how to make receiving and sending of data explain the terms of ‘address and data bus’ 3. Examine the units in microcomputer system. 4. Draw a simple memory schema, explain the planning of memory of microcomputer system. 5. Examine the construction of CPU, know registers and bus systems. Show how to run an instruction in a ample microcomputer system.(Fetch, decode, execute) 6. Compare microprocessors and microcontroller.
			COMPUTER SCIENCE		
			COURSE-I : PROBLEM SOLVING IN C	This course aims to provide exposure to problem-solving through programming. It introduces the concepts of the C Programming language.	1. Understand the evolution and functionality of a Digital Computer. 2. Apply logical skills to analyse a given problem. 3. Develop an algorithm for solving a given problem. 4. Apply 'C' language constructs to the algorithms towrite a 'C' language program.

			COURSE-II :DATA STRUCTURES USING C	To introduce the fundamental concept of data structures and to emphasize the importance of various data structures in developing and implementing efficient algorithms.	1. Understand available Data Structures for data storage and processing. 2. ComprehendData Structure and their real-time applications - Stack, Queue, Linked List, Trees and Graph. 3. Choose a suitable Data Structures for an application. 4. Design and develop programs using various data structures. 5. mplement the applications of algorithms for sorting, pattern matching etc
			Course-III-Programming with Java	1. To learn why Java is useful for the design of desktop and web applications. 2. To learn how to implement object-oriented designs with Java. 3. To identify Java language components and how they work together in applications. 4. To design and program stand-alone Java applications. 5. To learn how to design a graphical user interface (GUI) with Java Swing. 6. To understand how to use Java APIs for program developmen	1. Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs. 2. Read and make elementary modifications to Java programs that solve real-world problems. 3. Validate input in a Java program.
			Course-IV-Data structures with Java	1. Develop code that responds to exception conditions raised during execution. 2. Design, implement, test, and debug simple programs in Java. 3. Discuss the properties of good software design. 4. Use class browsers and related tools during the development of applications using APIs. Design, implement, test, and debug programs that use large-scale API packages.	1. Use and implement abstract data types such as lists, stacks, queues, and trees. 2. Select the appropriate searching or sorting algorithm based on the algorithm's behavior. 3. Develop recursive algorithms and programs. 4. Use standard libraries or packages as well as advanced object-oriented programming techniques (polymorphism, inheritance, and encapsulation). 5. Produce robust and secure programs using exception handling and extensive program testing.
			Sem-V-Paper-V-Database Management System	This course provides an introduction to relational database systems. The topics covered include the relational model, SQL, transactions, database design, and concepts and algorithms for building database management systems.	1. have a broad understanding of database concepts and database management system software 2.have a high-level understanding of major DBMS components and their function be able to model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model. 3.be able to write SQL commands to create tables and indexes, insert/update/delete data, and query data in a relational DBMS. 4.be able to program a data-intensive application using DBMS APIs.
			Sem-V-Paper-VI-Software Engineering	1. Be employed in industry, government, or entrepreneurial endeavors to demonstrate professional advancement through significant technical achievements and expanded leadership responsibility; 2. Demonstrate the ability to work effectively as a team member and/or leader in an ever-changing professional environment; and 3. Progress through advanced degree or certificate programs in computing, science, engineering, business, and other professionally related fields.	Work as an individual and as part of a multidisciplinary team to develop and deliver quality software. Demonstrate an understanding of and apply current theories, models, and techniques that provide a basis for the software lifecycle.

			Sem-VI- Paper-VII-Web Techmology	1 .Understand the principles of creating an effective web page, including an in-depth consideration of information architecture. 2. Become familiar with graphic design principles that relate to web design and learn how to implement theories into practice. 3. Develop skills in analyzing the usability of a web site. 4. Understand how to plan and conduct user research related to web usability. 5. Learn the language of the web: HTML and CSS. 6. Learn CSS grid layout and flexbox. 7. Learn techniques of responsive web design, including media queries.	The student will be able to: • Analyze a web page and identify its elements and attributes. Create web pages using XHTML and Cascading Style Sheets. Build dynamic web pages using JavaScript (Client side programming). Create XML documents and Schems.
BSC	MPCs	3601	**MATHEMATICS**		
			COURSE-I DIFFERENTIAL EQUATIONS	This course is intended to expose you to the basic ideas of Differential Equations combined with some ideas from Linear Algebra. To be successful, a student must be able at the end of the class to solve the majority of the problems with no external help.	1. After successful completion of this course, the student will be able to; 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, withconstant coefficients. 5. Understand the concept and apply appropriate methods for solving differential equations
			COURSE-II THREE DIMENSIONAL ANALYTICAL SOLID GEOMETRY	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side ...	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
			PAPER- III -Solid Geometry-I & Analysis-II	Real analysis, this course is designed to provide fundamental concepts of analysis, including classical theory of functions of a real variable, differentiation and integration of real functions, as well as some fundamental topics in general topology and metric space theory.	Completing the course students will acquire basic skills that will be measured considering the following learning outcomes: 1. Students will be able to demonstrate competence with elementary properties of sets by proving identities involving union and intersection and Cartesian Products of sets. 2. Students will be able to demonstrate competence with elementary properties of functions by proving results involving composite functions and inverse functions.
			PAPER - IV- Solid Geometry-II & Group Theory	Group theory is one of the great simplifying and unifying ideas in modern mathematics. It was introduced in order to understand the solutions to polynomial equations and has its full significance, as a mathematical formulation of symmetry, been understood.	After studying this course, you should be able to: 1. explain what is meant by a symmetry of a plane figure. 2. Fnd the composite of two symmetries. 3. Find the inverse of a symmetry. 4. Determine whether a given set and binary operation form a group by checking group axioms. 5. Describe the symmetries of some bounded three-dimensional figures
			Sem-V-PAPER - V- LINEAR ALGEBRA	1. Be able to state the group axioms and to verify whether a given set and binary operation form a group. 2. Define subgroup, identity element, inverse, associativity, order of an element, order of a group, group table, inverse, cyclic group, abelian/commutative group, 3. Compute orders, powers, and inverses in concrete examples.	Upon successful completion of this course, students will: Solve systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion. Carry out matrix operations, including inverses and determinants.
			Sem-V Paper-VI-Numerical Analysis	To provide the numerical methods of solving the non-linear equations, interpolation, differentiation, and integration. To improve the student's skills in numerical methods by using the numerical analysis software and computer facilities.	Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations. Analyse and evaluate the accuracy of common numerical methods.

			SEM-VI - PAPER - VII (MAT076)- MATRIX THEORY	1. Use the method of Gauss-Jordan elimination to find the solutions of systems of simultaneous linear equations 2. Solve a system of linear equations by row-reducing its augmented form 3. Perform the matrix operations of addition, multiplication and transposition and express a system of simultaneous linear equations in matrix form	1. Solve systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion. 2. Carry out matrix operations, including inverses and determinants. 3. Demonstrate understanding of the concepts of vector space and subspace. 4. Demonstrate understanding of linear independence, span, and basis. 5. Determine eigenvalues and eigenvectors and solve eigenvalue problems. 6 Apply principles of matrix algebra to linear transformations. 7. Demonstrate understandingof inner products and associated norms.
			Sem-VI- Cluster-I-Advanced Numerical Analysis	The course aims to provide students with the specialist knowledge in advanced Numerical Analysis. With this overall aim, the course strives to enable students to: Understand analytical, developmental and technical principles that relate to Numerical Linear Algebra, Numerical Methods for solving Differential Equations, and Numerical Optimization, develop the academic abilities required to solve problems and applications in Numerical Analysis and/or Numerical Optimization and critically assess relevant aspects of the industry, and demonstrate an ability to initiate and sustain in-depth research in Numerical Analysis or Numerical Optimization	1. Knowledge and Understanding: During the lecture the student understands the nature and operations of Numerical Analysis, demonstrates familiarity with theories and concepts used in Numerical Analysis, and identifies the steps required to carry out a piece of research on a topic in Numerical Analysis. 2. Intellectual Skills: By the end of the course the student is expected to recognize and apply appropriate theories, principles and concepts relevant to Numerical Analysis, critically assess and evaluate the literature within the field of Numerical Analysis, analyze and interpret information from a variety of sources relevant to Numerical Analysis.
			Sem-VI- Cluster-II-Laplace Transforms	The Laplace transform is used to solve differential equations. It is accepted widely in many fields. We know that the Laplace transform simplifies a given LDE (linear differential equation) to an algebraic equation, which can later be solved using the standard algebraic identities.	After completing this course, students will be able to understand the applications of Laplace transform and Fourier series. The students will be able to solve ordinary differential equations using Laplace transform.
			Sem-VI- Cluster-III - Project Work		
			PHYSICS		
			Course I: MECHANICS, WAVES AND OSCILLATIONS	A valid or inertial reference frame is that in which this tell tale of signature of freedom from forces, that is a state of rest or of uniform rectilinear	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.
			Course-II: WAVE OPTICS	It is used in many areas of science, such as astronomy, engineering, oceanography, physics, and fiber optics. Popular applications of interferometry in industry include the measurement of small displacements, refractive index changes, and surface irregularities.	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.

			Course-III - Heat & Thermodynamics	1. To be able to state the First Law and to define heat, work, thermal efficiency and the difference between various forms of energy. 2. To be able to identify and describe energy exchange processes (in terms of various forms of energy, heat and work) in aerospace systems. 3. To be able to apply ideal cycle analysis to simple heat engine cycles to estimate thermal efficiency and work as a function of pressures and temperatures at various points in the cycle	Restate defination of system, surrounding, closed and open system, extensive and intensive properties. calculate absolute and gage pressure, and absolute temperature. calculate changes in kinetic, potential, enthalpy and internal energy.
			Course-IV-Optics	o understand the behavior of light rays travelling in free space and incident on reflective surfaces and refractive index discontinuities. To be able to trace rays through optical systems involving such features. To understand the concept of ABCD matrices and to be able to use them to analyze and design simple optical systems. To understand Fermat's principle, the ray equation, and the eikonal equation as three equivalent statements of the laws of geometrical optics	1. The student is able to identify and perform simple procedures within the area 2. he student is able to name, describe, and combine topics within the area. 3. he student is able to compare, differentiate, explain connections, make an analysis, and put into practice the topics within the area.
			Sem-V-Paper-V-Electricity,Magnetism and Electrons	Electricity and Magnetism - The goal is for students to learn how magnetic poles interact. Also, they will learn the shape of the magnetic lines of force and how the domains of a magnet are arranged. Electromagnets- The students will make an electromagnet and determine the strength of the electromagnet.	Apply knowledge of electricity and magnetism to explain natural physical processes and related technological advances. 2) Use an understanding of calculus along with physical principles to effectively solve problems encountered in everyday life, further study in science, and in the professional world.
			Sem-V-Paper-VI-Modern Physics	Mainly it includes the special relativity, relativistic quantum mechanics, Dirac equation and the Feynman diagrams, quantum fields with general relativity. The aim of modern physics is to cover these topics in sufficient depth.	1. Understand the concept of Reference point. 2. Define the Special and general theories of relativity. 3. Make Galileo conversions. 4. Be knowledgeable about the propositions of relativity
			Sem-Vi-Paper-VII-Renewable Energy	The primary objective for deploying renewable energy in India is to advance economic development, improve energy security, improve access to energy, and mitigate climate change.	ou have a good understanding of renewable energy systems, its components and interactions between the components. This includes all renewable energy technologies, different storage technologies, distribution grid, smart grid including sensors. Regulation and control, and both "stand alone" systems and large integrated distribution systems.
			COMPUTER SCIENCE		
			COURSE-I : PROBLEM SOLVING IN C	This course aims to provide exposure to problem-solving through programming. It introduces the concepts of the C Programming language.	1. Understand the evolution and functionality of a Digital Computer. 2. Apply logical skills to analyse a given problem. 3. Develop an algorithm for solving a given problem. 4. Apply 'C' language constructs to the algorithms towrite a 'C' language program.
			COURSE-II :DATA STRUCTURES USING C	To introduce the fundamental concept of data structures and to emphasize the importance of various data structures in developing and implementing efficient algorithms.	1. Understand available Data Structures for data storage and processing. 2. ComprehendData Structure and their real-time applications - Stack, Queue, Linked List, Trees and Graph. 3. Choose a suitable Data Structures for an application. 4. Design and develop programs using various data structures. 5. mplement the applications of algorithms for sorting, pattern matching etc
			Course-III-Programming with Java	1. To learn why Java is useful for the design of desktop and web applications. 2. To learn how to implement object-oriented designs with Java. 3. To identify Java language components and how they work together in applications. 4. To design and program stand-alone Java applications. 5. To learn how to design a graphical user interface (GUI) with Java Swing. 6. To understand how to use Java APIs for program developmen	1. Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs. 2. Read and make elementary modifications to Java programs that solve real-world problems. 3. Validate input in a Java program.

			Course-IV-Data structures with Java	1. Develop code that responds to exception conditions raised during execution. 2. Design, implement, test, and debug simple programs in Java. 3. Discuss the properties of good software design. 4. Use class browsers and related tools during the development of applications using APIs. Design, implement, test, and debug programs that use large-scale API packages.	1. Use and implement abstract data types such as lists, stacks, queues, and trees. 2. Select the appropriate searching or sorting algorithm based on the algorithm's behavior. 3. Develop recursive algorithms and programs. 4. Use standard libraries or packages as well as advanced object-oriented programming techniques (polymorphism, inheritance, and encapsulation). 5. Produce robust and secure programs using exception handling and extensive program testing.
			Sem-V-Paper-V-Database Management System	This course provides an introduction to relational database systems. The topics covered include the relational model, SQL, transactions, database design, and concepts and algorithms for building database management systems.	1. have a broad understanding of database concepts and database management system software 2.have a high-level understanding of major DBMS components and their function be able to model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model. 3.be able to write SQL commands to create tables and indexes, insert/update/delete data, and query data in a relational DBMS. 4.be able to program a data-intensive application using DBMS APIs.
			Sem-V-Paper-VI-Software Engineering	1. Be employed in industry, government, or entrepreneurial endeavors to demonstrate professional advancement through significant technical achievements and expanded leadership responsibility; 2. Demonstrate the ability to work effectively as a team member and/or leader in an ever-changing professional environment; and 3. Progress through advanced degree or certificate programs in computing, science, engineering, business, and other professionally related fields.	Work as an individual and as part of a multidisciplinary team to develop and deliver quality software. Demonstrate an understanding of and apply current theories, models, and techniques that provide a basis for the software lifecycle.
			Sem-VI- Paper-VII-Web Techmology	1 .Understand the principles of creating an effective web page, including an in-depth consideration of information architecture. 2. Become familiar with graphic design principles that relate to web design and learn how to implement theories into practice. 3. Develop skills in analyzing the usability of a web site. 4. Understand how to plan and conduct user research related to web usability. 5. Learn the language of the web: HTML and CSS. 6. Learn CSS grid layout and flexbox. 7. Learn techniques of responsive web design, including media queries.	The student will be able to: • Analyze a web page and identify its elements and attributes. Create web pages using XHTML and Cascading Style Sheets. Build dynamic web pages using JavaScript (Client side programming). Create XML documents and Schems.