CO PART I

CHEMICAL ENGINEERIN	c c
	S.Y. B Tech Part-I Sem-III
Course Name:-	Engineering Mathametics -III
CO1	Determine Fourier series expansion of functions
CO2	Evaluate improper integrals involving trigonometric functions
CO3	Solve finite difference equations using Z transforms
CO4	Solve PDEs using variables separable method.
CO5	Evaluate improper integrals using residue theorem.
Course Name:-	Chemical Process Calculations
CO1	Perform basic calculations required in chemical industries.
CO2	Write mass and energy balance for various unit operations& processes in chemical industries.
СО3	Use mathematical knowledge for solving mass and energy balance problems
CO4	Use various mass and energy balance writing techniques in process design & in chemical process industries.
Course Name:-	Fluid Flow Operations
CO1	To have Knowledge of fundamental concepts in fluids, such as density, viscosity, pressure, stress/strain rate, etc. To have ability to apply mass, energy, and momentum balances to hydrostatic and fluid flow problems.
CO2	To have Ability to analyze frictional flow in pipes and piping networks, fluid flow in chemical engineering equipment
соз	To provide students with a lasting and solid understanding of fluid mechanics
CO4	To learn how to properly set up and solve fluid mechanics problems both analytically and numerically where appropriate.
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Course Name:-	Mechanical Operations
CO1	Students are expected to understand the basic principles of particles preparation and their characterization.
CO2	Students are expected to have an understanding of solid storage and their conveying in chemical process industries.
CO3	Students are expected to have an understanding of design of sedimentation tanks and other solid fluid separation equipments.
CO4	Students are expected to have knowledge about different size reducing equipments and power requirements during size reduction.
Course Name:-	Applied Engineering Chemistry
CO1	To understand basic principles of physical chemistry which may helpful in CRE & MT (by studying chemical kinetics, Nernst distribution law, solubility and distribution law, equilibrium constant, Catalysis.
CO2	To understand importance of organic chemistry in everyday life (by studying dyes, soap & detergents, biomolecules, Drugs and pesticides etc.)
CO3	To understand chemistry of dyes, soap & detergents, biomolecules, Drugs and pesticides etc.
CO4	To understand different unit processes in organic synthesis.
Course Name:-	Elective -I : Green technology
	Understand principles and concepts of green chemistry
CO1	
CO2	Develop manufacturing processes to reduce wastage and energy consumption
CO3	Design the technologies to reduce the level of emissions from buildings and core infrastructure
CO4	Analyze the effects of pollutants on the environment
Course Name:-	Mini Project -I
CO1	Understand, plan and execute a Mini Project with team.
CO2	Implement basic engineering knowledge.
CO3	Prepare a technical report based on the Mini project.
CO4	Deliver technical seminar based on the Mini Project work carried out.
T.E PART I SEM V	
Course Name:-	Process Instrumentation & Instrumental Methods of Analysis
CO1	Select appropriate instrument for a given chemical parameter
CO2	Calibrate instruments
	Use various analytical methods for analysis of various industrial samples.
CO3	Use various analytical metrious for analysis of various industrial samples.
Course Name:-	Computer Techniques in Chemical Engineering
CO1	To solve chemical engineering problems.
CO1 CO2	To solve chemical engineering problems. Select a computational tool that is capable of solving a particular chemical engineering problem. Such tools include, EXCEL, POLYMATH, Visual Basic, Matlab, Aspen, polymath, and Scilab
CO1	To solve chemical engineering problems. Select a computational tool that is capable of solving a particular chemical engineering problem. Such tools include, EXCEL, POLYMATH, Visual Basic, Matlab, Aspen, polymath, and Scilab Able to do modeling and simulation for unit operations and process in chemical engineering.
CO1 CO2	To solve chemical engineering problems. Select a computational tool that is capable of solving a particular chemical engineering problem. Such tools include, EXCEL, POLYMATH, Visual Basic, Matlab, Aspen, polymath, and Scilab
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CO1 CO2 CO3 CO4	To solve chemical engineering problems. Select a computational tool that is capable of solving a particular chemical engineering problem. Such tools include, EXCEL, POLYMATH, Visual Basic, Matlab, Aspen, polymath, and Scilab Able to do modeling and simulation for unit operations and process in chemical engineering. Able to solve various mathematical problems via programming.
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CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO2 CO3 CO4 CO2 CO3 CO4 CO0 CO2 CO3 CO4 CO0 CO2 CO3 CO4 CO0	To solve chemical engineering problems. Select a computational tool that is capable of solving a particular chemical engineering. Able to do modeling and simulation for unit operations and process in chemical engineering. Able to solve various mathematical problems via programming. Mass Transfer — To able to design equipment for mass transfer operations, the rate equations are important which can be utilized for optimization concept. Understand concept of steady state & unsteady state difficional operations for controlling parameters in actual industrial process. Understand the trouble shooting problem in actual operation Implement the knowledge of various unit operations in the real plants. Chemical Engineering Thermodynamics-II Solve Problem Related To Vapor – Liquid Equilibrum. Calculate Partial Properties, Residual Properties And Excess Properties. Verbuate Equilibrium Constants And Composition For Reacting Systems. Evaluate Equilibrium Constants And Composition For Reacting Systems. Chemical Equipment Design — I Understand design of piping systems Understand design of storage equipments Understand design of mining and agitation equipments
CO1 CO2 CO3 CO4 COurse Name:- CO1 CO2 CO3 CO4 COurse Name:- CO1 CO2 CO3 CO4 CO4 CO2 CO3 CO4 CO4 CO05 CO4 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	To solve chemical engineering problems. Select a computational tool that is capable of solving a particular chemical engineering problems. Such tools include, EXCEL, POLYMATH, Visual Basic, Matabb, Aspen, polymath, and Scilab Able to do modeling and simulation for unit operations and process in chemical engineering. Able to solve various mathematical problems via programming. Mass Transfer -I To able to design equipment for mass transfer operations, the rate equations are important which can be utilized for optimization concept. To able to design equipment for mass transfer operations, the rate equations are important which can be utilized for optimization concept. Understand concept of steady state & unsteady state diffusional operations for controlling parameters in actual industrial process. Understand to rouble shooting problem in actual operation Implement the knowledge of various unit operations in the real plants. Solve Problems Related To Vapor — Legulat Equilibrium. Calculate Partial Properties, Residual Properties And Excess Properties. Use Thermodynamic Properties For Non-ideal Systems. Evaluate Equilibrium Constants And Composition For Reacting Systems. Chemical Equipment Design — I Understand the practical applications of basic design engineering principles. Understand design of piping systems Understand design of piping systems Understand design of noting and aglation equipments Understand design of noting and aglation equipments Understand be practical applications of basic design and safety the ability to design a systems, component, process to meet desired specifications.
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO4 Course Name:- CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO4 CO5 CO5 CO6	To solve chemical engineering problems. Select a computational tool that is capable of solving a particular chemical engineering problem. Such tools include, EXCEL, POLYMATH, Visual Basic, Matlab, Aspen, polymath, and Scilab Able to do modelling and simulation for unit operations and process in chemical engineering. Able to solve various mathematical problems via programming. Mass Transfer—I To able to design equipment for mass transfer operations, the rate equations are important which can be utilized for optimization concept. Understand concept of steady state & unsteady state edifficional operations for controlling parameters in actual industrial process. Understand the trouble shooting problem in actual operations in the real plants. Chemical Engineering Thermodynamic-11 Solve Problem Related To Vapor—Liquid Equilibrium. Calculate Partial Properties, Residual Properties And Excess Properties. Use Thermodynamic Properties, For Non-ideal Systems. Chemical Equipment Design—I Understand the practical applications of basic design engineering principles. Chemical Equipment Design—I Understand design of pring systems. Chemical Equipment Design of I foring equipments of a size of the principles of the properties of the principles of the principles of the properties of the principles of the principles of the properties and adaption equipments Understand design of infixing and agistation equipment design and drawing of double shell and tube heat exchanger.
CO1 CO2 CO3 CO4 COURSE NAME:- CO1 CO2 CO3 CO4 CO4 COURSE NAME:- CO1 CO2 CO3 CO4 CO4 COURSE NAME:- CO1 CO2 CO3 CO4 CO4 CO4 CO5 CO6 CO6 CO6 CO6 CO6 CO7	To solve chemical engineering problems. Select a computational tool that is capable of solving a particular chemical engineering problems. Such tools include, EXCEL, POLYMATH, Visual Basic, Matlab, Aspen, polymath, and Scilab Able to do modeling and simulation for unit operations and process in chemical engineering. Mass Transfer —I Mass Transfer —I To able to design equipment for mass transfer operations, the rate equations are important which can be utilized for optimization concept. Understand concept of steady state & unsteady state diffusional operations for controlling parameters in actual industrial process. Understand the trouble shooting problem in actual operations for controlling parameters in actual industrial process. Chemical Engineering Thermodynamic-H Solve Problem Related To Vapor – Luquid Equilibrium. Calculate Paralla Properties, Recisialar Properties And Excess Properties. Understand design of properties, Recisialar Prope
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CO4	Deliver technical seminar based on the Mini Project work carried out.
B.E. PART I SEM VII	
Course Name:-	Chemical Processes & Green Technology
CO1	Understand the detailed of chemical manufacturing process
CO2	Understand the role of chemicals for society
CO3	Understand flow sheeting of different process with unit operations and unit process involved.
CO4	Understand bio-fuel technology and importance of alternatives fuels for today's environment.
CO5	Application of knowledge for practical purposes
Course Name:-	Transport Phenomena
CO1	Understand, analyze and solve steady state problems, particularly in context of momentum, heat and mass transfer.
CO2	Analyze steady state shell momentum, energy and mass balance for laminar flow across various boundary conditions.
CO3	Apply equations of change in various co-ordinate systems and able to solve problems for cases that are well defined and also slightly defined.
CO4	Correlate the analogy between momentum, heat and mass transport.
Course Name:-	Process Economics & Project Engineering
CO1	Apply the chemical engineering knowledge to practical situations for the purpose of accomplishing something that will be economical and beneficial to the society
CO2	Understand and work problems that account for the time value of money, cash flows occurring at different times with different amounts, and equivalence at different interest rates.
CO3	Determine the breakeven for one or two alternatives and calculate the payback period.
CO4	Make computations for interest rates, rates of return and understand interest rate statements that include nominal and effective rates.
Course Name:-	Elective -II Distillation
CO1	Perform vapor liquid equilibrium calculations for ideal and non ideal systems.
CO2	Perform mass and energy balance calculations
CO3	Determine number of stages required for separation
CO4	Solve distillation problems using Lewis and McCabe Thiele methods, solve multi-component distillation problems using shortcut methods
Course Name:-	Elective-III: Energy Conservation and Recovery
CO1	Impart knowledge in the domain of energy conservation and recovery
CO2	Bring out Energy Conservation Potential
CO3	Inculcate knowledge and skills about assessing the energy efficiency in industry
Course Name:-	Advanced Separation Processes
CO1	Understand fundamentals of separation processes.
CO2	Understand various techniques to select separation process.
CO3	Understand various parameters affect on separations.
CO4	Understand application of separation processes in various industries
	F.Y M.Tech Sem-I
Course Name:-	ADVANCED MOMENTUM TRANSFER
CO1	Understand the analogous mechanism of momentum Transport for steady and unsteady flow.
CO2	Perform momentum balance for a given system at macroscopic and microscopic scale.
CO3	Solve the governing equations to obtain velocity profiles.
CO4	Model the momentum transport under turbulent conditions.
Course Name:-	ELECTIVE - I ADVANCED HEAT TRANSFER
CO1	Derive the governing differential equation for conduction and convection heat transfer Solve the differential equation to obtain temperature profile in solid or fluid
CO2	Apply finite difference methods to solve problems in heat transfer
CO3	Calculate the net radiation loss from a surface in an enclosure of many surfaces
	ADVANCED REACTION ENGINEERING
Course Name:-	Calculate reactor performance in situations where the observed reaction rate is significantly influenced by internal mass transfer in porous heterogeneous catalytic systems
CO2	
CO3	Understand the energy balance and concentration profiles of multiphase reactors. Estimate the performance of multiphase reactors in the situation such as temperature not uniform within the reactor and three phases are involved
CO4	Understand modern reactor technologies for mitigation of global warming
	Understand modern reactor Econologies on mitigation of goden warning
Course Name:-	Understand the thermodynamics of equilibrium
CO2	Study properties from volumetric data and make use of empirical equations to predict fugacity of pure liquid or solid
CO3	Applications of thermodynamics to predict fugacity of liquid mixtures
CO4	Study the intermolecular forces and theories of corresponding states.
Course Name:-	ELECTIVE - II Process Intensification
CO1	Apply process intensification in industrial processes
CO2	implement methodologies for process intensification
соз	Understand scale up issues in the chemical process.
CO4	Gain the scientific background, techniques and applications of intensification in the process industries.
COS	Identify and solve process challenges using intensification technologies.
Course Name:-	COMMUNICATION SKILLS
CO1	Understand corporate communication culture
CO2	Prepare business reports and proposals expected of a corporate professional
соз	Employ appropriate speech in formal business situations
CO4	Exhibit corporate social responsibility and ethics
CO5	Acquire corporate email, mobile and telephone etiquette
Course Name:-	COMPUTATIONAL LAB-I
CO1	Solve complex chemical engineering problems by applying suitable numerical methods.
CO2	Estimate the thermodynamic properties from implicit equations using C language / MATLAB
соз	Design the process equipment using C/C++ language /MATLAB
CO4	Analyze and formulate a mathematical problem and solve the resulting system of linear set of equations, ODE, PDE using C/C++ programming/MATLAB.
	F.Y M.Tech Sem-III
Course Name:-	PROJECT WORK - STAGE I
CO1	Identify the problem based on literature survey
CO2	Formulate the problem
CO3	Identify the methods or techniques required for the solution

CO4 CIVIL ENGINEERING	Develop the solution methodology
	S.Y. B Tech Part-I Sem-III
	ENGINEERING MATHEMATICS I
	student will be able to formulate and solve mathematical model of civil engineering phenomena in field of structures, survey, fluid mechanics and soil mechanics
Course Name:-	MECHANICS OF SOUDS
CO1	Perform the stress-strain analysis.
CO2	Draw force distribution diagrams for members and determinate beams.
	Find deflections in determinant beams.
	Visualize force deformation behavior of bodies.
	HYDRAULICS I
	Calibrate the various flow measuring devices. Determine the properties of fluid and pressure and their measurement.
CO3	Understand fundamentals of pipe flow, losses in pipe and analysis of pipe network.
CO4	Visualize fluid flow phenomena observed in Civil Engineering systems.
Course Name:-	SURVEYING-I
CO1	Perform measurements in linear/angular methods.
CO2	Perform plane table surveying in general terrain.
CO3	Know the basics of leveling and theodolite survey in elevation and angular measurements.
	BUILDING CONSTRUCTION
	Understand types of masonry structures.
CO2	Understand composition of concrete and effect of various parameters affecting strength.
	Comprehend components of building and there purposes. Comprehend the precast and pre-engineered building construction techniques.
	Comprehend the precast and pre-engineered dualding construction techniques. T.E.PARTI SEM V
	DESIGN OF STEEL STRUCTURES
	Know the essential elements necessary to analyze steel structures
CO2	Analyze and design different types of bolted and welded connections.
CO3	Understand concept of net area and gross area and demonstrate the knowledge of common sections subjected to tension and its design.
CO4	Analyze and design compression members and design of steel column, column bases and its elements, laterally supported and unsupported beams
	Interpret forces acting on gantry girders.
	GEOTECHNICAL ENGINEERING - I
	Understand the index properties of the soil.
	Characterize the soil based on size, shape, index properties of the soil. Understand the concept of total stress, effective stress and pore water pressure in soil.
	Understand the process of compaction and consolidation.
	Understand the shear strength of the soil.
	Determine the earth pressure on retaining structures.
Course Name:-	ENVIRONMENTAL ENGINEERING -I
CO1	Describe the various sources of water with respect to quality and quantity of water.
CO2	Describe and design the various water treatment units, transmission and distribution of water.
	Illustrate the special water treatments and sequencing of treatment for various qualitiesOf surface & ground water.
	Understand different water supply appurtenances and principles of green building.
	TRANSPORTATION ENGINEERING I
	To understand the concept of super-elevation sight distance section of road in cutting and filling. To design flexible and rigid pavement as per IRC and quality control for WBM, BBM, and concrete pavements.
	To Design and plan airport, runways terminals buildings, hangers and aprons
	To apply different methods of tunneling in soft and hard rocks and Plan and layout for docks and ports.
	WATER RESOURCES ENGINEERING
CO1	Apply the knowledge of estimation of hydro meteorological parameters.
CO2	Design of efficient hydraulic structures.
CO3	To develop different methods of efficient irrigation and water conservation.
CO4	To develop the methods of consumptive use of surface water and groundwater.
	BUILDING PLANNING AND DESIGN
	To understand the concept of building planning principles.
	To impart basic concepts and various aspects of building planning and architectural compositions. To exhapse the shifts to also and decim complex building structures.
	To enhance the ability to plan and design complex building structures To provide prerequisite knowledge for the advanced courses in building design.
B.E. PART I SEM VII	
Course Name:-	DESIGN OF CONCRETE STRUCTURE I
CO1	Explain the properties of concrete, steel , behavior of RCC and Design philosophies. Singly and Doubly reinforced beam sections
CO2	Convey the concepts of structural design procedure
CO3	Design the individual members and hence building.
CO4	Analyze and design axially and Eccentrically loaded columns & Isolated rectangular footings.
	QUANTITY SURVEYING AND VALUATION The students are able to estimate the different components of the structure and learn the art and skill whereby a monetary value can be placed on the volume of work previously measured.
	The students are able to estimate the different components of the structure and learn the art and skill whereby a monetary value can be placed on the volume of work previously measured. The students develop awareness of those factors that affect the cost of construction work and to analyze the influences that effect change in these factors.
CO2	
	The students inculcate the habit of systematically recording all those statistics which are the stock in trade of the good estimator, construction techniques.
соз	The students inculcate the habit of systematically recording all those statistics which are the stock in trade of the good estimator, construction techniques. The students inculcate the habit of systematically recording all those statistics which are the stock in trade of the good valuator.
соз	
CO3	
CO3 CO4 Course Name:-	The students inculcate the habit of systematically recording all those statistics which are the stock in trade of the good valuator.
CO4 Course Name:- CO1	The students inculcate the habit of systematically recording all those statistics which are the stock in trade of the good valuator. PROJECT MANAGEMENT AND CONSTRUCTION EQUIPMENTS
CO3 CO4 Course Name:- CO1 CO2 CO3	The students inculcate the habit of systematically recording all those statistics which are the stock in trade of the good valuator. PROJECT MANAGEMENT AND CONSTRUCTION EQUIPMENTS Understand the importance of project management tools. Plan and Schedule the Project by using CPM, PERT and MSP Understand the working of various construction equipment's.
CO3 CO4 Course Name:- CO1 CO2	The students inculcate the habit of systematically recording all those statistics which are the stock in trade of the good valuator. PROJECT MANAGEMENT AND CONSTRUCTION EQUIPMENTS Understand the importance of project management tools. Plan and Schedule the Project by using CPM, PERT and MSP
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CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 Course Name:- CO1	The students inculcate the habit of systematically recording all those statistics which are the stock in trade of the good valuator. PROJECT MANAGEMENT AND CONSTRUCTION EQUIPMENTS Understand the importance of project management tools. Plan and Schedule the Project by using CPM, PERT and MSP Understand the working of various construction equipment's. Know the importance of Safety and Risk Management in Construction. DESIGN OF EARTHQUAKE RESISTING STRUCTURES Prepare mathematical model of structure.
CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO01 CO2 CO1 CO2	The students inculcate the habit of systematically recording all those statistics which are the stock in trade of the good valuator. PROJECT MANAGEMENT AND CONSTRUCTION EQUIPMENTS Understand the importance of project management tools. Plan and Schedule the Project by using CPM, PERT and MSP Understand the working of various construction equipment's. Know the importance of Safety and Risk Management in Construction. DESIGN OF EARTHQUAKE RESISTING STRUCTURES

CO4	Know the concept of modern technique.
Course Name:-	ADVANCED STRUCTURAL ANALYSIS
CO1	Know the concept of ILD applied for indeterminate structure.
	Apply appropriate solution techniques to the problems of beams curved in plan.
CO2	
CO3	Analyze portal frame by using different methods.
CO4	Interpret the output and limitations of different methods.
Course Name:-	REMOTE SENSING APPLICATIONS IN CIVIL ENGINEERING
CO1	Adopt the principles of physics of Electromagnetic radiation as applied to remote sensing.
CO2	Learns the interrelationship of civil, environmental and geological studies.
CO3	Formulate and apply remote sensing and GIS concepts to engineering problems.
	M.Tech Part-1 Sem-I
Course Name:-	THEORY OF ELASTICITY AND PLASTICITY
CO1	
	Understand concept of stress and strain at a point, Stress equilibrium and Strain compatibility and Analyse Stress and Strain at a point with various perspectives, etc. under in three dimensional state of stress.
CO2	Establish relation between stress and strain for various materials, Elastic constants, and reduce 3D problems to 2 D problems.
CO3	Formulate and Analyse stress concentration problems due to various complex situations.
CO4	Formulate and Analyse members subjected to Torsion using various classical approaches.
COS	Able to understand different post yielding behaviour of materials and Plasticity theories.
CO6	Able to understand various yield criteria, and concept of factor of safety in design of various structural members, concept of Viscoelastic and Viscoplastic materials.
Course Name:-	MATRIX METHODS OF STRUCTURAL ANALYSIS
CO1	Draw deflected shapes of various structures for different loading and boundary conditions.
CO2	Understand difference in force approach and displacement approach in structural analysis.
CO2	
	Analyze various plane structural systems using direct and generalized flexibility approach.
CO4	Analyze various plane structural systems using direct and generalized stiffness approach.
COS	Develop codes for computer based analysis of plane structures.
CO6	Understand effect of material non linearity and geometric non linearity on force displacement relation and stiffness matrix.
Course Name:-	STRUCTURAL DYNAMICS
CO1	Understand basics of response of structures to forced vibrations and free vibrations.
CO2	Analyse response of SDoF systems to general loading and understand various methods of evaluation of dynamic response.
CO3	Analyse response of structures to ground excitations, support excitations and torsional excitations.
CO4	Understand and Analyse structures for natural frequency and modal analysis.
CO5	
	Analyse response of structural system by numerical evaluation using various classical approaches.
CO6	Understand and implement finite element approach in structural dynamics.
Course Name:-	DESIGN OF BRIDGES
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Course Name:-	DESIGN OF BRIDGES Understand the preliminary concepts, development, various types of bridges and it's conceptual design
CO1	Understand the preliminary concepts, development, various types of bridges and it's conceptual design
CO1 CO2	Understand the preliminary concepts, development, various types of bridges and it's conceptual design Study various types of loadings coming on road and railway bridges.
CO1 CO2 CO3	Understand the preliminary concepts, development, various types of bridges and it's conceptual design Study various types of loadings coming on road and railway bridges. Study the behaviour of various types of bridges under different loadings.
CO1 CO2 CO3 CO4	Understand the preliminary concepts, development, various types of bridges and it's conceptual design Study various types of loadings coming on road and railway bridges. Study the behaviour of various types of bridges under different loadings. Design of slab decks of various types of RC and PSC bridges. Perform the design of substructure components like piers, abutments, wing walls and it's foundation.
CO1 CO2 CO3 CO4 CO5	Understand the preliminary concepts, development, various types of bridges and it's conceptual design Study various types of loadings coming on road and railway bridges. Study the behaviour of various types of bridges under different loadings. Design of slab decks of various types of RC and PSC bridges. Perform the design of substructure components like piers, abutments, wing walls and it's foundation. Study the provision and importance of joints provided in the structure.
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CO1 CO2 CO3 CO4 CO5 CO6	Understand the preliminary concepts, development, various types of bridges and it's conceptual design Study various types of loadings coming on road and railway bridges. Study the behaviour of various types of bridges under different loadings. Design of slab decks of various types of RC and PSC bridges. Perform the design of substructure components like piers, abutments, wing walls and it's foundation. Study the provision and importance of joints provided in the structure. Know the various construction techniques and practices adopted for different bridges and its impact on design.
CO1 CO2 CO3 CO4 CO5	Understand the preliminary concepts, development, various types of bridges and it's conceptual design Study various types of loadings coming on road and railway bridges. Study the behaviour of various types of bridges under different loadings. Design of slab decks of various types of RC and PSC bridges. Perform the design of substructure components like piers, abutments, wing walls and it's foundation. Study the provision and importance of joints provided in the structure.
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CO1 CO2 CO3 CO4 CO5 CO6 CO7 Course Name:-	Understand the preliminary concepts, development, various types of bridges and it's conceptual design Study various types of loadings coming on road and railway bridges. Study the behaviour of various types of bridges under different loadings. Design of slab decks of various types of Ex and PSC bridges. Perform the design of substructure components like piers, abutments, wing walls and it's foundation. Study the provision and importance of joints provided in the structure. Know the various construction techniques and practices adopted for different bridges and its impact on design. ADVANCED PRESTRESSED CONCRETE Understand the preliminary concept, terminologies and methodologies related to prestressed concrete. Analyse and design of the anchor blocks.
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CO1 CO2 CO3 CO4 CO5 CO6 CO7 Course Name:- CO1 CO2 CO3 CO4	Understand the preliminary concepts, development, various types of bridges and it's conceptual design Study various types of loadings coming on road and railway bridges. Study the behaviour of various types of bridges under different loadings. Design of slab decks of various types of RC and PSC bridges. Perform the design of substructure components like piers, abutments, wing walls and it's foundation. Study the provision and importance of joints provided in the structure. Know the various construction techniques and practices adopted for different bridges and its impact on design. ADVANCED PRESTRESSED CONCRETE Understand the preliminary concept, terminologies and methodologies related to prestressed concrete. Analyse and design of the anchor blocks. Analyse the PSC member for flexural, shear strength and deflection. Design the simple and indeterminate structures like continuous beams and portal frames.
CO1 CO2 CO3 CO4 CO5 CO6 CO7 Course Name:- CO1 CO2 CO3 CO4 CO5	Understand the preliminary concepts, development, various types of bridges and it's conceptual design Study various types of loadings coming on road and railway bridges. Study the behaviour of various types of Bridges under different loadings. Design of slab decks of various types of RC and PSC bridges. Perform the design of substructure components like piers, abutments, wing walls and it's foundation. Study the provision and importance of joints provided in the structure. Know the various construction techniques and practices adopted for different bridges and its impact on design. ADVANCED PRESTRESSED CONCRETE Understand the preliminary concept, terminologies and methodologies related to prestressed concrete. Analyse and design of the anchor blocks. Analyse and design of flexural, shear strength and deflection. Design the simple and indeterminate structures like continuous beams and portal frames. Analyse and design composite section and various slabs.
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CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO6 CO7 COC0 COCO COCO COCO COCO COCO COCO	Understand the preliminary concepts, development, various types of bridges and it's conceptual design Study various types of loadings coming on road and railway bridges. Study the behaviour of various types of bridges under different loadings. Design of slab desks of various types of RC and PSC bridges. Perform the design of substructure components like piers, abutments, wing walls and it's foundation. Study the provision and importance of joints provided in the structure. Know the various construction techniques and practices adopted for different bridges and its impact on design. ADVANCED PRESTRESSED CONCRETE Understand the preliminary concept, terminologies and methodologies related to prestressed concrete. Analyse and design of the anchor blocks. Analyse the PSC member for fleurard, shear strength and deflection. Design the simple and indeterminate structures like continuous beams and portal frames. Analyse and design composite section and various slabs. Design various special types of PSC structures like piers, poles, tanks, sleepers. Understand the causes of various defects in PSC structure and remedies for it. SY. 8 Tech Part 1 Sem III Find Lapice and inverse Lapice transform Solve Linear Differential Equations with constant coefficients for solving problems in Mechanical engineering fields
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CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO1 CO2 CO3 CO4 CO5 CO6 CO7 ELECTRICAL ENGINEERI CO1 CO2 CO3 CO4 CO5 CO6 CO7	Understand the preliminary concepts, development, various types of bridges and it's conceptual design Study various types of loadings coming on road and railway bridges. Study the behaviour of various types of bridges under different loadings. Design of slab decks of various types of RC and PSC bridges. Perform the design of slabstructure components like piers, sbutments, wing walls and it's foundation. Study the provision and importance of joins provided in the structure. Know the various construction techniques and practices adopted for different bridges and its impact on design. ADVANCED PRESTRESSED CONCRETE Understand the preliminary concept, terminologies and methodologies related to prestressed concrete. Analyze and design of the anchor blocks. Analyze and design of the anchor blocks. Analyze and design composite section and various slabs. Design various special types of PSC structure slike pieps, poles, tanks, sleepers. Understand the causes of various defects in PSC structure and remedies for it. Find Laplace and inverse Laplace transform Solve Linear Differential equations with constant coefficients for solving problems in Mechanical engineering fields Regressen periodic function as a Fourier series. Solve Differential equation by using variable separable form
CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO1 CO2 CO3 CO4 CO5 CO6 CO7 ELECTRICAL ENGINEERI CO1 CO1 CO2 CO3 CO4 CO5 CO6 CO7	Understand the preliminary concepts, development, various types of bridges and it's conceptual design Study various types of loadings coming on road and railway bridges. Study the behaviour of various types of bridges under different loadings. Design of slab decks of various types of RC and PSC bridges. Perform the design of substructure components like piers, abutments, wing walls and it's foundation. Study the provision and importance of joints provided in the structure. Know the various construction techniques and practices adopted for different bridges and its impact on design. ADVANCED PRESTRESSED CONCRETE Understand the preliminary concept, terminologies and methodologies related to prestressed concrete. Analyze and design of the archor blocks. Analyze the PSC member for flexural, shear strength and deflection. Design the simple and indeterminate structures like continuous beams and portal frames. Analyze and design composite section and various slabs. Design the simple and indeterminate structures like pipes, poles, tanks, sleepers. Understand the causes of various defects in PSC structure and remedies for it. SY. 8 Tech Part 1 Semill Find Laplace and inverse Laplace transform Solve Linear Differential Equations with constant coefficients for solving problems in Mechanical engineering fields Represent periodic function as a Fourier series. Solve partial efficiential equation by using variable separable form Solve Linear Differential equation by using variable separable form Solve Linear Differential equation by using variable separable form
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CO1 To empathize with importance of power quality in power system CO2 To evaluate Total Harmonic Distortion in Power System	CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO4 CO5 CO6 CO6 CO6 CO05 CO6 CO07 CO1 CO2 CO3 CO4 CO5 CO0 CO3 CO4 CO5 CO0	transition is Sequence Components and To Draw Sequence Network of Different Power System Components. Sequence Components and To Draw Sequence Network of Different Power System Components. Sequence Power flow and Network Model Formulation Spricture Need of Substation and Substation Luyout Control System -14. Design a costacle compensator or feetback compensator using root focus to meet transient response and steady state error specifications Seet the model of controller according to the types of the system Use Bode Plots do estign a gain to meet transient response specification for a given system and to estign a cascade compensator or feetback compensator using root focus to meet transient response and steady state error specifications. Seponse Plots do estign a gain to meet transient response specification for a given system and to estign a cascade compensator to meet both transient and steady state error specifications. Seponse an observe to estimates the states. Differentiate Network and steady state feedback controller to meet transient response specifications of given control system. Sepansa of Systems desertly the different types of the signals and system desertly the different types of the signals and system desertly the different types of the signals and system desertly the different types of the signals and system desertly the different types of the signals and system desertly the different types of the signals and system suring zero state response and zero input response. Sepansa Systems using 2. Transform, to properties and inverse transform. Discuss Fourier analysis of discrete signals. Concept of financial techniques for the public system system and different taxes. Concept of financial techniques for business management, Cost & Cost Control, Techniques and capital budgeting. Advanced Systems and Protection Segmenter the types of One current Protection. Seementer the types of One current Protection.
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CO4	To discover Mitigation of Voltage Sag and interruptions.
CO5	To discriminate different Harmonic Measurement Techniques.
CO6	To explicate need of Power Quality Monitoring.
Course Name:-	Computer Methods in Power Systems
Course Name:-	Understand presents a comprehensive coverage of graph theory.
CO2	Apply the students in getting basic idea of different computer methods in power systems
CO3	Investigate different Computer Solution Methods Using the Admittance Matrix
CO4	Evaluate Computer techniques for Power flow analysis and numerical techniques to solve load flow problems
COS	Understand different Simultaneous Faults
CO6	Analyze Simplifications using Two Component Method
Course Name:-	FACTS
CO1	Acquire the knowledge on flexible AC Transmission System, various FACTS controllers operation and its importance for FACTS controllers.
CO2	Evaluate dynamic behaviour of large interconnected networks
CO3	
	Analyze Optimizing networks with FACT devices
CO4	Design Compensators within realistic constraints
CO5	Identify and solves real network problems with FACTS controllers
M.Tech. I (Electrical En	gg.) SEM I
Course Name:-	POWER SYSTEM MODELING
CO1	Develop power system components modeling and analyze their performance
CO2	Develop modeling of synchronous machine and analyze its performance
CO3	Perform steady state and dynamic analysis on simulation models
CO4	Understand configuration and functioning of syndronous machine excitation system
COS	Develop excitation system components modeling and analyze their performance
CO6	
200	Understand and transmission line, load and reactive power compensator modeling
Course Name:-	ADVANCED POWER ELECTRONICS
CO1	Understand the behavior of power semiconductor devices operated as power switches.
CO2	analyze operation of various power converters
СО3	Understand advance power conversion techniques
CO4	Apply power conversion technology for exploring RES
CO5	Ability to design and test power electronic circuits in the laboratory
Course Name:-	MODERN CONTROL SYSTEM
CO1	
	Analyze dynamics of a linear system by State Space Representation.
CO2	Determine the stability of a linear system using pole-placement technique
CO3	Design state observers.
CO4	Analyze basics of Non-linear control system.
CO5	Determine the stability of Non-linear systems
CO6	Formulate and solve deterministic optimal control problems in terms of performance indices.
Course Name:-	RENEWABLE ENERGY SYSTEM
CO1	Understand current energy scenario and their impact on environment[K1 A1]
CO2	Understand the process of power generation by renewable energy sources (K1 A1)
соз	Understand configuration of various renewable energy systems (K1 A1)
CO4	
	Understand various forms of energy storage and their importance (K1 A1)
CO5	Analyze the performance of grid connected system.(K2 A2)
CO6	Understand the various standards and quality issues for grid integration.
Course Name:-	POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS
CO1	Provide knowledge about the stand alone and grid connected renewable energy systems.
CO2	Equip with required skills to derive the criteria for the design of power converters for renewable energy applications.
соз	Analyze and comprehend the various operating modes of wind electrical generators and solar energy systems.
CO4	
The second secon	
	Design different power converters namely AC to DC, DC to DC and AC to AC converters for renewable energy systems
COS	
COS	Design different power converters namely AC to DC, DC to DC and AC to AC converters for renewable energy systems Develop maximum power point tracking algorithms.
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COURSE Name:- CO1 CO2	Design different power converters namely AC to DC, DC to DC and AC to AC converters for renewable energy systems Develop maximum power point tracking algorithms. COMMUNICATION SKILLS Students are found to be confident while using English Engage in analysis of speeches or discourses and several articles
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COURSE Name:- CO1 CO2	Design different power converters namely AC to DC, DC to DC and AC to AC converters for renewable energy systems Develop maximum power point tracking algorithms. COMMUNICATION SKILLS Students are found to be confident while using English Engage in analysis of speeches or discourses and several articles
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COS Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 Course Name:- CO1 CO2 CO3	Design different power converters namely AC to DC, DC to DC and AC to AC converters for renewable energy systems Develop maximum power point tracking algorithms. COMMUNICATION SKILLS Students are found to be confident while using English Engage in analysis of speeches or discourses and several articles Identify and control anxiety while delivering speech Write appropriate communications(Academic/Business) Prepared to take the examinations like GRE/TOFEL/IELTS Identify and control the tone while speaking Develop the ability to plan and deliver the well-argued presentations P.G. LABORATORY -I Apply the knowledge to design the practical circuits for applications. Model and simulate different electrical and electroics systems Simulate and test the circuit performance for comparative study. M.Tech. II SEM III
COS Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 Course Name:- CO1 CO2 CO3 CO3 CO3 CO3 CO4 CO5 CO5 CO6 CO7 CO0	Design different power converters namely AC to DC, DC to DC and AC to AC converters for renewable energy systems Develop maximum power point tracking algorithms. COMMUNICATION SKILLS Students are found to be conflident while using English Engage in analysis of speeches or discourses and several articles Identify and control anxiety while delivering speech Write appropriate communications/Academic/Business) Prepared to take the examinations like GRE/TOFEL/IELTS Identify and control the tone while speaking Develop the ability to plan and deliver the well-argued presentations P.G. LABORATORY -I Apply the knowledge to design the practical circuits for applications. Model and simulate different electrical and electronics systems Simulate and test the circuit performance for comparative study. M.Tech. II SEM III PROJECT PHASE-I
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CO1 CO2 CO3	Solve higher order linear differential equation using appropriate techniques for modeling and analyzing electrical circuits.
CO3	Solve problems related to Fourier transform, Laplace transform and applications to Communication systems and Signal processing.
	Obtain Interpolating polynomials, numerically differentiate and integrate functions, numerical solutions of differential equations using single step and multi-step iterative methods used in modern scientific computing.
CO4	Perform vector differentiation and integration, analyze the vector fields and apply to Electromagnetic fields.
COS	Analyze conformal mappings, transformations and perform contour integration of complex functions in the study of electrostatics and signal processing.
Course Name:-	Analog Circuits
CO1	Understand the characteristics of IC and Op-Amp and identify the internal structure.
CO2	Derive and determine various performances based parameters and their significance for Op-Amp.
CO3	Comply and verify parameters after exciting IC by any stated method.
CO4	Analyze and identify the closed loop stability considerations and I/O limitations.
CO5	Analyze and identify linear and nonlinear applications of Op-Amp.
CO6	Understand and verify results (levels of V & I) with hardware implementation.
CO7	Implement hardwired circuit to test performance and application for what it is being designed.
CO8	Understand and apply the functionalities of PLL.
Course Name:-	Electronic Devices & Circuits
CO1	Comply and verify parameters after exciting devices by any stated method.
CO2	Implement circuit and test the performance.
CO3	Analyze small signal model of FET and MOSFET.
CO4	Explain behavior of FET at low frequency.
Course Name:-	Network Analysis
CO1	Apply knowledge of mathematics to solve numerical based on network simplification and it will be used to analyze the same.
CO2	Design passive filters and attenuators theoretically and practically. To apply knowledge for design of active filters as well as digital filters and even extend this to advance adaptive filters.
CO3	Identify issues related to transmission of signals, analyze different RLC networks.
CO4	Find technology recognition for the benefit of the society.
Course Name:-	Basic Human Rights
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CO1	Simply put, human rights education is all learning that develops the knowledge, skills, and values of human rights.
CO2	Strengthen the respect for human rights and fundamental freedoms.
CO3	Enable all persons to participate effectively in a free society,
	Learn about human rights principles, such as the universality, indivisibility, and interdependence of human rights.
CO4	
CO5	Learn about regional, national, state, and local law that reinforces international human rights law.
CO6	Learn and know about and being able to use global, regional, national, and local human rights instruments and mechanisms for the protection of human rights.
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Course Name:-	Signals & Systems
CO1	Perform different types of operations on CT and DT signals & compute the response of LTI systems.
CO2	Select appropriate sampling rate for discretization of CT signals.
CO3	Perform time and frequency domain analysis by using Fourier & Z-Transforms.
CO4	Realize the system using different structures.
	MICROCONTROLLERS
Course Name:-	
CO1	Understand difference between Microprocessor and Microcontroller
CO2	Understand the microcontroller's family and its architecture
CO3	Write an effective program for microcontrollers using assembly language
CO4	To design and implement interface between digital and analog interface to electronic devices and integrated circuits for real world
COS	Students will able to design small microcontroller based systems
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	FLETTRAMAGNETY FINGINEERING
Course Name:-	ELECTROMAGNETIC ENGINEERING
	ELECTROMAGNETIC ENGINEERING Solve the problems on Force, field intensity, Density and potentials for Electromagnetic Fields
Course Name:-	
Course Name:- CO1	Solve the problems on Force, field intensity, Density and potentials for Electromagnetic Fields Explain Maxwell's equations and wave equations of Electromagnetic waves
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Course Name:- CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO4 Course Name:- CO1 CO2 CO3 CO4 CO4 CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO4 CO05 CO4	Solve the problems on Force, field intensity, Density and potentials for Electromagnetic Fields Explain Maxwell's equations and wave equations of Electromagnetic waves Analyze Electromagnetic wave and transmission lines Recognize the need and ability to engage in lifelong learning in getting self employment VLSI Design Use VHDL for implementation of combinational and sequential logic as well as to simulate it. Design digital systems using structural style of modeling Design & develop different finite state machines for specific tasks such as Datapath (DF) and Control Unit (CU) of GPP Understand and demonstrate the programmable logic devices structures and testing techniques used in VLSI DIGITAL COMMUNICATION Solve problems based on probability theory Analyze the performance of various source coding techniques and Demonstrate data formats (tentify band pass modulation schemes and compute performance of these techniques. Explain need of synchronization and concept of optimum receiver and equalizer PROGRAMMING LAB –II Students will be understand variables, array, sub array & debugging MATIAB program. Students will be the touse loop statements to solving the problems. Students will write function files & able to open a data file in read, write mode. Students will suffer function files & able to open a data file in read, write mode.
Course Name:- C01 C02 C03 C04 C02 C03 C04 Course Name:- C01 C02 C03 C04	Solve the problems on Force, field intensity, Density and potentials for Electromagnetic Fields Explain Maxwell's equations and wave equations of Electromagnetic waves Analyze Electromagnetic wave and transmission lines Recognize the need and ability to engage in lifelong learning in getting self employment VLSI Design Use VHDL for implementation of combinational and sequential logic as well as to simulate it. Design digital systems using structural style of modeling Design & develop different finite state machines for specific tasks such as Datapath (DP) and Control Unit (CU) of GPP Understand and demonstrate the programmable logic devices structures and testing techniques used in VLSI DIGITAL COMMUNICATION Solve problems based on probability theory Analyze the performance of various source coding techniques and Demonstrate data formats (identify band pass modulation schemes and compute performance of these techniques. Explain need of synchronization and concept of optimum receiver and equalizer PROGRAMMINIC LAB—II Students will be understand variables, array, sub array & debugging MATLAB program. Students will be understand MATLAB graphics system. Students will write function files & able to open a data file in read, write mode. Students will understand MATLAB graphics system. Students will understand MATLAB graphics system.
Course Name:- CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO4 Course Name:- CO1 CO2 CO3 CO4 CO4 CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO4 CO05 CO4	Solve the problems on Force, field intensity, Density and potentials for Electromagnetic Fields Explain Maxwell's equations and wave equations of Electromagnetic waves Analyze Electromagnetic wave and transmission lines Recognize the need and ability to engage in lifelong learning in getting self employment VLSI Design Use VHDL for implementation of combinational and sequential logic as well as to simulate it. Design digital systems using structural style of modeling Design & develop different finite state machines for specific tasks such as Datapath (DF) and Control Unit (CU) of GPP Understand and demonstrate the programmable logic devices structures and testing techniques used in VLSI DIGITAL COMMUNICATION Solve problems based on probability theory Analyze the performance of various source coding techniques and Demonstrate data formats (tentify band pass modulation schemes and compute performance of these techniques. Explain need of synchronization and concept of optimum receiver and equalizer PROGRAMMING LAB –II Students will be understand variables, array, sub array & debugging MATIAB program. Students will be the touse loop statements to solving the problems. Students will write function files & able to open a data file in read, write mode. Students will suffer function files & able to open a data file in read, write mode.
Course Name:- CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO4 Course Name:- CO1 CO2 CO3 CO4 CO4 CO2 CO3 CO4 CO4 CO2 CO3 CO4 CO4 CO5 CO5 B.E. PART I SEM VIII	Solve the problems on Force, field intensity, Density and potentials for Electromagnetic Fields Explain Maxwelf's equations and wave equations of Electromagnetic waves Analyze Electromagnetic wave and transmission lines Recognize the need and ability to engage in lifelong learning in getting self employment VLSI Design Use VHDL for implementation of combinational and sequential logic as well as to simulate it. Design digital systems using structural style of modeling Use VHDL for implementation of combinational and sequential logic as well as to simulate it. Design digital systems using structural style of modeling Understand and demonstrate the programmable logic devices structures and testing techniques used in VLSI DIGITAL COMMUNICATION Solve problems based on probability theory Analyze the performance of virvious source coding techniques and Demonstrate data formats Identify band pass modulation schemes and compute performance of these techniques. Epplain need of synchronization and concept of optimum receiver and equalizer PROGRAMMING LAB—I Students will be understand variables, array, sub array & debugging MATIAB program. Students will be counted in the sale to use loop at data file in read, write mode. Students will model and simulate the system using Simulink.
Course Name:- CO1 CO2 CO3 CO4 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 B.E. PART I SEM VII Course Name:- CO1	Solve the problems on Force, field intensity, Density and potentials for Electromagnetic Fields Explain Maxwell's equations and wave equations of Electromagnetic waves Analyze Electromagnetic wave and transmission lines Recognize the need and ability to engage in lifelong learning in getting self employment VLSI besign Use VHDL for implementation of combinational and sequential logic as well as to simulate it. Design digital systems using structural style of modeling Design & develop different finite state machines for specific casks such as Datapath (IPP) and Control Unit (CU) of GPP Understand and demonstrate the programmable logic devices structures and testing techniques used in VLSI DIGITAL COMMUNICATION Solve problems based on probability theory Analyze the performance of various source coding techniques and Demonstrate data formats intensity band pass modulation schemes and compute performance of these techniques. Explain need of synchronization and concept of optimum receiver and equalitier PROGRAMMING LAS—II Students will be understand variables, array, sub array & debugging MATLAB program. Students will be understand MATLAB gards after in read, write mode. Students will be understand MATLAB gards and England will be system using Simulink. INFORMATION THEORY & CODING Determine information content, entropies and information rate.
Course Name:- CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO4 Course Name:- CO1 CO2 CO3 CO4 CO4 CO2 CO3 CO4 CO4 CO2 CO3 CO4 CO4 CO5 CO4 CO5 CO5 CO5 CO6 CO7	Solve the problems on Force, field intensity, Density and potentials for Electromagnetic Fields Explain Maswell's equations and wave equations of Electromagnetic waves Analyze Electromagnetic wave and transmission lines Recognize the need and ability to engage in lifelong learning in getting self employment Use VHDL for implementation of combinational and sequential logic as well as to simulate it. Design digital systems using structural style of modeling Design & develop different finite state machines for specific casks such as Datapath (DP) and Control Unit (CU) of GPP Understand and demonstrate the programmable logic devices structures and testing techniques used in VLS Disfrat CommunicaTion Solve problems based on probability theory Analyze the performance of various source coding techniques and Demonstrate data formats (identify land pass modelation schemes and compute performance of these techniques. Explain need of synchronization and concept of optimum receiver and equalitier PROGRAMMINICATION Solvents will be understand variables, array, sub array & debugging MATLAB program. Suckents will be understand or sub solvent set programs to solving the programs. Suckents will be understand or sub solvent set programs to solving the program. Suckents will be understand MATLAB graphics system. Suckents will model and simulate the system using Simulinik. PROGRAMMON THEORY & CODING Determine information content, entropies and information rate. Formulate the channel models mathematically and calculate channel capacity of various types of channels.
Course Name:- CO1 CO2 CO3 CO4 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 B.E. PART I SEM VII Course Name:- CO1	Solve the problems on Force, field intensity, Density and potentials for Electromagnetic Fields Explain Maxwell's equations and wave equations of Electromagnetic waves Analyze Electromagnetic wave and transmission lines Recognize the need and ability to engage in lifelong learning in getting self employment VLSI besign Use VHDL for implementation of combinational and sequential logic as well as to simulate it. Design digital systems using structural style of modeling Design & develop different finite state machines for specific casks such as Datapath (IPP) and Control Unit (CU) of GPP Understand and demonstrate the programmable logic devices structures and testing techniques used in VLSI DIGITAL COMMUNICATION Solve problems based on probability theory Analyze the performance of various source coding techniques and Demonstrate data formats intensity band pass modulation schemes and compute performance of these techniques. Explain need of synchronization and concept of optimum receiver and equalitier PROGRAMMING LAS—II Students will be understand variables, array, sub array & debugging MATLAB program. Students will be understand MATLAB gards after in read, write mode. Students will be understand MATLAB gards and England will be system using Simulink. INFORMATION THEORY & CODING Determine information content, entropies and information rate.
Course Name:- CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO4 Course Name:- CO1 CO2 CO3 CO4 CO4 CO2 CO3 CO4 CO4 CO2 CO3 CO4 CO4 CO5 CO4 CO5 CO5 CO5 CO6 CO7	Solve the problems on Force, field intensity, Density and potentials for Electromagnetic Fields Explain Maswell's equations and wave equations of Electromagnetic waves Analyze Electromagnetic wave and transmission lines Recognize the need and ability to engage in lifelong learning in getting self employment Use VHDL for implementation of combinational and sequential logic as well as to simulate it. Design digital systems using structural style of modeling Design & develop different finite state machines for specific casks such as Datapath (DP) and Control Unit (CU) of GPP Understand and demonstrate the programmable logic devices structures and testing techniques used in VLS Disfrat CommunicaTion Solve problems based on probability theory Analyze the performance of various source coding techniques and Demonstrate data formats (identify land pass modelation schemes and compute performance of these techniques. Explain need of synchronization and concept of optimum receiver and equalitier PROGRAMMINICATION Solvents will be understand variables, array, sub array & debugging MATLAB program. Suckents will be understand or sub solvent set programs to solving the programs. Suckents will be understand or sub solvent set programs to solving the program. Suckents will be understand MATLAB graphics system. Suckents will model and simulate the system using Simulinik. PROGRAMMON THEORY & CODING Determine information content, entropies and information rate. Formulate the channel models mathematically and calculate channel capacity of various types of channels.
Course Name:- C01 C02 C03 C04 C02 C03 C04 Course Name:- C01 C02 C03 C04 C05	Solve the problems on Force, field intensity, Density and potentials for Electromagnetic Fields Explain Maxwell's equations and wave equations of Electromagnetic waves Analyze Electromagnetic wave and transmission lines Recopite the need and ability to engage in lifelong learning in getting self employment VISI Design Use VIDI. For implementation of combinational and sequential logic as well as to simulate it. Design disal systems using structural skyle of modeling Design & develop different finite state machines for specific tasks such as Datapath (DP) and Control Unit (CU) of GPP Understand and demonstrate the programmable logic devices structures and testing techniques used in VISI DIGITAL COMMUNICATION Solve problems based on probability theory Analyze the performance of various source coding techniques and Demonstrate data formats identify band pass modulation schemes and compute of performance of these techniques. Explain need of synchronization and concept of optimum receiver and equalizer PROGRAMMING LAB—II Soldents will be able to use loop statements to solving the problems. Soldents will be able to use loop statements to solving the problems. Soldents will be able to use loop statements to solving the problems. Soldents will understand MATLAB graphic system. Soldents will understand MATLAB graphic system. Soldents will understand MATLAB graphic system. NORMATION THEORY & CODING Determine information content, entropies and information rate. Formulate the channel model matematically and calculate channel capacity of various types of channels. Design encoder and decoder for various coding techniques to analyze the error detecting and correcting capability of coding scheme
Course Name:- C01 C02 C03 C04 C02 C03 C04 Course Name:- C01 C02 C03 C04 CO05 Course Name:- C01 Course Name:- C01 Course Name:- C01	Solve the problems on Force, field intensity, Density and potentials for Electromagnetic Fields Explain Manwell's equations and wave equations of Electromagnetic waves Analyse Electromagnetic wave and transmission lines Recognite the need and ability to engage in Micloring learning in getting self employment VLS Design Use VIDIC for implementation of combinational and sequential logic as well as to simulate it. Design agliant lystems using structural style of modeling Use VIDIC for implementation of combinational and sequential logic as well as to simulate it. Design and deal systems using structural style of modeling Use VIDIC for implementation of combinational and sequential logic as well as to simulate it. Disparts a devolve different first state machines for specific tasks such as Datapath IDP] and Control Unit (CLI) of GPP Understand and demonstrate the programmable logic devices structures and testing techniques used in VLSI DIGITAL COMMUNICATION Solve problems based on probability theory Analyse the performance of various source coding techniques and Demonstrate data formats Solvents will be enderstand concept of optimum receiver and equalities PROGRAMMING LIB—II Sudersts will be understand variables, array, sub array & debugging MATILAB program. Solvents will be understand variables, array, sub array & debugging MATILAB program. Solvents will be able to use loop statements to solving the problems. Sudersts will understand MATILAB graphics system. Solvents will understand MATILAB gr
Course Name:- C01 C02 C03 C04 C02 C03 C04 Course Name:- C01 C02 C03 C04 C05	Solve the problems on Force, field intensity, Density and potentials for Electromagnetic Fields Explain Maxwell's equations and wave equations of Electromagnetic waves Analyze Electromagnetic wave and transmission lines Recopite the need and ability to engage in lifelory learning in getting self employment VISTO Bedgin Use VIND. For implementation of combinational and sequential logic as well as to simulate it. Design digatal systems using structural skyle of modeling Design & develop different finite state machines for specific tasks such as Datapath (DP) and Control Unit (CU) of GPP Understand and demonstrate the programmable logic devices structures and testing techniques used in VLSI DIGITAL COMMUNICATION Solve problems based on probability theory Analyze the performance of various source coding techniques and Demonstrate data formats identify band pass modulation schemes and compute performance of these techniques. Explain need of synchronization and concept of optimum receiver and equalitier **PROGRAMMING LAB**—II Solutions will be able to use loop attenders to solving the problems. Solutions will be able to use loop attenders to solving the problems. Solutions will understand MATLAB graphic system. Solutions will understand MATLAB graphic system. Solutions will understand MATLAB graphic system. Solutions will understand MATLAB graphic system size. INFORMATION THEORY & COONG Determine information content, entropies and information rate. Formulate the channel models matematically and calculate channel capacity of various types of channels. Design endeder and decoder for various coding techniques to analyze the error detecting and correcting capability of coding scheme
Course Name:- C01 C02 C03 C04 C02 C03 C04 Course Name:- C01 C02 C03 C04 CO05 Course Name:- C01 Course Name:- C01 Course Name:- C01	Solve the problems on Force, field intensity, Density and potentials for Electromagnetic Fields Explain Maswelfs equations and wave equations of Electromagnetic waves Analyse Electromagnetic wave and transmission lines Recognite the need and ability to engage in Micloring learning in getting self employment VLS Design Use VIDIC for implementation of combinational and sequential legic as well as to simulate it. Design algelian lystems using structural style of modeling Use VIDIC for implementation of combinational and sequential legic as well as to simulate it. Design algelian lystems using structural style of modeling Use VIDIC for implementation of combinational and sequential legic as well as to simulate it. Design also devoked inferred fries teat members for specific class such as Datapath (PP) and Control Unit (CII) of GPP Understand and demonstrate the programmable legic devices structures and testing techniques used in VLSI DIGITAL COMMUNICATION Solve problems based on probability theory Analyse the performance of various source coding techniques and Demonstrate data formats Solvents built be enderstand concept of optimum receiver and equalities PROGRAMMING LIB—II Students will be understand variables, array, sub array & debugging MATILAB program. Solvents will be understand variables, array, sub array & debugging MATILAB program. Solvents will be able to use loop statements to solving the problems. Solvents will understand MATILAB graphics system. Solvents will understand MATILAB gra
Course Name:- CO1 CO2 CO3 CO4 CO3 CO4 CO4 COURSE Name:- CO1 CO2 CO3 CO4 CO4 COURSE Name:- CO1 CO2 CO3 CO4 COURSE Name:- CO1 CO2 CO3 CO4 CO4 CO5 B.E. PART I SEM VII COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO5 CO4 CO5 CO6 CO7	Solve the problems on Force, field intentity, Density and potentials for Electromagnetic reads Explain Maxwell's equations and wave equations of Electromagnetic wave Analyse: Electromagnetic wave and transmission files Recognize the need and ability to engage in lifetong learning in getting self employment VLS Design Use VIDC. for implementation of combinational and sequential logic as well as to simulate it. Design deglar systems suring structural skyle of modeling Use VIDC. for implementation of combinational and sequential logic as well as to simulate it. Design deglar systems suring structural skyle of modeling Use VIDC. for implementation of combinational and sequential logic as well as to simulate it. Design deglar systems suring structural skyle of modeling Uselens & develop affire finite state mendion for specific class such as Datapath (PD) and Control Unit (CU) of CPP Uselens & develop affire finite state mendion for specific class such as Datapath (PD) and Control Unit (CU) of CPP Uselens and additions/strates and self-specific class such as Datapath (PD) and Control Unit (CU) of CPP Uselens based on probability intervory Analyse the performance of various source coding eteriniques and Demonstrate data formats Solvens between on probability intervory Analyse the performance of various source coding eteriniques and Demonstrate data formats Solvens will be understand various source coding eteriniques and equalitier PROGRAMMING LAB —I Solvens will be understand various source coding eteriniques and equalitier PROGRAMMING LAB —I Solvens will be understand various source coding eteriniques and equalitier Description of the finite of the company of the problems. Solvens will be understand various source coding eteriniques and equalitier of the company of the problems. Solvens will be understand various source eteriniques and information rate. Formatate the channel models mathematically and calculate channel capacity of various types of channels. Design encoder and detector for va
Course Name:- CO1 CO2 CO3 CO4 CO3 CO4 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO4 CO1 CO2 CO3 CO4 CO5 B.E. PART I SEM VII COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7	South the problems on Force, field intentity), Density and potentials for Electromagnetic reads Explain Maxwelf's equations and wave equations of Electromagnetic waves Analyse Electromagnetic wave and transmission lines Receptite the need and ability to engage in lifelorg learning in getting self employment V.S.Design Use VPDIC for implementation of combinational and sequential logic as well as to simulate it. Osign digital systems using structural style of modeling Use VPDIC for implementation of combinational and sequential logic as well as to simulate it. Osign digital systems using structural style of modeling Use VPDIC for implementation of combinational and sequential logic as well as to simulate it. Osign digital systems using structural style of modeling Use VPDIC for implementation of combinational and sequential logic as well as to simulate it. Osign a develop different finite state manchines for specific tasks such as Distagant (IPP) and Control Unit (ICI) of GPP Usedratand and demonstrate the programmable logic devices structures and testing techniques used in VLS OSIGNAL COMMUNICATION OSIGNAL COMMUNICATI

CO4	Demonstrate scaling of execution speed using MAM and PLL, Saving device power
CO5	Student should be able to design small applications of GPIO, Timers, PWM, Real time clock, Watchdog using embedded C
CO6	Design Embedded system applications using RTOS
Course Name:-	COMPUTER NETWORK
CO1	State the evolution of computer network, classifies different types of computer network
CO2	Design ,implement, and analyze simple computer network
CO3	Identify,formulate and solve network engineering problems .
CO4	Understanding of basic network security
Course Name:-	IMAGE PROCESSING
CO1	Apply Principles and techniques of digital image processing in applications related to digital imaging system design and analysis.
CO2	Analyze and implement image processing algorithms.
CO3	Hands on experience in using software tools for processing digital Images
Course Name:-	SATELLITE COMMUNICATION
CO1	Understand basic concepts of satellite communication.
CO2	Understand orbital mechanics, launch vehicles and satellite subsystems.
CO3	Calculate satellite link budget.
CO4	Define V-SAT system.
CO5	Understand satellite navigation and GPS
	M.Tech Part-I Sem-I
Course Name:-	Computational Methods
CO1	Learner will be able to design programs which numerically compute derivatives and integrals of functions which model physical systems
CO2	Learner will be able to design programs incorporating loops in Matlab and C++ which numerically solve a plurality of problems using different methods
CO3	Learner will be able to design programs incorporating loops in Mattab and C++ which numerically solve a plurality of differential equations and integral equations
CO4	Learner will be able to solve Integration and Integral Equations
CO5	Learner will be able to solve ODE
CO6	Learner will be able to solve Partial Differential Equation
C N	Microelectronics
Course Name:-	mit detections
CO1	Learner will be able to discuss MOS structure in terms of different parameters
CO2	Learner will be able to express different CMOS technologies
CO3	Learner will get knowledge of design rules for the CMOS design
CO4	Learner will be able to understand how devices and integrated circuits are fabricated and describe discuss modern trends in the microelectronics industry
COS	
	Learner will be able to determine the frequency range of simple electronic circuits and understand the high frequency limitations of BJTs and MOSFETs
CO6	Learner will be able to design simple devices and circuits to meet stated operating specifications
Course Name:-	VLSI System Design
Course Name:-	VLSI System Design
CO1	Learner will be able to understand the concepts of and electrical properties of MOS technologies
CO1 CO2	Learner will be able to understand the concepts of and electrical properties of MOS technologies Learner will be able to understand different types layout designing tools and floor planning methods used in chip design
CO1	Learner will be able to understand the concepts of and electrical properties of MOS technologies
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CO1 CO2 CO3	Learner will be able to understand the concepts of and electrical properties of MOS technologies Learner will be able to understand different types layout designing tools and floor planning methods used in chip design Learner will be able to design layout using simple gates
CO1 CO2 CO3 CO4	Learner will be able to understand the concepts of and electrical properties of MOS technologies Learner will be able to understand different types layout designing tools and floor planning methods used in chip design Learner will be able to design layout using simple gates Learner will be able to design combinational logic networks and sequential systems
CO1 CO2 CO3 CO4 CO5	Learner will be able to understand the concepts of and electrical properties of MOS technologies Learner will be able to understand different types layout designing tools and floor planning methods used in chip design Learner will be able to design layout using simple gates Learner will be able to design combinational logic networks and sequential systems Learner will be able to understand CAD algorithms used in chip design
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CO1 CO2 CO3 CO4 CO5 CO6 Course Name:- CO1 CO2 CO3 CO4 CO5	Learner will be able to understand the concepts of and electrical properties of MOS technologies Learner will be able to understand different types layout designing tools and floor planning methods used in chip design Learner will be able to design layout using simple gates Learner will be able to design combinational logic networks and sequential systems Learner will be able to understand CAD algorithms used in chip design Learner will be able to understand CAD algorithms used in chip design Learner will be able to analyse various CAD tools for Layout synthesis and Analysis Artificial neural networks and applications: Elective-I Learner will be able to articulate analogy of human neural network for understanding of artificial learning algorithms. Learner will be able to analyze radial basis function network. Learner will be able to analyze neural network architecture & basic learning algorithms. Learner will be able to understand mathematical modeling of neural networks. Learner will be able to understand mathematical modeling of neural networks.
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CO3 Implement software and / or hardware model of proposed work	
CO3 Implement software and / or hardware model of proposed work	
	-
CO2 Student understand and Exhibits different phases of project Development.	
CO1 To make student aware of recent trends in Electronics and Telecommunication	

CO1	Use the different commands, functions required for programming in MATIAB.
CO2	Calculate and perform various operations using MATLAB.
соз	Analyze and simulate the various systems.
B.E. PART I SEM VII	
Course Name:-	Computer Communication Networks
CO1	Students will be able to Explain different types of networks and network topologies
CO2	Students will be able to describe use of different network devices.
CO3	Students will be able to describe different layers in reference model.
CO4	Students will be able to Explain TCP/IP protocol and other networking protocols.
Course Name:-	Embedded Systems
CO1	Students will be able to explain the architectural details of ARM processors.
CO2	Students will be able to write assembly language codes for programming the embedded processors.
соз	Students will be able to demonstrate some embedded circuit designs using appropriate communication standard.
CO4	Students will be able to use the knowledge of embedded processors & RTOS for building real life projects.
Course Name:-	Satellite Communication (Elective -I)
CO1	Students will be able to explain the basic Orbital mechanics for Satellite communication and the satellite systems.
CO2	Students will be able to design the satellite links and describe the VSAT system in detail.
CO3	Students will be able to describe the multiple access system and also LEO and Non-Geostationary satellite system.
CO4	Students will be able to apply the knowledge of direct broadcast satellite TV & radio also the satellite navigation & the GPS.
Course Name:-	Seminar And Project
CO1	Students will be able to explain the recent trends in electronics & telecommunication
CO2	Students will be able to improve communication skills
CO3	Students will be able to apply different phases of project development.
	Students will be able to demonstrate soft skills like working in team, documentation and presentation.
CO4	JAUGERIA WITH DE BUILE OF VERTILANDIS INCE WORKING IN LEBIT, OUGLITICITATION AND JPIESERIGHOOD.
Course Name:-	Microwave Engineering
CO1	Students will be able to differentiate Rectangular & Circular waveguide.
CO2	Students will learn the operational characteristics of microwave components & devices through experimentation with them.
соз	Students will be able to determine circuit properties of passive/active microwave devices.
CO4	Students will be able to perform a variety of microwave measurements.
Course Name:-	RF & Microwave Engineering
CO1	Explain the different types modes propagation in waveguides
	Explain the uniterest types modes propagation in waveguides
	Colorab No. common de Arroya de Company de C
CO2	Select the appropriate component for various applications.
соз	Measure the various microwave parameters.
	Measure the various microwave parameters. Explain the different microwave Hazards.
соз	Measure the various microwave parameters.
CO3	Measure the various microwave parameters. Explain the different microwave Hazards.
CO3	Measure the various microwave parameters. Explain the different microwave Hazards.
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See 11	CO1	Learner will be able to analyze the time and frequency response of discrete time system.
Section of the control of the contro	CO2	Learner will be able to design digital filters for various application .
Section of the control of the contro	CO3	Learner will be able to design FIR and IIR filters for various analizations
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Come Manual William of the delice and any account of foliace above motiva friends to account of foreign and account of foreign acc	CO5	Learner will be able to understand signal representation in terms of dimension, orthogonality etc.
The control of the co	CO6	Learner will be able to analyze least square method for power spectrum estimation
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Section Process Proc		
Section Process Proc	CO1	Parameter will be able to make a concept of horiz cellular makila out to
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Signature of the state sense and each state of extension and each state of extension of extensio	CO4	Learner will be able to demonstrate the multiple access techniques.
Tests Name The Service of the Service	CO5	Learner will be able to analyze diversity in multipath channels
Tests Name The Service of the Service	CO6	Learner will be able to understand the various standards involve in evolution of communication system
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reason of the control	Course Name:-	UPITICAL FIBER CUMMUNICATION
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Commerce Testing of the content	CO1	Learner will be able to recognize and classify the structures of Optical fiber and types.
Common C	CO2	Learner will be able to demonstrate electromagnetic and mathematical analysis of light wave propagation.
Common C	CO3	Learner will be able to analyze fabrication techniques of different optical fibers.
Common C		
See that the section of the section to transport and trans		
Service Management of the Service Management for formation of processor of effects shared communitation study business and for the Service Management of Servi		
Letter will be able to implement the fundamental principles of efficient houbers communication to belong the communication or belong the communication to belong the communication or belong to the communication or communication and communication or communication and communication or communication and communication or communication and communication or communication	CO6	Learner will be able to interpret working of Fiber based devices.
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M Trob Parce S Sees Course Name: Project Super-1 Course Name: On make student aware of econt trends in Extrons and Telecommunication Course Super-1 Course Name: On make student aware of econt trends in Extrons and Telecommunication In project Super-1 Course Name: On the project Super-1 A T. & Trob Parce Same: A T. & Trob Parce Same: On the project Super-1 A T. & Trob Parce Same: On the project Super-1 Course Name: C	CO5	Learner will be able to become more effective confident speakers and deliver persuasive presentations
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CO4 B.E. PART I SEM VII Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO6 CO7	Project Management To describe fundamental concept of project management To explain different knowledge areas To identify processes in the knowledge areas and there inter dependencies To identify processes in the knowledge areas and there inter dependencies To identify documents required for actual projects and describe the time needed to successfully complete a project To know commonly used tools and techniques for project management Mobile Computing To Analyze the specialized MAC describing the performance of wireless transmission. To Solve security issues of Telecommunications systems using GSM. To Understand and analyze Mobile IP, DNCP and Improvement in Classical TCP. Advanced Database System Student should be able to realize query optimization and cost estimation. Differentiate database system by enumerating the features provided by database systems and describe each in both function and benefit. Understand and analyze the concept of data warehousing. Demonstrate the concept of data warehousing. Internet of Things To Understand basic knowledge of RFID, sensor and GPS technologies To Inderstand basic knowledge of RFID, sensor and GPS technologies To be familiar with internet of Things Technology
CO4 B.E. PART I SEM VII Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO4 CO05 CO4 CO07 CO07 CO08 CO08 CO09 CO09 CO09 CO09 CO09 CO09 CO09 CO09	Project Management To describe fundamental concept of project management To explain different knowledge areas To identify processes in the knowledge areas and there inter dependencies To identify processes in the knowledge areas and there inter dependencies To identify socuments required for actual projects and describe the time needed to successfully complete a project To know commonly used tools and techniques for project management Mobile Computing To Analyze the specialized MAC describing the performance of wireless transmission. To Solve security issues of Telecommunications systems using GSM. To Understand and analyze Mobile IP, DHCP and improvement in Classical TCP. Advanced Database System Student should be able to realize query optimization and cost estimation. Differentiate database systems by enumerating the features provided by database systems and describe each in both function and benefit. Understand and analyze the concept of data warehousing. Demonstrate the concept of data mining and web mining Internet of Things To Understand basic knowledge of RFID, sensor and GPS technologies
CO4 B.E. PART I SEM VII Course Name:- CO2 CO3 CO4 CO5 Course Name:- CO2 CO3 CO4 CO2 CO3 CO4 CO2 CO3 CO4 CO2 CO3 CO4 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO4 CO1 CO2 CO3 CO4 CO4 CO5 CO4 CO5 CO4 CO5 CO5 CO5 CO5 CO6 CO6 CO7	Project Management To describe fundamental concept of project management To explain different knowledge areas To identify processes in the knowledge areas and there later dependencies To identify processes in the knowledge areas and there later dependencies To identify focuments required for actual projects and describe the time needed to successfully complete a project To know commonly used tools and techniques for project management Mobile Computing To Analyse the specialized MAC describing the performance of wireless transmission. To Solve security issues of Telecommunications systems using GSM. To Understand and analyze Mobile IP, DHCP and improvement in Classical TCP. Advanced Database System Suddent schoold be able to realize query optimization and cost estimation. Differentiate database systems by enumerating the features provided by database systems and describe each in both function and benefit. Understand and analyze the concept of data warehousing. Demonstrate the concept of data mining and web mining Internet of Things
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B.E. PART I SEM VII Course Name:-	Project Management To describe fundamental concept of project management
B.E. PART I SEM VII Course Name:-	Project Management
B.E. PART I SEM VII	
CO4	
СО3	Students will get the knowledge of AWT, Swing and Event handling.
	Students are able to implement I/O and Exception handling.
CO2	Students are able to handle OOP's concepts.
CO1	Student will be able to implement command line arguments, classes
Course Name:-	Application Development Tool -I
CO4	To provide Knowledge about design methodology
CO3	Identify and formulate problems in software development.
CO2	Design static and dynamic modelling on given problem statement.
CO1	Possess an ability to practically apply knowledge of object oriented analysis with clear emphasis on UML.
Course Name:-	Object oriented modeling and design
Course North	Object oriented modeline and during
	is more specificative aditione.
CO6	To know various open source software.
CO5	To understand the basics of system programming like editors, compiler, assembler, linker, loader & interpreter.
CO4	To understand the various phases of compiler and compare its working with assembler
CO3	To describe the various concept of assemblers and microprocessors.
CO2	To understand language processing activities & differentiate between them
CO1	To explain various language processing activities
Course Name:-	System Programming
CO9	Differentiate between P and NP problems.
CO8	Describe the Backtracking paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm. Synthesize Backtracking algorithms, and analyze them.
CO7	Explain the major graph algorithms and their analyses. Employ graphs to model engineering problems, when appropriate. Synthesize new graph algorithms and algorithms that employ graph computations as key components, and analyze them.
CO6	Describe the greedy paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm. Synthesize greedy algorithms, and analyze them.
COS	Describe the dynamic-programming paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm. Synthesize dynamic-programming algorithms, and analyze them.
CO4	Derive and solve recurrences describing the performance of divide-and-conquer algorithms.
CO3	Describe the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm. Synthesize divide-and-conquer algorithms.
CO2	Analyze worst-case running times of algorithms using asymptotic analysis.
CO1	Argue the correctness of algorithms using inductive proofs and invariants.
Course Name:-	Computer Algorithms
COS	To Work with database connectivity using JDBC-ODBC
CO4	To Apply normalization techniques on given database.
CO3	To Use Standard Query Language and It's various versions.
CO2	To Understand central ideas of database administration.
CO1	To Draw the entity relationship diagram for a problem.
Course Name:-	Database Engineering
CO5	Understand and learn input output devices & their management.
CO4	Understand and learn memory management concept.
CO3	Understand and learn process and Thread scheduling, inter process synchronization and communication.
CO2	Understand and learn process, threads and their management.
CO1	Understand and learn operating systems, types and its use.
Course Name:-	OPERATING SYSTEM-I
T.E PART I SEM V	
CO8	Make students aware of their responsibilities towards the nation.
CO7	Realize the philosophical and cultural basis and historical perspectives of human rights.
	Understand the importance of groups and communities in the society,
CO6	Be aware of rights as Indian citizen.
CO5 CO6	Understand being able to use global, regional, national, and local human rights instruments and mechanisms for the protection of human rights.
CO4 CO5 CO6	Know about regional, national, state, and local law that reinforces international human rights law.
CO5 CO6	

Course Name:-	
The second secon	Web Technology-I
CO1	Students will able to understand differences in desktop and web applications using different techniques in java
CO2	Students will able to understand xml technologies , parsing & validation techniques
CO3	Students will able to understand emerging web technologies concepts & tools
CO4	Student will able to understand different java techniques like JSP and SERVLET to develop web application
CO5	Student will able to develop real life web applications using advanced java technology, & XML technology.
Course Name:-	Mobile Application Development
CO1	Study about the android architecture and the tools for developing android Applications.
CO2	Create an android application.
соз	Learn about the user interfaces used in android applications.
CO4	Learn about deployment of android application.
INSTRUMENTATION EN	GINEERING
	S.Y. 8 Tech Part-I Sem-III
Course Name:-	Engineering Mathematics-III
CO1	Comprehend the fundamental knowledge of Laplace Transform.
CO2	Apply the properties of Laplace and inverse Laplace Transform to solve simultaneous linear differential equation with constant coefficient.
соз	Understand the definition and properties of Fourier Transfor
CO4	Solve Partial differential equation and it's applications.
COS	Evaluate complex differentiation useful in real world problem.
CO6	Find integration of complex function by using Cauchy integral formula.
	Sensor & Transducer Sensor & Transducer
Course Name:-	To exposes the students to various sensors and transducers for measuring mechanical quantities.
CO2	To understand the specifications of sensors and transducers.
CO2	
CO3	To learn the basic conditioning circuits for various sensors and transducers. To introduce advances in sensor technology.
Course Name:-	Network Analysis & Synthesis To review basic components of electric network.
CO2	To design and develop network equations and their solutions.
CO3	To apply Laplace theorem for electric network analyses To apply a Coloreit To apply a Color
	To analyze AC circuit.
Course Name:-	Analog Electronics
CO1	Analyze transistor circuit using h parameter model.
CO2	Design and analyze different op-amp circuits for various applications.
CO3	Describe characteristics of various power devices and power converters.
Course Name:-	Elective-I (Production Process & Metrology)
CO1	To familiarized with different production process and metrology
CO2	To study different production process.
CO3	To understand metrology of different materials
Course Name:-	Basic Human Rights
CO1	To study concept of time value of money
CO2	To study about demand in detail
CO3	To understand Meaning of Production and factors of production,
CO4	To understand dif. Concept about market
Course Name:-	Applied Biology
CO1	
	To introduce recent trends in biology viz. genetic& tissue engineering, stem cell engineering, bio and nanotechnology etc. with the objective of appreciating engineering principles in biological systems
-01	To introduce recent trends in biology viz. genetic& tissue engineering, stem cell engineering, bio and nanotechnology etc. with the objective of appreciating engineering principles in biological systems
	To introduce recent trends in biology viz. genetic& tissue engineering, stem cell engineering, bio and nanotechnology etc. with the objective of appreciating engineering principles in biological systems T.E. Part-I Sem-V
Course Name:-	
	T.E. Part-I Sem-V
Course Name:-	T.E. Part-I Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers.
Course Name:-	T.E. Part-I Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers. Student will demonstrate Choppers and Inverters.
Course Name:- CO1	T.E. Part-I Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers.
Course Name:- CO1 CO2 CO3	T.E. Part-I Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers. Student will demonstrate Choppers and Inverters.
Course Name:- CO1 CO2 CO3 CO4	T.E. Part.1 Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers. Student will demonstrate Choppers and Inverters. Student will able to design DC motor and AC motor control scheme.
Course Name:- CO1 CO2 CO3 CO4	T.E. Part.1 Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers. Student will demonstrate Choppers and Inverters. Student will able to design DC motor and AC motor control scheme.
Course Name:- CO1 CO2 CO3 CO4 CO5	T.E. Part J Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers. Student will able to design DC motor and AC motor control scheme. Student will able to analyze cycloconverters.
Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:-	T.E. Part J Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers. Student will able to design DC motor and AC motor control scheme. Student will able to analyze cycloconverters. Process Control
Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1	T.E. Part-I Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers. Student will able to explain phase and inverters. Student will able to design DC motor and AC motor control scheme. Student will able to analyze cycloconverters. Process Control Student will able to describe different process characteristics.
Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2	T.E. Part-1 Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers. Student will able to design DC motor and AC motor control scheme. Student will able to analyze cycloconverters. Process Control Student will able to describe different process characteristics. Student will able to describe different process characteristics. Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to despin DC motor and AC motor control scheme. Student will able to analyze cycloconverters.
Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3	T.E. Part-I Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rettifiers. Student will able to explain phase controlled rettifiers. Student will able to design DC motor and AC motor control scheme. Student will able to analyze cycloconverters. Process Control Student will able to describe different process characteristics. Student will able to explain PID controller. Student will able to explain PID controller.
Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4	T.E. Part-I Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rettifiers. Student will able to explain DC motor and AC motor control scheme. Student will able to analyze cycloconverters. Process Control Student will able to describe different process characteristics. Student will able to explain PID controller.
Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4	T.E. Part-I Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers. Student will able to explain poor of the motor ontrol scheme. Student will able to analyze cycloconverters. Process Control Student will able to describe different process characteristics. Student will able to explain PID controller.
Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5	T.E. Part-I Sem-V Power Electronics Student will able to escribe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers. Student will able to design DC motor and AC motor control scheme. Student will able to design DC motor and AC motor control scheme. Student will able to analyze cycloconverters. Process Control Student will able to describe different process characteristics. Student will able to explain PID controller. Student will able to evaluate PID tuning methods Student will able to elscribe control valve. Student will able to describe control valve.
Course Name:- C01 C02 C03 C04 C05 Course Name:- C01 C02 C03 C04 C05 Course Name:- C05 Course Name:- C05	T.E. Part J Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers. Student will able to design DC motor and AC motor control scheme. Student will able to analyze cycloconverters. Process Control Student will able to explain plD controller. Student will able to explain plD controller. Student will able to explain plD controller scheme. Student will able to explain plD controller scheme. Student will able to explain plD controller scheme. Student will able to explain plD controller. Student will able to explain plD controller porters scharacteristics. Student will able to explain plD controller porters scharacteristics. Student will able to explain plD controller porters scharacteristics. Student will able to explain plD controller. Student will able to explain plD controller porters scharacteristics. Student will able to explain plD controller porters scharacteristics.
Course Name:- C01 C02 C03 C04 C05 Course Name:- C01 C02 C03 C04 C05 Course Name:- C04 C05 Course Name:- C04 C05	T.E. Part-I Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers. Student will able to explain phase controlled rectifiers. Student will able to design Dc motor and AC motor control scheme. Student will able to analyze cycloconverters. Student will able to analyze cycloconverters. Process Control Student will able to describe different process characteristics. Student will able to explain PID controller. Student will able to explain PID controller will with able to explain PID controller. Student will able to explain PID controller will will able to explain PID control system. Student will able to describe control valve. Biomedical Instrumentation Students will able to describe human anatomy & physiological systems.
Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5	T.E. Part-I Sem-V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers. Student will able to design DC motor and AC motor control scheme. Student will able to design DC motor and AC motor control scheme. Student will able to analyze cycloconverters. Process Control Student will able to describe different process characteristics. Student will able to explain pID controller. Student will able to describe unitivariable control system. Student will able to describe offerent process characteristics. Student will able to describe offerent process characteristics. Student will able to explain pid control system. Student will able to describe ontrol valve. Student will able to describe ontrol valve. Student will able to describe human anatomy & physiological systems. Students will able to describe human anatomy & physiological systems. Students will able to distinguish recording and monitoring instruments.
Course Name:- C01 C02 C03 C04 C05 Course Name:- C01 C02 C03 C04 C05 Course Name:- C01 C02 C03 C04 C05 Course Name:- C01 C05 Course Name:- C01 C02 C03 C04 C05	T.E. Part J Sem V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to despin phase controlled rectifiers. Student will able to design DC motor and AC motor control scheme. Student will able to design DC motor and AC motor control scheme. Student will able to analyze cycloconverters. Process Control Student will able to describe different process characteristics. Student will able to escribe different process characteristics. Student will able to evaluate PID tuning methods Student will able to evaluate PID tuning methods Student will able to describe control valve. Student will able to describe control valve. Student will able to describe control valve. Student will able to describe control valve. Student will able to describe control valve. Student will able to describe human anatomy & physiological systems. Students will able to distinguish recording and monitoring instruments. Students will able to distinguish recording and monitoring instruments.
Course Name:- CO1 CO2 CO3 CO4 CO5 CO2 CO3 CO4 CO5 CO2 CO3 CO4 CO5	T.E. Part 1 Sem V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to design DC motor and AC motor control scheme. Student will able to design DC motor and AC motor control scheme. Student will able to design DC motor and AC motor control scheme. Process Control Student will able to describe different process characteristics. Student will able to describe different process characteristics. Student will able to evaluate PID tuning methods Student will able to describe different process characteristics. Student will able to describe control valve. Students will able to distribugish recording and monitoring instruments. Students will able to distribugish recording and monitoring instruments. Students will able to design of bio potential amplifier. Students will able to design of bio potential amplifier.
Course Name:- CO1 CO2 CO3 CO4 CO5 CO2 CO3 CO4 CO5 CO2 CO3 CO4 CO5	T.E. Part 1 Sem V Power Electronics Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to design DC motor and AC motor control scheme. Student will able to design DC motor and AC motor control scheme. Student will able to design DC motor and AC motor control scheme. Process Control Student will able to describe different process characteristics. Student will able to describe different process characteristics. Student will able to evaluate PID tuning methods Student will able to describe different process characteristics. Student will able to describe control valve. Students will able to distribugish recording and monitoring instruments. Students will able to distribugish recording and monitoring instruments. Students will able to design of bio potential amplifier. Students will able to design of bio potential amplifier.
Course Name:- CO1 CO2 CO3 CO4 CO5 CO07 CO2 CO3 CO4 CO5 CO07 CO4 CO5 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	T.E. Part 1 Sem.V Power Electronics Student will able to explaip phase controlled rectifiers. Student will able to explaip phase controlled rectifiers. Student will able to explaip phase controlled rectifiers. Student will able to design OE motor and AC motor control scheme. Student will able to analyze cydoconwerters. Process Control Student will able to design OE motor and AC motor control scheme. Student will able to design OE motor and AC motor control scheme. Student will able to design OE motor and AC motor control scheme. Student will able to design OE motor and AC motor control scheme. Student will able to describe different process characteristics. Student will able to describe different process characteristics. Student will able to evaluate PID tuning methods Student will able to evaluate PID tuning methods Student will able to evaluate PID tuning methods Student will able to describe control valve. Biomedical instrumentation Students will able to describe human anatomy & physiological systems. Students will able to destribe human anatomy & physiological systems. Students will able to distinguish recording and monitoring instruments. Students will able to distinguish recording and monitoring instruments. Students will able to distinguish recording and monitoring instruments. Students will able to collect sifety & recent development in biomedical field.
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Course Name:- CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5	T.E. Part i Sem-V Student will able to describe power SCR, MOSFET, IGBT, Diac, Triac. Student will able to explain phase controlled rectifiers. Student will able to design DC motor and AC moor control scheme. Student will able to design DC motor and AC moor control scheme. Student will able to design DC motor and AC moor control scheme. Student will able to describe different process characteristics. Student will able to explain PID controller. Student will able to describe control valve. Student will able to describe control valve. Student will able to describe busina mantomy & physiological systems. Students will able to describe human anatomy & physiological systems. Students will able to describe human anatomy & physiological systems. Students will able to describe human anatomy & physiological systems. Students will able to design of bio potential amplifier. Students will able to colleging of bio potential amplifier. Students will able to colleging of bio potential amplifier. Students will able to colleging of bio potential amplifier. Students will able to colleging of bio potential amplifier. Students will able to colleging of bio potential amplifier. Students will able to colleging of bio potential amplifier. Students will able to colleging and monitoring instruments. Students will able to colleging of bio potential amplifier. Students will able to colleging of bio potential amplifier. Students will able to colleging of bio potential amplifier. Students will able to colleging of bio potential amplifier. Students will able to colleging of bio potential amplifier.
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Course Name:- C01 C02 C03 C04 C05 C01 C02 C03 C04 C05 C04 C05 C04 C05 Course Name:- C01 C02 C03 C04 C05 Course Name:- C01	T.E. Part 1 Sem-Y Student will able to describe power SCR, MOSFER, IGBT, Diac, Triac. Student will able to escribe power SCR, MOSFER, IGBT, Diac, Triac. Student will able to escribe power SCR, MOSFER, IGBT, Diac, Triac. Student will able to escribe power SCR, MOSFER, IGBT, Diac, Triac. Student will able to escribe power SCR, MOSFER, IGBT, Diac, Triac. Student will able to escribe power SCR, MOSFER, IGBT, Diac, Triac. Student will able to escribe power SCR, MOSFER, IGBT, Diac, Triac. Student will able to escribe in Control and AC motor control steme. Student will able to escribe different process characteristics. Student will able to escribe different process characteristics. Student will able to escribe different process characteristics. Student will able to evaluate PD tuning methods Student will able to evaluate PD tuning methods Student will able to evaluate PD tuning methods Student will able to describe control valve. Student will able to describe human anatomy & physiological systems. Student will able to describe human anatomy & physiological systems. Student will able to describe human extraments used in clinic. Student will able to describe human extraments used in clinic. Student will able to collect safety & recent development in biomedical field. Altomatic Control System Student will able to describe basic components of feetback control system. Student will able to describe has ic components of feetback control system. Student will able to describe basic components of feetback control system. Student will able to describe basic components of feetback control system.
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CO4	
	Student will develop interfacing of protocols with microcontroller.
B.E. PART I SEM VII	
Course Name:-	Virtual Instrumentation
CO1	Student will able to explain basics of virtual instrumentation.
CO2	Students will able to do programming.
CO3	Student will able to know data acquisition. Students will able to do analysis of Fourier transforms correlation methods, windowing & filtering.
C04	Scudenis will able to bu analysis of rouner datisforms correlation methods, willdowing & intering.
Course Name:-	Process Modeling & Simulation
CO1	Students will able to explain dynamics of process.
CO2	Student will able to formulate model of certain system.
CO3	Student will able to identify unknown parameters of process.
CO4 CO5	Students will able to know optimization techniques. Students will able to describe basic simulation.
COS	Students will able to describe dash, similation.
Course Name:-	Digital Signal Processing
CO1	Define CT signals mathematically & solve problems related to operations on signals
CO2	To apply different tools like 2-transform, Fourier Transform to analyze the systems.
CO3	Student will able to design digital FIR & IIR filters.
CO4	Students will able to know applications of DSP.
Course Name:-	Process Equipment Design
CO1	Students will able to various standards for calibration & testing.
CO2	Students will able to design considerations of process as well as trouble shooting & maintenance.
CO3	Students will able to know PCB technology.
CO4	Students will able to design PID controller & signal conditioning.
Course Name:-	Project Work Phase I & Seminar
CO1	Student will know latest techniques in instrumentation engineering.
CO2	Student will able to explain technology in detail.
соз	Students' technical knowledge would be developed.
CO4	Student will able to organize the talk.
CO5	Student will able to develop presentation skills.
Course Name:-	Industrial Training
CO1	Student will able to adapt readily to real life working environment and practice the right work attitude.
CO2	Student will able to apply knowledge learnt, gain new skills and be aware of current technologies.
CO3	Student will able to provide opportunities for organization to assess them as prospective employees
CO4	Student will able to explain industrial problems and suggest possible solutions.
CO5	Student will able to present a proper report, both orally and in writing on their work experience
Course Name:-	Building Automation
CO1	Describe alarm system
CO2	know security system
CO3	Identify processes in HVAC
CO4	Explain Energy management systems
MECHANICAL ENGINEE	RING
	s.y. B Tech Part-I Sem-III
Course Name:-	Material Science and Metallurgy
CO1	Study various crystal structures of materials
CO2 CO3	Understand mechanical properties of materials and calculations of same using appropriate equations Evaluate phase diagrams of various materials
CO4	Suggest appropriate heat treatment process for a given application
CO4 CO5	Suggest appropriate heat treatment process for a given application Prepare samples of different materials for metallography
CO5 CO6	Prepare samples of different materials for metallography Recommend appropriate NDT technique for a given application
COS	Prepare samples of different materials for metallography
CO5 CO6	Prepare samples of different materials for metallography Recommend appropriate NDT technique for a given application
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COS COG Course Name:-	Prepare samples of different materials for metallography Recommend appropriate NDT technique for a given application Fluid Mechanics Define fluid, define and calculate various properties of fluid
COS COG Course Name:- CO1 CO2 CO3 CO4	Prepare samples of different materials for metallography Recommend appropriate NDT technique for a given application Fluid Mechanics Define fluid, define and calculate various properties of fluid Calculate hydrostatic forces on the plane and curved surfaces and explain stability of floating bodies Explain various types of flow. Calculate acceleration of fluid particles Apply Bernoulli's equation and Navier-Stokes equation to simple problems in fluid mechanics
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Identify the various types of gears are select a suitable gear train for practical purpose.
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Make force analysis of different mechanisms. CO4 Analyse and solve practical balancing problems. CO5 Suggest a suitable flywheel for practical applications Course Name: CO2 Compute temperature distribution has adolystate and unsteady-state heat conduction. CO3 Understand and analyse heat transfer through extended surfaces. CO4 Interpret and analyse forced and free convection heat transfer. CO5 Understand and analyse heat transfer through extended surfaces. CO6 Understand the principles of radiation heat transfer and basics of mass transfer. CO6 Design heat exchangers using LMTD and NTU methods. CO6 Design heat exchangers using LMTD and NTU methods. CO7 Design practice elements like shaft, key, various types of joints, couplings etc. CO8 Design or select elements like shaft, key, various types of pints, couplings etc. CO8 Design or select elements like leves, nuts & boits, Serve threads, Spring Pulley from Design data books and standard practices. CO8 Selector or select elements like leves, nuts & boits, Serve threads, Spring Pulley from Design data books and standard practices. CO8 Design or select elements like leves, nuts & boits, Serve threads, Spring Pulley from Design data books and standard practices. CO9 Design juga and flutures. CO9 Understand the working of single spinile automat, tool layout and cam design. CO9 Understand the working of single spinile automat, tool layout and cam design. CO9 Understand the working of single spinile automat, tool layout and cam design.
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COS Understand working of CNC machines. Course Name:- CAD/CAM Laboratory
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CO1 Create constrained 2D Sketches and solid models of machine component
CO2 Apply appropriate command to construct solid model
CO3 Create Assembly Model
CO4 Prepare Part Programs
Course Name:- Professional Skill Development
CO1 Strengthen technical and soft skills necessary for workplace success
co2 increase awareness of marketability on the job market and confidence in abilities
CO3 Effectively make the transition from school to the workplace
CO4 Manage their career by navigating through the working world more effectively
Course Name:- Workshop Practice - V
CO1 Select the suitable machining operations and prepare process sheet to manufacture a component and implement the same.
CO2 Control key dimensions on a component using principles of metrology and assembly
Course Name:- Mini-Project-1
CO1 Work in a group on specific assignment.
CO2 Think creatively to come out with feasible solution for engineering real life problem.
CO3 Enculcate habit of life long learning
B.E. Part-I Sem-VII
Course Name:- Refrigeration & Air Conditioning
CO1 Understand the principles and applications of refrigeration systems
CO2 Understand vapour compression refrigeration system and identify methods for performance improvement
CO3 Understand the working principles of air, vapour absorption & non conventional methods of refrigeration
CO4 Analyze air-conditioning processes using the principles of psychrometry.
CO5 Evaluate cooling and heating loads and understand the importance of air distribution, duct design in air conditioning systems.
Course Name:- Mechanical System Design
CO1 Incorporate ergonomic, aesthetic and creativity aspects in product design
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CO1 Incorporate ergonomic, aesthetic and creativity aspects in product design CO2 Analyze and Design different systems such as Pressure vessel, Brakes, Clutches, Machine tool Gear box and I. C. Engine Components etc CO3 Optimize design of various components/systems in mechanical engineering CO4 Use IS Codes, Design data books, Handbooks required for system design. CO5 Incorporate aesthetic, ergonomic and creativity considerations in industrial product design Course Name: Finite Elements Method
CO1 Incorporate ergonomic, aesthetic and creativity aspects in product design CO2 Analyze and Design different systems such as Pressure vessel, Brakes, Clutches, Machine tool Gear box and I. C. Engine Components etc CO3 Optimize design of various components/systems in mechanical engineering CO4 Use IS Codes, Design data books, Handbooks required for system design. CO5 Incorporate aesthetic, ergonomic and creativity considerations in industrial product design CO4 Tinte Elements Method CO1 Elaborate the fundamental concepts, equations of equilibrium, Stress-strain relations and the principle of minimum potential energy
CO1 Incorporate ergonomic, aesthetic and creativity aspects in product design CO2 Analyze and Design different systems such as Pressure vessel, Brakes, Clutches, Machine tool Gear box and I. C. Engine Components etc CO3 Optimize design of various components/systems in mechanical engineering CO4 Use IS Codes, Design data books, Handbooks required for system design. CO5 Incorporate aesthetic, ergonomic and creativity considerations in industrial product design Course Name: Finite Elements Method

CO4	Use commercial software package to solve simple structural and heat transfer problems.
Course Name:-	Elective I-Automobile Engineering
CO1	Explain components of automobile
CO2	Distinguish various types of automobile lay outs as per drive given to wheels & identify types of automobile bodies and materials used for the same.
CO3	Demonstrate various automobile systems like clutch, gearbox final drive, brake, steering, suspension wheels and tyres, and its construction and working
CO4	Demonstrate various electrical and electronic systems like lighting, starting charging electronic controlled management system and its construction and working principle, sensors used in automobile
CO5	Solve the problems related with various resistances for the automobile, engine power calculation.
Course Name:-	Elective II-Total Quality Management
CO1	Understand importance of assuring quality in the service or manufacturing sector and explain Quality assurance system
CO2	Understand vendor rating and select suitable vendor
CO3	Calculate reliability of system
CO4 CO5	Interpret various quality attributes, Comment on quality using Taguchi Philosophy and discuss the various quality approaches Identify and solve the quality related problems in manufacturing or service sector at various stages by using various TQM tools and techniques
COS	leteruty and solve the quality related problems in manual curing or service sector at vanious stages by using vanious rules tools and techniques
Course Name:-	Project Phase-I
CO1	Improve the professional competency and research aptitude in relevant area
CO2	Develop the work practice to apply theoretical and practical tools/techniques to solve real life problems related to industry and current research.
	M.Tech Part-I Sem-I
	Thermal Engineering
Course Name:-	Advanced Thermodynamics
CO1	Understand properties of pure substances. Represent various processes with steam on property diagrams, Apply and compare equations of state for real gases
CO2	Derive Maxwell Relations, Clapeyrons Equation etc. and apply these for evaluation of thermodynamic properties.
соз	Evaluate entropy change for flow and non-flow processes under steady and unsteady conditions.
CO4	Estimate thermodynamic properties of substances in gas or liquid state of ideal and real mixture.
COS	Predict intermolecular potential and excess property behavior of multi-component systems. Study irreversible processes.
Course Name:-	Advanced Heat Transfer
CO1	Analyze steady state and transient heat conduction problems of real life Thermal systems
CO2	Analyze extended surface heat transfer problems and problems of phase change heat transfer like boiling and condensation
CO3	Apply the basic principles of classical heat transfer in real engineering application
CO4	Analyze the analytical and numerical solutions for heat transfer problem.
CO5	Understand the basic concepts of turbulence and their impact on heat transfer
CO6	Analyze radiation heat transfer problems of various thermal systems
Course Name:-	Numerical Methods & Computational Techniques
CO1	Solve a set of algebraic equations representing steady state models formed in engineering problems
CO2	
	Fit smooth curves for the discrete data connected to each other or to use interpolation methods over these data tables
CO3	Fit smooth curves for the discrete data connected to each other or to use interpolation methods over these data tables Predict the system dynamic behavior through solution of ODEs modeling the system
CO3	Predict the system dynamic behavior through solution of ODEs modeling the system Solve PDE models representing spatial and temporal variations in physical systems through numerical methods.
CO4 CO5	Predict the system dynamic behavior through solution of ODEs modeling the system Solve PDE models representing spatial and temporal variations in physical systems through numerical methods. Demonstrate proficiency of using MATLAB, VB, ANSYS, EES etc.,
CO4	Predict the system dynamic behavior through solution of ODEs modeling the system Solve PDE models representing spatial and temporal variations in physical systems through numerical methods.
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CO4 CO5 CO6 Course Name:- CO1 CO2	Predict the system dynamic behavior through solution of ODEs modeling the system Solve PDE models representing spatial and temporal variations in physical systems through numerical methods. Demonstrate proficiency of using MATLAB, VB, ANSYS, EES etc., Solve a set of algebraic equations representing steady state models formed in engineering problems Energy Conservation and Management Demonstrate energy management principles, identify need, organizing it. carry out energy auditing. Conduct economic analysis of any industry or power plant, obtain conclusion and suggest it to industry.
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CO4 CO5 CO6 Course Name:- CO1 CO2	Predict the system dynamic behavior through solution of ODEs modeling the system Solve PDE models representing spatial and temporal variations in physical systems through numerical methods. Demonstrate proficiency of using MATLAB, VB, ANSYS, EES etc., Solve a set of algebraic equations representing steady state models formed in engineering problems Energy Conservation and Management Demonstrate energy management principles, identify need, organizing it. carry out energy auditing. Conduct economic analysis of any industry or power plant, obtain conclusion and suggest it to industry.
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CO4 CO5 CO6 Course Name:- CO1 CO2 CO3 Course Name:- CO1 CO2 CO3 CO05 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	Predict the system dynamic behavior through solution of ODEs modeling the system Solve PDE models representing spatial and temporal variations in physical systems through numerical methods. Demonstrate proficiency of using MATLAB, VB, ANSYS, EES etc., Solve a set of algebraic equations representing steady state models formed in engineering problems Energy Conservation and Management Demonstrate energy management principles, identify need, organizing it. carry out energy auditing. Conduct economic analysis of any industry or power plant, obtain conclusion and suggest it to industry. Interpret financial appraisal methods, and thermodynamic analysis, and estimate financial budget of visited industry. Design of Air-Conditioning Systems Demonstrate Air-Conditioning processes and psychometric Illustrate Ventilation, Necessity, Natural Ventilation, wind effect, Measurement of thermal comfort indices. Formulate and solve problems of cooling, heating load calculations.
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CO4 CO5 CO6 Course Name:- CO1 CO2 CO3 Course Name:- CO1 CO2 CO3 CO4 CO5	Predict the system dynamic behavior through solution of ODEs modeling the system Solve PDE models representing spatial and temporal variations in physical systems through numerical methods. Demonstrate proficiency of using MATUAB, VB, ANSYS, EES etc., Solve a set of algebraic equations representing steady state models formed in engineering problems Energy Conservation and Management Energy Conservation and Management Demonstrate energy management principles, identify need, organizing it. carry out energy auditing. Conduct economic analysis of any industry or power plant, obtain conclusion and suggest it to industry. Interpret financial appraisal methods, and thermodynamic analysis, and estimate financial budget of visited industry. Design of Air-Conditioning Systems Demonstrate Air-Conditioning Systems Demonstrate Air-conditioning processes and psychometric Illustrate Ventilation, Necessity, Natural Ventilation, wind effect, Measurement of thermal comfort indices. Formulate and solve problems of cooling, heating load calculations. Design Air distribution, duct design for suitable problem. Analyze Sound propagation, SPL, PVIL, Sound Intensity, room acoustics and apply noise control techniques M.Tech Part-II Sem-I
CO4 CO5 CO6 Course Name:- CO1 CO2 CO3 Course Name:- CO1 CO2 CO3 CO4	Predict the system dynamic behavior through solution of ODEs modeling the system Solve PDE models representing spatial and temporal variations in physical systems through numerical methods. Demonstrate proficiency of using MATLAB, VB, ANSYS, EES etc., Solve a set of algebraic equations representing steady state models formed in engineering problems Energy Conservation and Management Demonstrate energy management principles, identify need, organizing it. carry out energy auditing. Conduct economic analysis of any industry or power plant, obtain conclusion and suggest it to industry. Interpret financial appraisal methods, and thermodynamic analysis, and estimate financial budget of visited industry. Design of Air-Conditioning Systems Demonstrate Air-conditioning processes and psychometric Illustrate Ventilation, Necessity, Natural Ventilation, wind effect, Measurement of thermal comfort indices. Formulate and solve problems of cooling, heating load calculations. Design Air distribution, duct design for suitable problem. Analyze Sound propagation, SPL, PWL, Sound Intensity, room acoustics and apply noise control techniques
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CO4 CO5 CO05 CO01 CO1 CO2 CO3 CO04 CO5 CO05 CO05 CO07 CO05 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	Predict the system dynamic behavior through solution of ODEs modeling the system Sone PDE models representing spall and temporal variations in physical systems through numerical methods. Demonstrate profitions of using MATEAN, MASKS, ESC 400. Solve a set of algebraic equations representing steady state models formed in engineering problems Energy Conservation and Management Demonstrate energy management principles, identify need, organizing it, carry out energy auditing. Conduct economic analysis of any industry or power plant, obtain conduction and suggest it to industry. Interpret Formatical appraisal methods, so of thermodynamic analysis, and estimate financial budget of violetic industry. Interpret Formatical appraisal methods, so of thermodynamic analysis, and estimate financial budget of violetic industry. Design of Air-Conditioning Systems Demonstrate Air-Conditioning Systems Demonstrate Air-Conditioning processes and psychometric Blastars be violation, Receasily, Nativari Verolitions, wire effect, Measurement of thermal comfort indices. Design Air distribution, duct design for unlimbig proteins of conting, hashing tool activations or commission and prograption, STP, PRU, Sound intensity, norm accosts and apply noise control techniques Analysis Sound prograption, STP, PRU, Sound intensity, norm accosts and apply noise control techniques describing processes and to plan methodologies to solve problems. Curry one challable for the study as a project Demonstrate stehnicular writing while pregraming project report and present it to evaluation committeets demonstrate presentation skills acquired. Mirch Part 4 Semi- Design Engineering Commission Skills Solution will be able to understand and apply howledge of human communication and singuage processes as they occur across various contents, e.g., interpersonal, intrapersonal, small group, organizational, media, gender, family, interrultural communication. Solutions will be able to understand the power of Verbal and Norve-ebal communication
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Course Name:-	Analysis and Synthesis of Mechanisms
CO1	Study basic concepts of Analysis and synthesis of mechanisms
CO2	Understand curvature theory of mechanism.
CO3	Apply the graphical techniques commonly used in the kinematic synthesis ofplanar mechanismsto synthesize the real-world mechanisms.
CO4	Apply the analytical techniques commonly used in the kinematic synthesis of planar mechanismsto synthesize the real-world mechanisms.
CO5	Use coupler curves.
CO6	To learn the Kinematic analysis of spatial mechanisms
Course Name:-	Experimental Stress Analysis
CO1	To identify the need of stress analysis, type of experimental methods for stress analysis.
CO2	To obtain the knowledge of basics of elasticity with concepts of stress, strain and displacement in 2D regime.
CO3	To describe the mechanical, optical, pneumatic and electrical strain gauges for strain measurement
CO4 CO5	To be familiar with electrical strain gauges with adhesives, mounting techniques, temperature compensation techniques and more emphasis on wheatstone's bridge network for strain analysis. To understand nature of light and working principle of optical instruments such as plane and circular polariscope.
CO6	To understand effect of stressed model in plane and circular polariscope, properties of materials for 2-D Photoelasticity, introduction to moiré fringe technique and coating methods.
	To understand effect of stressed mode in plant and understanding members on the stress of materials for 20 modes and of members and country members and country members.
Course Name:-	Advanced Mechanical Vibration
CO1	Formulate equation of motion of multi-degree of freedom system and evaluate vibration parameters.
CO2	Understand vibration measuring equipment.
CO3	Use of modal analysis to evaluate vibration parameters.
CO4	Design and understand and of vibration control systems
CO5	Understand the phenomena of non-linear vibration.
CO6	Understand various aspect of machine condition monitoring.
Course Name:-	Machine Tool Design
CO1	Study kinematics of various machine tools.
CO2	Understand principles of various machine tool feed and speed drives.
CO3	Design power screws, slideways and machine tool spindle with bearings.
CO4	Apply modular design aesthetics and ergonomics for machine tool.
COS	Design structure and other auxiliary mechanism of machine tool.
CO6	Study acceptance test of machine tools and methods of machine tool condition.
	NAME CONT.
	M.Tech Part-II Sem-I
	Posted Street
Course Name:-	Project Stage-I
CO1	Identify problems and to plan methodologies to solve problems.
CO2	Carry out exhaustive literature review, study &evaluate collected literature critically and identify the gaps based on the review.
CO3	Select the specific problem for the study as a project
CO4	· · · · · · · · · · · · · · · · · · ·
1004	Demonstrate technical writing while preparing project report and present it to evaluation committeeto demonstrate presentation skills acquired.
	Demonstrate technical writing while preparing project report and present it to evaluation committeeto demonstrate presentation skills acquired.
204	Demonstrate technical writing while preparing project report and present it to evaluation committeeto demonstrate presentation skills acquired.
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FIRST YEAR ENGINEERII	NG (GROUP A) F.Y. B Tech Part-I Sem-I
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FIRST YEAR ENGINEERII Course Name:- CO1 CO2	NC (GROUP A) F.Y. B Tech Part-I Sem-I Engineering Mathematics-I Solve system of linear algebraic equations by using Matrix. Find first and higher order partial derivatives of function.
FIRST YEAR ENGINEERII Course Name:- CO1 CO2 CO3	NC (GROUP A) F.Y. B Tech Part-I Sem-I Engineering Mathematics-I Solve system of linear algebraic equations by using Matrix. Find first and higher order partial derivatives of function. Calculate expansion, Jacobian and maxima and minima of functions of two variables by using partial derivatives.
FIRST YEAR ENGINEERII Course Name:- CO1 CO2 CO3 CO4	F.Y. B Tech Part-1 Sem-1 Engineering Mathematics-1 Solve system of linear algebraic equations by using Matrix. Find first and higher order partial derivatives of function. Calculate expansion, Jacobian and maxima and minima of functions of two variables by using partial derivatives. Draw the curve with justification.
FIRST YEAR ENGINEERII Course Name:- CO1 CO2 CO3	NC (GROUP A) F.Y. B Tech Part-I Sem-I Engineering Mathematics-I Solve system of linear algebraic equations by using Matrix. Find first and higher order partial derivatives of function. Calculate expansion, Jacobian and maxima and minima of functions of two variables by using partial derivatives.
FIRST YEAR ENGINEERII Course Name:- CO1 CO2 CO3 CO4 CO5	F.Y. B Tech Part-I Sem-I Engineering Mathematics-I Solve system of linear algebraic equations by using Matrix. Find first and higher order partial derivatives of function. Calculate expansion, Jacobian and maxima and minima of functions of two variables by using partial derivatives. Draw the curve with justification. Evaluate double and triple integral for area and volume.
FIRST YEAR ENGINEERII Course Name:- CO1 CO2 CO3 CO4	F.Y. B Tech Part-1 Sem-1 Engineering Mathematics-1 Solve system of linear algebraic equations by using Matrix. Find first and higher order partial derivatives of function. Calculate expansion, Jacobian and maxima and minima of functions of two variables by using partial derivatives. Draw the curve with justification.
FIRST YEAR ENGINEERII Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:-	NG (GROUP A) F.Y. B Tech Part-I Sem-I Engineering Mathematics-I Solve system of linear algebraic equations by using Matrix. Find first and higher order partial derivatives of function. Calculate expansion, Jacobian and maxima and minima of functions of two variables by using partial derivatives. Draw the curve with justification. Evaluate double and triple integral for area and volume. Engineering Physics
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FIRST YEAR ENGINEERII Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3	No. (GROUP A) F.Y. B Tech Part-I Sem-I Engineering Mathematics-I Engineering Mathematics-I Solve system of linear algebraic equations by using Matrix. Find first and higher order partial derivatives of function. Calculate expansion, Jacobian and maxima and minima of functions of two variables by using partial derivatives. Draw the curve with justification. Evaluate double and triple integral for area and volume. Engineering Physics Define and explain basic laws, principles and ideas of physics related to engineering curriculum. Understand Engineering problems based on the principle of Oscillation, Ultrasonics, Optics, Laser, Fibre optics, Nuclear physics, and Quantum mechanics. Understand Fundamental of Electrodynamics, Semiconductor, Dielectric, Magnetic and Superconducting materials which forms the base of many modern devices and technologies.
FIRST YEAR ENGINEERII Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3	Engineering Mathematics-1 Solve system of linear algebraic equations by using Matrix. Find first and higher order partial derivatives of function. Calculate expansion, Jacobian and maxima and minima of functions of two variables by using partial derivatives. Draw the curve with justification. Evaluate double and triple integral for area and volume. Engineering Physics Define and explain basic laws, principles and ideas of physics related to engineering curriculum. Understand Engineering problems based on the principle of Oscillation, Ultrasonics, Optics, Laser, Fibre optics, Nuclear physics, and Quantum mechanics. Understand Fundamental of Electrodynamics, Semiconductor, Dielectric, Magnetic and Superconducting materials which forms the base of many modern devices and technologies. Engineering Graphics
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Sketch and explain the basic block of communication system. List and explain the different number system. Solve examples on converting one form of number system to another form. State Boolean laws and theorems and logic gates.	соз	
	CO4	Sketch and explain the basic block of communication system. List and explain the different number system. Solve examples on converting one form of number system to another form. State Boolean laws and theorems and logic gates.

CO PART II

	Chemical Engineering
	S.Y. B Tech Part-II Sem-IV
Course Name:-	Numerical Methods in Chemical Engineering
CO1	Apply Numerical Methods in the field of Science and some fields of Engineering.
CO2	Familiar with numerical integration and differentiation, numerical solution of ordinary differential equations
соз	Familiar with programming with numerical packages like CC++,Sclab and Matlab
Course Name:-	Chemical Engineering Thermodynamics -1
CO1	Apply the first and second laws of thermodynamics to chemical processes.
CO2	Compute the properties of ideal and real mixtures.
соз	Analyze the behavior of flow and non-flow processes using mass and energy balances
CO4	Estimate heat and work requirements for industrial processes.
COS	Determine the efficiency of processes involving heat into work, refrigeration and liquefaction
Course Name:-	Heat Transfer Operations
CO1	Perform heat flux calculations through constant and variable area elements and estimate heat transfer rate and optimum insulation thickness
CO2	Develop correlations using elementary dimensional analysis for heat transfer without phase change and with phase change
CO4	Comprehend the laws governing radiation mode and develop correlation for various systems. Perform functional design of heat transfer equipment heat exchangers & evaporators.
Course Name:-	Basic Human Rights
course realite:-	·
CO1	Learn to respect others caste, religion, region and culture.
CO2	Be aware of their rights as Indian citizen.
соз	Understand the importance of groups and communities in the society.
CO4	Realize the philosophical and cultural basis and historical perspectives of human rights.
CO5	Understand the history of human rights.
CO6	Make them aware of their responsibilities towards the nation.
Course Name:-	Strength of Material
CO1	Select material based on strength properties of materials.
CO2	To analyze and design thick cylinder, spheres and thin cylinders, spheres.
соз	To design chemical engineering equipments and plants while including safety, environment.
CO4	To have knowledge of various engineering materials available in market.
Course Name:-	Mini Project -II
CO1	Understand, plan and execute a Mini Project with team.
CO2 CO3	Implement basic engineering knowledge.
CO3	Prepare a technical report based on the Mini project.
	Deliver technical seminar based on the Mini Project work carried out.
T.E. Part-II Sem-	l vi
	Industrial Economics, Management & Entrepreneurship
CO1	Understand basic models of the behavior of firms and industrial organization and how they can be applied to policy issues.
CO2	Manipulate these models and be able to solve analytically problems relating to industrial economics.
соз	Apply the models to important policy areas while being aware of the limitations of the theory.
Course Name:-	Plant Utilities and Pollution Control
CO1	Know the utilities like water, air, refrigeration, insulation, refractories etc.
CO2	Know the various properties like ph, hardness of water and they can measure them in lab.
соз	Develop technical knowledge and apply design skills related to utilities and pollution control in chemical industries
Course Name:-	Mass Transfer II
CO1	Conceptually describe the role of mass transfer in various unit operations including distillation, drying, humidification etc.
CO2	Use the McCabe-Thiele Method, Ponchon Savarit Method for solving distillation problems and analyze & design constant rate drying systems.
соз	Develop and apply criteria for selecting among alternative separation technologies available.
CO4	Select appropriate economical processes in industries.
	D D
	Process Dynamics & Control Model a physical process
CO1	Model a physical process. Cain the knowledge of unique controller designs, and, mathods of controller hunter.
CO2 CO3	Gain the knowledge of various controller designs, and methods of controller tuning. Understand various complex control schemes, characteristics and application of control valves.
CO3	Understand various complex control schemes, characteristics and application of control valves. Use enhanced feedback control with cascade, feed forward, and model-based structures
	Thirtocody ice or may an more watered
Course Name:-	Chemical Reaction Engineering-I
CO1	To analyze laboratory data for determining the order of reaction and reaction rate constant.
CO2	To relate rate of reaction with design equation for reactor sizing.
CO3	To make comparisons of ideal reactor types (batch, plug flow, mixed flow, etc.) and select the most suitable one.
CO4	To determine optimal ideal reactor design for multiple reactions for better yield or selectivity of desired product.
Course Name:-	Process Simulation Lab
CO1	Understand, plan and execute a chemical Processes
CO2	Implement basic engineering knowledge.
соз	Prepare a computer based technical report.
B.E. Part-II Sem-	VIII VIII
	Charles Course & Course Trades Lore
Course Name:-	Chemical Processes & Green Technology

CO1	Understand the detailed of chemical manufacturing process
CO2	Understand the role of chemicals for society
	Understand flow sheeting of different process with unit operations and unit process involved.
CO4	Understand bio-fuel technology and importance of alternatives fuels for today's environment.
COS	Application of knowledge for practical purposes
cos	Application or intolereige for practical purposes
	Transport Phenomena
CO1	Understand, analyze and solve steady state problems, particularly in context of momentum, heat and mass transfer.
CO2	Analyze steady state shell momentum, energy and mass balance for laminar flow across various boundary conditions.
соз	Apply equations of change in various co-ordinate systems and able to solve problems for cases that are well defined and also slightly defined.
CO4	Correlate the analogy between momentum, heat and mass transport.
Course Name:-	Process Economics & Project Engineering
	Apply the chemical engineering knowledge to practical situations for the purpose of accomplishing something that will be economical and beneficial to the society
CO2	Understand and work problems that account for the time value of money, cash flows occurring at different times with different amounts, and equivalence at different interest rates.
CO3	Determine the breakeven for one or two alternatives and calculate the payback period.
CO4	Make computations for interest rates, rates of return and understand interest rate statements that include nominal and effective rates.
CO5	Utilize different annual worth techniques to evaluate and select alternatives.
Course Name:-	Elective -II Distillation
CO1	Perform vapor liquid equilibrium calculations for ideal and non ideal systems.
	Perform mass and energy balance calculations
CO2	"
	Determine number of stages required for separation
CO4	Solve distillation problems using Lewis and McCabe Thiele methods, solve multi-component distillation problems using shortcut methods
Course Name:-	Elective-III: Energy Conservation and Recovery
CO1	Impart knowledge in the domain of energy conservation and recovery
CO2	Bring out Energy Conservation Potential
	Inculcate knowledge and skills about assessing the energy efficiency in industry
C	Advanced Separation Processes
	·
	Understand fundamentals of separation processes.
CO2	Understand various techniques to select separation process.
соз	Understand various parameters affect on separations.
CO4	Understand application of separation processes in various industries
	F.Y. M.Tech Sem-II
	ADVANCED MASS TRANSFER
Course Name	The Article High Thomas Lit.
CO1	
	Understand the concept of separation factor and separating agent.
CO2	Determine the degrees of freedom using phase rule and description rule.
CO2	
CO2 CO3	Determine the degrees of freedom using phase rule and description rule.
CO2 CO3 CO4	Determine the degrees of freedom using phase rule and description rule. Compare multi-stage operations.
CO2 CO3 CO4	Determine the degrees of freedom using phase rule and description rule. Compare multi-stage operations. Design binary distillation column using McCabe Thiele and Ponchon-Savaritmethods.
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CO2 CO3 CO4 CO5 Course Name:-	Determine the degrees of freedom using phase rule and description rule. Compare multi-stage operations. Design binary distillation column using McCabe Thiele and Ponchon-Savaritmethods. Design multi-component distillation columns using short cut and rigorous calculationmethods. ADVANCED SEPARATION TECHNIQUES
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CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3	Determine the degrees of freedom using phase rule and description rule. Compare multi-stage operations. Design binary distillation column using McCabe Thiele and Ponchon-Savaritmethods. Design multi-component distillation columns using short cut and rigorous calculationmethods. ADVANCED SEPARATION TECHNIQUES Classify the membranes.
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CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 COURSE Name:- CO1 CO2 CO3 CO4 CO5	Determine the degrees of freedom using phase rule and description rule. Compare multi-stage operations. Design binary distillation column using McCabe Thiele and Ponchon-Savaritmethods. Design multi-component distillation columns using short cut and rigorous calculationmethods. ADVANCED SEPARATION TECHNIQUES Classify the membranes. Differentiate various membrane processes. Understand the methods of membrane proparation. Compare membrane process with other methods of separation. Evaluate the flux of solvent and solute through membrane. ELECTIVE - IllRisk Analysis and Hazops Identify the type of risk involved in a chemical plant operation Manage risk and prepare disaster management options Understand safety, energy and environmental impact audit
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CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 COURSE Name:- CO1 CO2 CO3 CO4 CO5	Determine the degrees of freedom using phase rule and description rule. Compare multi-stage operations. Design binary distillation column using McCabe Thiele and Ponchon-Savaritmethods. Design multi-component distillation columns using short cut and rigorous calculationmethods. ADVANCED SEPARATION TECHNIQUES Classify the membranes. Differentiate various membrane processes. Understand the methods of membrane proparation. Compare membrane process with other methods of separation. Evaluate the flux of solvent and solute through membrane. ELECTIVE - IllRisk Analysis and Hazops Identify the type of risk involved in a chemical plant operation Manage risk and prepare disaster management options Understand safety, energy and environmental impact audit
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	S.Y. M.Tech Sem-IV
Course Name:-	PROJECT WORK- STAGE II
CO1	Implement the methods/techniques identified in dissertation part-A
CO2	Analyze and interpret the results obtained
CO3	Compare the results obtained with literature
CO4	Demonstrate the original contribution to knowledge
	CIVIL ENGINEERING
	S.Y. B Tech Part-II Sem-IV
Course Name:-	STRUCTURAL MECHANICS
CO1	Student will able to know the effect of external action on elastic body.
CO2	Student will able to know the different engineering properties of the materials.
CO3	Student will able to analyze the stress, strain and deformation of elastic bodies under external action.
CO4	Student will able to compute design forces.
Course Name:-	HYDRAULICS II
CO1	Design open channel sections in a most economical way.
CO2	Know about the non uniform flows in open channel and the characteristics of hydraulic jump.
	Understand application of momentum principle of impact of jets on plane.
	oncersance approach or momentum principie or impact or jets on piane.
C 1''	SUDISMAGIL
Course Name:-	SURVEYING-II
CO1	Understand basics different types of curves on roads and their preliminary
	Perform setting of curves, buildings, culverts and tunnels.
CO3	Comprehend different geodetic methods of survey such as triangulation, trigonometric leveling.
CO4	Comprehend modern advanced surveying techniques
Course Name:-	ENGINEERING GEOLOGY
CO1	Recognize the different land forms which are formed by various geological agents.
CO2	Identify the origin, texture and structure of various rocks and physical properties of mineral.
CO3	Emphasize distinct geologist structures which have influece on the civil engineering structures.
CO4	Understand how the various geological conditions affect the design parameters of structures.
Course Name:-	ENGINEERING MANAGEMENT
CO1	Demonstrate the nuances of management functions.
CO2	Analyze the framework of a business organization.
	Adopt an empirical approach toward business situations.
	Apply various Management techniques
CO4	Apply various Management techniques
CO4	
CO4 Course Name:-	Apply various Management techniques SOFT SKILLS DEVELOPMENT
CO4 Course Name:-	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills.
CO4 Course Name:- CO1 CO2	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently.
CO4 Course Name:- CO1 CO2 CO3	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management.
COUTSE Name:- CO1 CO2 CO3 CO4	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will have the qualities of time management and discipline.
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will have the qualities of time management and discipline. Learners would be able to present themselves as an inspiration for others.
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem-A	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will have the qualities of time management and discipline. Learners would be able to present themselves as an inspiration for others.
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem- Course Name:-	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will avelop the qualities like self-discipline, self-criticism and self-management. Learners will have the qualities of time management and discipline. Learners would be able to present themselves as an inspiration for others. JI THEORY OF STRUCTURES
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem Course Name:- CO1	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will have the qualities of time management and discipline. Learners would be able to present themselves as an inspiration for others. VI THEORY OF STRUCTURES Know the concept of determinacy and indeterminacy.
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem Course Name:- CO1 CO2	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will have the qualities of time management and discipline. Learners would be able to present themselves as an inspiration for others. THEORY OF STRUCTURES Know the concept of determinacy and indeterminacy. Apply appropriates solution techniques to the problem.
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem Course Name:- CO1 CO2 CO3	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners wull be abile to present themselves as an inspiration for others. VI THEORY OF STRUCTURES Know the concept of determinacy and indeterminacy. Apply appropriate solution techniques to the problem. Analyze indeterminate structures by using different methods.
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem- Course Name:- CO1 CO2 CO3 CO4	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners would be abile to present themselves as an inspiration for others. At Interest Will Apply appropriate solution techniques to the problem. Apply appropriate solution techniques to the problem. Analyze indeterminate structures by using different methods. Interpret the output of different methods
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem- Course Name:- CO1 CO2 CO3 CO4	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners wull be abile to present themselves as an inspiration for others. VI THEORY OF STRUCTURES Know the concept of determinacy and indeterminacy. Apply appropriate solution techniques to the problem. Analyze indeterminate structures by using different methods.
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CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem Course Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners would be able to present themselves as an inspiration for others. At Interest Will Apply appropriate solution techniques to the problem. Apply appropriate solution techniques to the problem. Analyze indeterminate structures by using different methods. Interpret the output of different methods
CO4 COURSE Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem-A COURSE Name:- CO1 CO2 CO3 CO4 CO5	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will have the qualities like self-discipline, self-criticism and self-management. Learners will be able to present themselves as an inspiration for others. THEORY OF STRUCTURES Know the concept of determinacy and indeterminacy. Apply appropriate solution techniques to the problem. Analyze indeterminate structures by using different methods. Interpret the output of different methods Aware of the limitations of the methods of solution and their outcomes.
CO4 COURSE Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem-A COURSE Name:- CO1 CO2 CO3 CO4 CO5	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will acquire interpersonal communication skills. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will acquire interpersonal communication skills. Learners will acquire interpersonal communication skills. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will acquire interpersonal communication skills. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will develop the qualities of time management and discipline. Learners will develop the qualities of time management and discipline. Learners will develop the qualities of the qualities like self-discipline, self-criticism and self-management. Learners will develop the qualities of the politicism and self-management. Learners will develop the qualities of the politicism and self-management. Learners will develop the qualities of the politicism and self-management. Learners will develop the qualities of the politicism and self-management. Learners will develop the qualities of the politicism and self-management. Learners will develop the qualities of the politicism and self-management. Learners will develop the qualities of the politicism and self-management. Learners will develop the qualities of the politicism and self-management. Learners will develop the qualities of the politicism and self-management. Learners will develop the
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem-V Course Name:- CO1 CO2 CO3 CO4 CO5	Apply agrious Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will advelop the qualities like self-discipline, self-criticism and self-management. Learners will have the qualities of time management and discipline. Learners will be able to present themselves as an inspiration for others. THEORY OF STRUCTURES Know the concept of determinacy and indeterminacy. Apply appropriate solution techniques to the problem. Analyze indeterminate structures by using different methods. Interpret the output of different methods Aware of the limitations of the methods of solution and their outcomes. SECTECHNICAL ENGINEERING – II Know different soll/ rock strata and use of this data for interpretation of bearing capacity.
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem CO1 CO2 CO3 CO4 CO5 CO5 CO4 CO5	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will have the qualities of time management and discipline. Learners will have the qualities of time management and discipline. Learners will have the qualities of time management and discipline. Learners will have the qualities of time management and discipline. Learners will develop the delities of time management and discipline. Learners will have the qualities of time management and discipline. Learners will develop the qualities of time management and discipline. Learners will develop the qualities of time management and discipline. Learners will develop the qualities of time management and discipline. Learners will develop the qualities of time management and discipline. Learners will develop the qualities of time management and discipline. Learners will develop the qualities of time management and discipline. Learners will develop the qualities of time management and discipline. Learners will develop the qualities in the management and discipline. Learners will develop the qualities in the management and discipline. Learners will develop the qualities in the management and discipline. Learners will develop the ability to work independently. Learners will acquire in
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem CO1 CO2 CO3 CO4 CO5 CO5 CO4 CO5 CO5 CO4 CO5 CO5	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-rictisim and self-management. Learners will develop the qualities like self-discipline, self-rictisim and self-management. Learners will have the qualities of time management and discipline. Learners would be able to present themselves as an inspiration for others. VI THEORY OF STRUCTURES Know the concept of determinacy and indeterminacy. Apply appropriate solution techniques to the problem. Analyze indeterminate structures by using different methods. Interpret the output of different methods Aware of the limitations of the methods of solution and their outcomes. GOTECHNICAL ENGINEERING — II Know different soll/ rock strata and use of this data for interpretation of bearing capacity. Understand the importance and basis of foundation engineering in the civil engineering project. Understand the importance and basis of foundation engineering in the civil engineering project.
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO0 CO3 CO4 CO5	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will develop the qualities of time management and discipline. Learners will have the qualities of time management and discipline. Learners will have the qualities of time management and sicropline. HEARY OF STRUCTURES Know the concept of determinacy and indeterminacy. Apply appropriate solution techniques to the problem. Analyze indeterminate structures by using different methods. Interpret the output of different methods Avare of the limitations of the methods of solution and their outcomes. GETECHNICAL ENGINEERING — II. Understand the importance and basics of foundation engineering in the cluil engineering project. Understand the importance and basics of foundation engineering in the cluil engineering project. Understand the elassical theories of load bearing capacity and settlement of foundations.
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO0 CO3 CO4 CO5	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will develop the qualities of time management and discipline. Learners will develop the qualities of time management and discipline. Learners would be abile to present themselves as an inspiration for others. APPLY APP
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CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem-V CO1 CO2 CO3 CO4 CO5 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO6 CO6 CO6 CO7 CO7 CO7 CO7 CO7	Apply various Management techniques SOFT SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-drickism and self-management. Learners will develop the qualities of time management and discipline. Learners would be able to present themselves as an inspiration for others. An Intervity of STRUCTURES Know the concept of determinacy and indeterminacy. Apply appropriate solution techniques to the problem. Analyze indeterminate structures by using different methods. Interpret the output of different methods. Analyze indeterminate structures by using different methods. GEOTECHNICAL ENGINEERING — I Know different sol/ rock strata and use of this data for interpretation of bearing capacity. Understand the alpsaical theories of load bearing capacity and settlement of foundations. Understand the desical theories of load bearing capacity and settlement of foundations. Understand the geological aspects of shallow and deep foundations. Understand the concept of the stability of slopes and study various methods of evaluating the stability of slopes. Understand the concept of the stability of slopes and study various methods of evaluating the stability of slopes.
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CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem-N Course Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO6 CO6 CO7	Apply various Management techniques SET SKILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will acquire interpersonal communication skills. Learners will develop the ability to work independently. Learners will develop the ability to work independently. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will develop the qualities like self-discipline, self-criticism and self-management. Learners will develop the qualities of time management and discipline. Learners will develop the qualities of time management and discipline. Learners will develop the qualities of time management and discipline. Learners will ave the qualities of time management and discipline. Learners will ave the qualities of time management and discipline. Learners will ave the qualities of time management and discipline. Learners will ave the qualities of time management and discipline. Learners will ave the qualities of time management and discipline. Learners will ave the present the management and discipline and interpretation of thems. Analysis indeterminate solution techniques to the problem. Analysis indeterminate solution techniques to the problem. Analysis indeterminate structure by using different methods. Analysis indeterminate structure by using different methods. Analysis indeterminate structure by using different methods. Linderstand the inoptrace and use of this data for interpretation of bearing capacity. Linderstand the inoptrace and use of this data for interpretation of bearing capacity. Linderstand the classical theories of load bearing capacity and settlement of foundations. Linderstand the canagement of the stability of slopes and study various methods of evaluating the stability of slopes. Linderstand the various concepts of modern foundation techniques. Linderstand the canagement foundation techniques methods of evaluating the stability of slopes. Linderstand the canagement foundation techniques methods
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CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem-V COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO6 CO6 CO7 CO7 CO7 CO7 CO7 CO7	Apply autonous Management techniques SOT SALLS EVELOPMENT Learners will acquire interportoral communication stills: Learners will acquire interportoral communication stills: Learners will develop the ability to work independently. Learners will develop the qualities is less elf-despoint, self-criticion and self-management. Learners will develop the qualities is less elf-despoint, self-criticion and self-management. Learners will develop the qualities is less elf-despoint, self-criticion and self-management. Learners will develop the qualities is less elf-despoint, self-criticion and self-management. Learners will have be self-despoint, self-criticion and self-management. Learners will have been despointed for self-despoint, self-criticion and self-management. Learners will develop the compet of deferminancy and interminance in the self-despointed management. Learners will have been developed of deferminance in the self-despointed management. Learners will have been developed of self-despointed methods. Learners will have been developed of self-despointed
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem-V Course Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO6 CO6 CO7 CO7 CO7 CO7 CO7 CO7	Apply autonot Management techniques SOT SILLS DEVLOMENT Learners will decide interpersonal communication skills. Learners will decide plus ability to work independently. Learners will decide to present themselves as an inspiration for others. A variable to present themselves as an inspiration for others. A variable to present themselves as an inspiration for others. A variable to present themselves as an inspiration for others. A variable to present themselves as an inspiration for others. A variable to present themselves as an inspiration for others. A variable to present themselves as an inspiration for others. A variable to present themselves as an inspiration for others. A variable to present themselves as an inspiration for others. A variable to compare of determinacy and independently of determinacy. A public above to the conspiration technique to the problem. A value of the institutions of the methods of solution and their outcomes. A variable institutions of the methods of solution and their outcomes. A variable institutions of the methods of solution and their outcomes. A variable institution of the methods of solution and their outcomes. A variable institution of the methods of solution and steriment of flouridations. Linderstand the concept of the cabality of solution and steriment of flouridations. Linderstand the concept of the cabality of solution and steriment of flouridations. Linderstand the concept of the cabality of solution engineering in the civil engineering project. Linderstand the concepts of methods and efficient standards for wastewater disposal as per norms. Design the primary, secondary and low cost treatment processes for wastewater. A political ferrent legal aspects reliated to environment protection for sustainable development. A variable ferrent legal aspects reliated to environment
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem-N Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO0 CO5 CO6 CO0 CO7 CO7 CO7 CO7 CO7 CO7 CO7	Apply awrition Management techniques SOFT SILLS DEVELOPMENT Learners will acquire interpersonal communication skills. Learners will acquire interpersonal c
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem-A Course Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO6 CO6 CO6 CO7	SOT SILLS OF VILLOMINDY Learners will desire interpersonal communication skills. Learners will develop the pathlets the self-designers, self
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem-N Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO0 CO5 CO6 CO0 CO7 CO7 CO7 CO7 CO7 CO7 CO7	Apply aerion of Management techniques SOFT SILLS DEVELOPMENT Lectures will acquire interpersonal communication Sills. Lectures will acquire interpersonal communication sills management. Lectures will acquire interpersonal communication and self-management. Lectures will acquire interpersonal communication of the sills of the s
CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 T.E. Part-II Sem-A CO3 CO4 CO5 CO6 CO6 CO7 CO7 CO7 CO7 CO7 CO7	SOFT SALES DOVILLOPMENT Learners will segure interpersonal communication skills. Learners will segure interpersonal communication skills. Learners will segure interpersonal communication skills. Learners will develop the qualities like self-discipale, self-orticion and self-management. Learners will develop the qualities like self-discipale, self-orticion and self-management. Learners will show the qualities like self-discipale, self-orticion and self-management. Learners will show the qualities like self-discipale, self-orticion and self-management. Learners will show the present beauties as an inspiration for others. **CONTROLLORIS** **THORNORY STRUCTURES** **CONTROLLORIS**
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CO1	Identify and classify the different types of minerals and rocks with their civil Engineering significance.
CO2	Interpret the different types of geological structures with emphasis on civil engineering aspects.
CO3	Identify the phenomenon of earthquake and landslides along with their civil engineering mitigation.
CO4	Acquire knowledge about groundwater and building stones.
CO5	Investigate the suitability of site for construction of dams, reservoirs, bridges and tunnels etc.
Course Name:-	STRUCTURAL DESIGN AND DRAWING I
CO1	Analyze different types of loads acting on steel structures
CO2	Design different members of roof truss and gantry girder
CO3	Analyze and design components of steel structures like plate girder, foot bridge and building frame
	SEMINAR .
CO1	Review the recent literature and select a relevant topic.
CO2	Prepare the seminar report in best manner.
СО3	Present the seminar work using advanced tools.
B.E. Part-II Sem-	VIII
Course Name:-	DESIGN OF CONCRETE STRUCTURE II
CO1	Find the meaning of design of concrete structures.
CO2	Choose the suitable data (Basic Mechanics, Mathematics, and structural analysis) required for
соз	Design of Concrete structures.
CO4	Analyze & Design of Reinforced concrete structure.
CO5	Extend the concept of WSM, ULM to LSM for RCC Sections.
CO6	Classify, analyze & design the prestressed concrete.
CO7	To solve the practical problems by application of this course.
Course Name:-	TOWN PLANNING AND TRANSPORTATION ENGINEERING
CO1	Students should have gain knowledge of special RCC structures and should be able to design by using analytical method and software.
Course Name:-	STRUCTURAL DESIGN OF FOUNDATION AND RETAINING STRUCTURES (ELECTIVE II)
CO1	Design a combined and raft footing.
CO2	Design a pile and pile cap.
	Analyze and design underwater construction.
CO3	
CO4	Know the types of retaining wall and its design.
Course Name:-	ADVANCED CONSTRUCTION TECHNIQUES (ELECTIVE III)
CO1	Understand the Advanced construction techniques
CO2	Apply Advanced construction Techniques in Practice
соз	Approaches to enhance and introduce new trends in construction industry to face the construction problems
CO4	Aware about importance of new construction techniques in Civil engineering.
	EV M Tach Samil
	F.Y. M. Tech Sem-II THERDY OF DIATES & SHELLS
Course Name:-	F.Y. M.Tech Sem-II THEORY OF PLATES & SHELLS
	THEORY OF PLATES & SHELLS
CO1	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates
CO1 CO2	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions.
CO1	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates
CO1 CO2	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions.
CO1 CO2 CO3	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation for deflected shape of circular plate
CO1 CO2 CO3	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate for various loading and support conditions.
CO1 CO2 CO3 CO4 CO5	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand amembrane theory for internal forces in different shells.
CO1 CO2 CO3 CO4 CO5	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand amembrane theory for internal forces in different shells.
CO1 CO2 CO3 CO4 CO5	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation for deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand membrane theory for internal forces in different shells. Understand different theories of analysis of shells.
CO1 CO2 CO3 CO4 CO5 CO6 Course Name:-	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation for deflected shape of circular plate for various loading and support conditions. Understand and derive governing differential equation for deflected shape of circular plate for various loading and support conditions. Understand membrane theory for internal forces in different shells. Understand different theories of analysis of shells. FINITE ELEMENT METHOD
CO1 CO2 CO3 CO4 CO5 CO6 Course Name:-	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation for deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand ame theory for internal forces in different shells. Understand membrane theory for internal forces in different shells. FINITE ELEMENT METHOD Understand the different energy methods in structural analysis and basic concepts of finite element method.
CO1 CO2 CO3 CO4 CO5 CO6 Course Name:-	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation for deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand membrane theory for internal forces in different shells. Understand different theories of analysis of shells. FINITE ELEMENT METHOD Understand the different energy methods in structural analysis and basic concepts of finite element method. Analyse 1-D problems related to structural analysis like Bars, Trusses, Beams and Frames using finite element approach.
CO1 CO2 CO3 CO4 CO5 CO6 Course Name:- CO1 CO2 CO3	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation for deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand membrane theory for internal forces in different shells. Understand different theories of analysis of shells. FINITE ELEMENT METHOD Understand the different energy methods in structural analysis and basic concepts of finite element method. Analyse 1-O problems related to structural analysis like Bars, Trusses, Beams and Frames using finite element approach. Find solution to problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method.
CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO1 CO2 CO3 CO4	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation for deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand membrane theory for internal forces in different shells. Understand different theories of analysis of shells. FINTE ELEMENT METHOD Understand the different energy methods in structural analysis and basic concepts of finite element method. Analyse 1-0 problems related to structural analysis like Bars, Trusses, Beams and Frames using finite element approach. Find solution to problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method. Solve 2-0 problems using knowledge of theory of elasticity.
CO1 CO2 CO3 CO4 CO5 CO6 Course Name:- CO1 CO2 CO3 CO4 CO5	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand membrane theory for internal forces in different shells. Understand different theories of analysis of shells. FINITE ELEMENT METHOD Understand the different energy methods in structural analysis and basic concepts of finite element method. Analyse 1-D problems related to structural analysis like Bars, Trusses, Beams and Frames using finite element approach. Find solution to problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method. Solve 2-D problems using knowledge of theory of elasticity. Students will be able to implement the knowledge of numerical methods in FEM to find the solution to the various problems in statics and dynamic.
CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO1 CO2 CO3 CO4	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation for deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand membrane theory for internal forces in different shells. Understand different theories of analysis of shells. FINTE ELEMENT METHOD Understand the different energy methods in structural analysis and basic concepts of finite element method. Analyse 1-0 problems related to structural analysis like Bars, Trusses, Beams and Frames using finite element approach. Find solution to problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method. Solve 2-0 problems using knowledge of theory of elasticity.
CO1 CO2 CO3 CO4 CO5 CO6 COurse Name:- CO1 CO2 CO3 CO4 CO5 CO6	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand membrane theory for internal forces in different shells. Understand different theories of analysis of shells. FINITE ELEMENT METHOD Understand the different energy methods in structural analysis and basic concepts of finite element method. Analyse 1-D problems related to structural analysis like Bars, Trusses, Beams and Frames using finite element approach. Find solution to problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method. Solve 2-D problems using knowledge of theory of elasticity. Students will be able to implement the knowledge of numerical methods in FEM to find the solution to the various problems in statics and dynamic.
CO1 CO2 CO3 CO4 CO5 CO6 COUrse Name:- CO1 CO2 CO3 CO4 CO5 CO6	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand different theories of analysis of shells. Understand different theories of analysis of shells. Understand different theories of analysis of shells. Understand the different energy methods in structural analysis and basic concepts of finite element method. Analyse 1-D problems related to structural analysis like Bars, Trusses, Beams and Frames using finite element approach. Find solution to problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method. Solve 2-D problems using knowledge of theory of elasticity. Students will be able to implement the knowledge of numerical methods in FEM to find the solution to the various problems in statics and dynamic. Analyse 1-D, 2D, and 3D structures using different software packages based on FEM.
CO1 CO2 CO3 CO4 CO5 CO6 COUrse Name:- CO1 CO2 CO3 CO4 CO5 CO6	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand different theories of analysis of shells. Understand different theories of analysis of shells. Understand different theories of analysis of shells. Understand the different energy methods in structural analysis and basic concepts of finite element method. Analyse 1-D problems related to structural analysis like Bars, Trusses, Beams and Frames using finite element approach. Find solution to problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method. Solve 2-D problems using knowledge of theory of elasticity. Students will be able to implement the knowledge of numerical methods in FEM to find the solution to the various problems in statics and dynamic. Analyse 1-D, 2D, and 3D structures using different software packages based on FEM.
CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO3 CO4 CO5 CO6 CO6 CO6 CO7 CO6 CO7	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand membrane theory for internal forces in different shells. Understand different theories of analysis of shells. Understand different theories of analysis of shells. Understand the different energy methods in structural analysis and basic concepts of finite element method. Analyse 1-D problems related to structural analysis like Bars, Trusses, Beams and Frames using finite element approach. Find solution to problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method. Students will be able to implement the knowledge of theory of elasticity. Students will be able to implement the knowledge of numerical methods in FEM to find the solution to the various problems in statics and dynamic. Analyse 1D, 2D, and 3D structures using different software packages based on FEM. DESIGN OF COLD FORMED STEEL STRUCTURES
CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO0F CO0F CO1 CO1 CO1 CO1 CO1 CO2 CO3 CO4 CO5 CO6 CO0F CO0F CO0F CO0F CO0F CO1	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand and membrane theory for internal forces in different shells. Understand membrane theory for internal forces in different shells. Understand different theories of analysis of shells. PRINTE ELEMENT METHOD Understand the different energy methods in structural analysis and basic concepts of finite element method. Analyse 1-D problems related to structural analysis like Bars, Trusses, Beams and Frames using finite element approach. Find solution to problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method. Solve 2D problems using knowledge of theory of elasticity. Students will be able to implement the knowledge of numerical methods in FEM to find the solution to the various problems in statics and dynamic. Analyse 1.D, 2.D, and 3D Structures using different software packages based on FEM. DESIGN OF COLD FORMED STEEL STRUCTURES Understand the types of cross sections, mechanical and thermal properties and applications of cold formed steel structures.
CO1 CO2 CO3 CO4 CO5 CO6 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO5 CO6 COCOCCOCCOCCOCCOCCOCCOCCOCCOCCOCCOCCOCC	THEORY OF PLATE'S & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand membrane theory for internal forces in different shells. Understand different theories of analysis of shells. FINITE ELEMENT METHOD Understand the different energy methods in structural analysis and basic concepts of finite element method. Analyses 1-D problems related to structural analysis like Bars, Trusses, Beams and Frames using finite element approach. Finite solution to problems using direct approach methods like Rayleigh- Ritz or Galerisin's Method. Solve 2-D problems using knowledge of theory or elastically. Students will be able to implement the knowledge of numerical methods in FEM to find the solution to the various problems in statics and dynamic. Analyses 1D, 2D, and 3D structures using different software packages based on FEM. DESIGN OF COLD FORMED STELL STRUCTURES Understand the design criteria and strength of thin elements and analyse various cross section for strength in tension, compression, flexure Design the CFS flexural members.
CO1 CO2 CO3 CO4 CO5 CO6 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO0	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing different theories of analysis of shells. Understand members theories of analysis of shells. Independent theories of analysis of shells. Understand the different energy methods in structural analysis sind basic concepts of finite element method. Independent the design of the structural analysis sind basic concepts of finite element approach. Find solution to problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method. Solve 2-0 problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method. Solve 2-0 problems using fineed paper deflected shape of rectangular plate element approach. Solve 2-0 problems using fineed plate of theory of elasticity. Students will be able to implement the knowledge of numerical methods in FEM to find the solution to the various problems in statics and dynamic. Analyse 10, 20, and 30 structures using different software packages based on FEM. Understand the kypes of cross sections, mechanical and thermal properties and applicatio
CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO7 CO6 CO7	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand membrane theory for internal forces in different shells. Understand membrane theory for internal forces in different shells. PRINTE ELEMENT METHOD FINAL ELEMENT METHOD Understand the different energy methods in structural analysis like Bars, Trusses, Beams and Frames using finite element approach. Find solution to problems related to structural analysis like Bars, Trusses, Beams and Frames using finite element approach. Find solution to problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method. Solve 2-0 problems using knowledge of theory of elasticity. Students will be able to implement the knowledge of numerical methods in FEM to find the solution to the various problems in statics and dynamic. Analyze 1-D problems stelling different software packages based on FEM. Understand the types of cross sections, mechanical and thermal properties and applications of cold formed steel structures. Understand the types of cross sections, mechanical and thermal properties and applications of cold formed steel structures. Understand the degis criteria and strength of this elements and analyse various cross section for strength in tension, compression, flexure Design the CFS neuroless subjected to axial load and bending.
CO1 CO2 CO3 CO4 CO5 CO6 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO0	THEORY OF PLATES & SHELLS Understand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing different theories of analysis of shells. Understand members theories of analysis of shells. Independent theories of analysis of shells. Understand the different energy methods in structural analysis sind basic concepts of finite element method. Independent the design of the structural analysis sind basic concepts of finite element approach. Find solution to problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method. Solve 2-0 problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method. Solve 2-0 problems using fineed paper deflected shape of rectangular plate element approach. Solve 2-0 problems using fineed plate of theory of elasticity. Students will be able to implement the knowledge of numerical methods in FEM to find the solution to the various problems in statics and dynamic. Analyse 10, 20, and 30 structures using different software packages based on FEM. Understand the kypes of cross sections, mechanical and thermal properties and applicatio
CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO4 CO5 CO6 CO01 CO1 CO2 CO1 CO2 CO1 CO2 CO3 CO4 CO5 CO6 CO01 CO2 CO3 CO4 CO5 CO6 CO01 CO2 CO5 CO6 CO01 CO2 CO3 CO4 CO5 CO6 CO01 CO5 CO6 CO01 CO5 CO6 CO6 CO01 CO5 CO6 CO6 CO6 CO7	THEORY OF PLATES & SHELLS Conderstand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand different theories of analysis of shells. Understand different theories of analysis of shells. Understand the different theories of analysis of shells. Understand the different energy methods in structural analysis land basic concepts of finite element method. Analyse 1-D problems related to structural analysis like Barr, Trusses, Beams and Frames using finite element approach. Find solution to problems using direct approach methods like Rayleigh – Ritz or Galerkin's Method. Solve 2-D problems using knowledge of theory of elasticity. Sudents uitle able to implement the knowledge of numerical methods in FRM to find the solution to the various problems in statics and dynamic. Analyse 1D, 2D, and 3D structures using different software packages based on FEM. Understand the types of consections, mechanical and thermal properties and applications of cold formed steel structures. Understand the design criteria and strength of thin elements and analyse various cross section for strength in tension, compression, flexure Design the CFS flexural members. Design the CFS compression members. Design the CFS compression members.
CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO0F Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO0F CO7	THEORY OF PATES & SHELLS Indicestand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand and derive governing differential equation for deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate For various badding and support conditions. Understand membrane theory for internal forces in different shells. Understand membrane theory for internal forces in different shells. Understand the different theories of analysis of shells. Understand the different theories of analysis of shells. Understand the different theories of structural analysis in structural analysis and basic concepts of finite element nembrane Understand the different energy methods in structural analysis and basic concepts of finite element approach. Indication to problems related to structural analysis in the Barry, Trusses, Beams and Frames using finite element approach. Indication to problems using direct approach methods like Rayleigh – Ritto of Selevish's Method. Solve 2-0 problems using knowledge of theory of elasticty. Solve 2-10 problems using knowledge of theory of elasticty. Solve 2-10 problems using knowledge of theory of elasticty. Solve 2-10 problems using knowledge of theory of elasticty in the solve of the various problems in statics and dynamic. Analyse 1-0, 2.0, and 30 structures using different software packages based on FEM. Understand the elegis of cross scientism, enchanical and thermal properties and applications of cold formed steel structures. Understand the elegis of cross scientism, enchanical and thermal properties and applications of cold formed steel structures. Un
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CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO0F Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO0F Name:- CO5 CO6 CO5 CO6 CO7	THEORY OF PATES & SHELLS Indicestand and derive governing differential equation for deflected shape of rectangular plates Solve governing differential equation of deflected shape of circular plate for various loading and support conditions. Understand and derive governing differential equation for deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate Solve governing differential equation of deflected shape of circular plate For various badding and support conditions. Understand membrane theory for internal forces in different shells. Understand membrane theory for internal forces in different shells. Understand the different theories of analysis of shells. Understand the different theories of analysis of shells. Understand the different theories of structural analysis in structural analysis and basic concepts of finite element nembrane Understand the different energy methods in structural analysis and basic concepts of finite element approach. Indication to problems related to structural analysis in the Barry, Trusses, Beams and Frames using finite element approach. Indication to problems using direct approach methods like Rayleigh – Ritto of Selevish's Method. Solve 2-0 problems using knowledge of theory of elasticty. Solve 2-10 problems using knowledge of theory of elasticty. Solve 2-10 problems using knowledge of theory of elasticty. Solve 2-10 problems using knowledge of theory of elasticty in the solve of the various problems in statics and dynamic. Analyse 1-0, 2.0, and 30 structures using different software packages based on FEM. Understand the elegis of cross scientism, enchanical and thermal properties and applications of cold formed steel structures. Understand the elegis of cross scientism, enchanical and thermal properties and applications of cold formed steel structures. Un
CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO4 CO5 CO6 CO6 CO07 CO1 CO2 CO3 CO4 CO5 CO6 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	THE FLEMENT METHOD Analyse 1 or proteins using knowledge of trustural analysis and basic concepts of finite element method. Analyse 1 or proteins using knowledge of trustural analysis and basic concepts of finite element method. Solve 2 or proteins using knowledge of trustural analysis and basic concepts of finite element approach. Fled Solve 1 or proteins using knowledge of trustural analysis and basic concepts of finite element approach. Fled Solve 1 or proteins using knowledge of trustural analysis and basic concepts of finite element method. Fled Solve 1 or proteins using fired retains the surface of trustural analysis and basic concepts of finite element method. Fled Solve 1 or proteins using fired element method. Fled Solve 1 or proteins using fired element method. Solve 2 or proteins using knowledge of theory of elasticity. Solve 2 or proteins using knowledge of theory of elasticity. Solve 3 or proteins using knowledge of theory of elasticity. Solve 3 or proteins using knowledge of theory of elasticity. Solve 5 or COLD FORMED STEEL STRUCTURES DESIGN OF COLD FORMED STEEL STRUCTURES Life of the support of the solve the support of the solve the support of the solve the support of the
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CO1 CO2 CO3 CO4 CO5 CO6 CO07 CO1 CO2 CO3 CO4 CO5 CO6 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	NOTION OF ATES & SHELS Understand and derive governing differential equation for deflected shape of rectangular plates Sobe governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation for deflected shape of rectangular plate for various loading and support conditions. Understand and derive governing differential equation of deflected shape of rectangular plate for various loading and support conditions. Understand membrane theory for internal forces in different shape. Understand membrane theory for internal forces in different shape. PRINTE LEMBERT METHOD PRINTE LEMBERT METHOD Analyses 1-0 problems related to structural analysis and basic concepts of finite element method. Analyses 1-0 problems related to structural analysis and basic concepts of finite element method. Analyses 1-0 problems suited direct approach methods like Raylegia—Ritt or desertinis Method. Society 2-0 problems using direct approach methods like Raylegia—Ritt or desertinis Method. Society 2-0 problems using direct approach methods like Raylegia—Ritt or desertinis Method. Society 2-0 problems using direct approach methods like Raylegia—Ritt or desertinis Method. Society 2-0 problems using direct approach methods like Raylegia—Ritt or desertinis Method. Society 2-0 problems using direct approach methods like Raylegia—Ritt or desertinis Method. Society 2-0 problems using direct approach methods like Raylegia—Ritt or distriction. Society 2-0 problems using direct approach methods like Raylegia—Ritt or distriction. Society 2-0 problems using direct approach methods like Raylegia—Ritt or distriction. Society 2-0 problems using direct approach methods like Raylegia—Ritt or distriction. Society 2-0 problems using direct approach methods like Raylegia—Ritt or distriction. Society 2-0 problems using direct approach methods like Raylegia—Ritt or distriction. Society 2-0 problems using direct approach methods like Raylegi
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CO6	Analyse and interpret the data, results and to conclude the final results.
	S.Y. M.Tech Sem-IV
Course Name:-	Project Stage-II
CO1	Solve identified technical problem using acquired knowledge and skill.
CO2	Use latest equipment, instruments, software tools, infrastructure and learning resources available to solve the identified project problem. Procure resources, if required.
соз	Interpret theoretical/experimental findings using available tools
CO4	Compare the results obtained with results of similar studies
CO5	Draw conclusions based on the results.
	ELECTRICAL ENGINEERING
	S.Y. B Tech Part-II Sem-IV
	ELECTRICAL MACHINES - I
CO1	To study diff. types, construction and operating principle of diff. types of electrical machines
Course Name:-	ELECTRICAL INSTALLATION AND ESTIMATION
CO1	To prepare estimates and costing of electrical installations of power system, To understand procedures of contracting and purchase
Course Name:-	NUMERICAL METHODS AND PROGRAMMING
	To study and understand MATLAB programming.
CO2	To review mathematical concepts
CO3	To develop computer program for linear and nonlinear equations.
_	PAIN DELIVED
	SOLID STATE DEVICES
CO1	To study construction and characteristics of solid state devices.
CO2	To apply operational amplifier models in circuits employing negative feedback.
CO3	To design electronics circuit using Timer IC and voltage regulators.
CO4	To perform analysis of amplifiers using small signal models for the circuit elements.
CO5	To calculate the frequency response of circuits containing BJT, Op-Amp etc
Course Name:-	ANALOG AND DIGITAL ELECTRONICS
CO1	To review basic number system
CO2	To understand deign and characteristics of digital logic gates.
соз	To study different techniques in use of digital circuits.
CO4	To design digital systems
Course Name:-	ELECTRO MAGNETIC THEORY
CO1	To understand vector relations in diff. forms
CO2	To analyze diff. laws and their solution
соз	
CO3	To study about magneto static
CO4	To study about magneto static To understand time varying field and effect of magnetism in transmission line
CO4	To study about magneto static
CO4	To study about magneto static To understand time varying field and effect of magnetism in transmission line INDUSTRIAL SAFETY
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CO4 Course Name:- CO1 CO2 Course Name:- CO1 CO2 CO3 CO4 CO5 CO5 CO6 CO6 CO6 CO6 CO7	To understand filter outprise fastly in industrial environment To understand importance of safety in industrial environment To understand inflorent safety posculutes in an industrial environment INTRODUCTION TO NON-CONVENTIONAL ENERGY SOURCES To review energy scenario. To understand back concepts, construction and operational features of different non-conventional sources. SOFTWARE TICHINQUES To understand different techniques of software models To understand everification and validation of software. To analyze software project management E.P. Part II Sem IV Advanced Electrical Measurements Demonstrate different types of meters Analyze passive transducers Collidate active transducers Descriptional electronechanical transducers Descriptional electronechanical transducers Descriptional electronechanical transducers Descriptional electronechanical transducers Descriptional features description and classification of signals. Analyze the isjanit transmission using Fourier transform Understand the need of modulation, Demodulation process and applications of communications systems. Design the super heterodyne AM receiver, Description for instantanceus requirers, bush with of the gime modulated waves compare with AM system Discription for instantanceus requirers, bush with office of modulation techniques.
CO4 Course Name:- CO1 CO2 Course Name:- CO1 CO2 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO6 CO6 CO7	To understand inter varying field and effect of magnetism in transmission line NUDSTRIAL SAFEY To understand importance of afterly in industrial environment To understand different safety pricedures in an industrial environment NTRODUCTION TO NON CONVENTIONAL ENERGY SOURCES To understand ablack concepts, construction and operational features of different non-conventional sources. SOFTWARE TECHNIQUES To understand different techniques of software models To understand termination and validation of software. To analyse software project management FL-Partil Semin Abusine software project management Expansive transduces Explaint active transduces Communication Engineering. Explaint terestorics communication and classification of signals. Analyse the signal transmission using fourier transform Understand the need of modulation, Demodulation process and applications of communications systems. Design the super heterodyne AM receiver, Exclusion of the connection of instantances of sequence, Isaan widow the fingel Internation theory and coding. Solida Data Transmission, Optical communication systems, Cellular telephony, Information theory and coding.
CO4 Course Name:- CO1 CO2 Course Name:- CO1 CO2 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 Course Name:- CO6 COCO COC COCO COC COCO COCO COC COCO COCO C	To understand inter varying field and effect of magnetism in transmission line NUDSTRIAL SAFEY To understand importance of afterly in industrial environment To understand different safety pricedures in an industrial environment NTRODUCTION TO NON CONVENTIONAL ENERGY SOURCES To understand ablack concepts, construction and operational features of different non-conventional sources. SOFTWARE TECHNIQUES To understand different techniques of software models To understand termination and validation of software. To analyse software project management FL-Partil Semin Abusine software project management Expansive transduces Explaint active transduces Communication Engineering. Explaint terestorics communication and classification of signals. Analyse the signal transmission using fourier transform Understand the need of modulation, Demodulation process and applications of communications systems. Design the super heterodyne AM receiver, Exclusion of the connection of instantances of sequence, Isaan widow the fingel Internation theory and coding. Solida Data Transmission, Optical communication systems, Cellular telephony, Information theory and coding.
CO4 Course Name:- CO1 CO2 Course Name:- CO1 CO2 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 Course Name:- CO6 COCO COC COCO COC COCO COCO COC COCO COCO C	To sude y about magneto static To understand time varying field and effect of magnetam in transmission line MINOUTRAILS ASPT To understand dimportance of safety in industrial environment To understand different safety procedures in an industrial environment MINOUTRAILS ASPT To review energy scenario. To review energy scenario. To understand different safety procedures in an industrial environment MINOUTRAIL SAFETY TO review energy scenario. To understand basic concepts, contrustors and operational features of different non-conventional sources. SOFTWARE TECHNIQUES To understand different techniques of software models To understand environment To understand
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CO4 Course Name:- CO1 CO2 Course Name:- CO1 CO2 CO3 CO3 CO4 CO5 CO6 CO6 CO07 CO2 CO3 CO4 CO5 CO6 CO6 CO07 CO7 CO7 CO7 CO7 CO7 CO7 CO7 CO7 CO7 CO	To substitute different safety procedures in an intramession line To understand min varying field and effect of magnetism in tramension line To understand different safety procedures in an industrial environment To understand different safety procedures in an industrial environment To understand substitute safety procedures in an industrial environment To understand substitute safety procedures in an industrial environment To understand different safety procedures in an industrial environment To understand substitute safety procedures in an industrial environment To understand safet concepts, contravtion and operational features of different non conventional sources. To understand different techniques of software models To understand effective in types of meters Advanced Electrial Measurements Demonstrates effective types of meters Demonstrates effective types of meters Demonstrates offerent types of meters Demonstrate offerent paper of meters Demonstrated electrometry sources of electrical communications and designation of spals. Analyse the signal transmission using fourier transform Demonstrate of electrical communications and designations of spals. Analyse the signal transmission using fourier transform Demonstrate of meters of mediation, Demonstrates systems, Design the spale heterodyne AM receiver, Designate the concept of institutions frequency, bard width of angle modulated waves compare with AM system Designate the concept of institutions of requency, bard width of angle modulated waves compare with AM system Designated believes to s
CO4 Course Name:- CO1 CO2 Course Name:- CO1 CO2 CO3 CO3 CO4 CO5 CO6 CO6 CO6 CO7	To understand time why field and effect of magnetism in transmission fire MINISTRIAL SAFETY To understand different safety procedures in an industrial environment. To understand different safety procedures in an industrial environment. To understand different safety procedures in an industrial environment. To review energy scenario. To review energy scenario. To review energy scenario. To understand different safety procedures in an industrial environment. To understand different safety procedures in an industrial environment. To review energy scenario. To understand subscisconespty, construction and aperational features of different non-conventional sources. SOFF Understand subscisconespty scenario. To understand different safety passed software mobils To understand different safety passed software mobils To understand subscisconespt construction and validation of software. To subsciss software project management Tabella Service project management To subsciss software project management To subsciss softwar
CO4 Course Name:- CO1 CO2 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO7	To condensation time surpring field and effect of magnetism in transmission line To condensation time surpring field and effect of magnetism in transmission line To condensation dispersance of safety in industrial environment To condensation disferent surfry procedures in an industrial invironment To condensation disferent surfry procedures in an industrial invironment To revoke employance of safety in industrial tervironment To understand different schriliques of oriflware models To understand different schriliques of oriflware models To understand different schriliques of oriflware models To understand verification and variabilism of oriflware. To safety employance of the safety oriflware in an industrial industrial oriflware in a constitution of oriflware in a constitution of oriflware in a constitution of oriflware in the process of industrial industrial oriflware in a constitution of oriflware in the process of industrial indu
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Course Name:-	Power System-III
	Recall Power System Stability & Control
	Explain Different Types Power System Stability
	Summarize the Methods Of Improving Stability
	Compare Different Methods Of Power System Control With Steady State Analysis And Dynamic Response Of An Isolated Power System
COS	Detect Optimal Power System Operation
CO6	Demonstrate Power System Security
Course Name:-	Electrical Drives
CO1	Describe the construction/working principle of different types of drives and types of loads and their characteristics.
CO2	Understand control of dc motor by Single & Three phase Converter.
	Understand the control of dc motor by Chopper
	United State of the Control of the Control of State of Frequency Control Methods.
	Summaries the various types of induction motor drives Rotor side control
COB	Classify the Synchronous Motor Drives and Control Mechanisms.
	B.E. Sem-VIII
Course Name:-	Law for Engineers
CO1	To appreciate the basic principle HVDC system and overall HVDC system.
CO2	To be acquainted with the basic concepts grid control and characteristics.
соз	To learn the different methods for protection of HVDC system.
CO4	To recognize the harmonics in HVDC system and use of different filters in HVDC system.
COS	To comprehend the basic concepts for reactive power compensation in HVDC system.
	To realize the different types of multi-terminal DC Systems.
	W 12 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
Cours- N-	EHVAC
	Describe the Engineering aspect and growth of EHVAC Transmission line and explain various power system characteristics.
	Calculations of line and ground power system parameters and their properties.
	Discriminate voltage gradients of conductor for EHVAC.
	Estimate theory of the traveling waves and standing wave.
COS	Distinguish lighting and lighting protection.
CO6	Identify over voltage in EHVAC system.
CO7	Describe power frequency voltage control and over voltage.
CO8	Define the Insulation Co-ordinations.
Course Name:-	Electrical Generation and Utilization
	To empathize the Conventional Energy Sources:
	Basic Concepts of Solar Energy Technology
	Basic Concepts of Wind Energy Technology
CO4	Application of Electrical Energy ((Electric Heating and Welding)
COS	Application of Electrical Energy(Transportation Ex: Traction
CO5	
CO5	Application of Electrical Energy(Transportation Ex: Traction
CO5	Application of Electrical Energy(Transportation Ex: Traction
CO5	Application of Electrical Energy(Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors
CO5 CO6 Course Name:-	Application of Electrical Energy(Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit
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CO5 CO6 Course Name:- CO1 CO2 CO3	Application of Electrical Energy(Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers
CO5 CO6 Course Name:- CO1 CO2 CO3	Application of Electrical Energy (Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems.
CO5 CO6 Course Name:- CO1 CO2 CO3 CO4	Application of Electrical Energy(Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems. Decide the energy conservation and energy efficiency opportunities in the systems.
CO5 CO6 Course Name:- CO1 CO2 CO3 CO4 CO5	Application of Electrical Energy(Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems. Decide the energy conservation and energy efficiency opportunities in the systems. Prepare action plan to monitor energy consumption pattern of systems and processes. Compute the energy saving potential in electrical and thermal utilities.
COS COG Course Name:- CO1 CO2 CO3 CO4 CO5 CO6	Application of Electrical Energy (Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems. Decide the energy conservation and energy efficiency opportunities in the systems and processes.
CO5 CO4 CO2 CO3 CO4 CO5 CO6 CO7	Application of Electrical Energy(Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems. Decide the energy conservation and energy efficiency opportunities in the systems. Prepare action plan to monitor energy consumption pattern of systems and processes. Compute the energy saving potential in electrical and thermal utilities. Prepare detailed energy audit report of system or processes.
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CO5 CO6 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 Course Name:- CO1	Application of Electrical Energy (Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems. Decide the energy conservation and energy efficiency opportunities in the systems. Prepare action plan to monitor energy consumption pattern of systems and processes. Compute the energy saving optential in electrical and thermal utilities. Prepare detailed energy audit report of system or processes. Law for engineers To understand Fundamental Rights, Judicial Structure
COS COG Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 Course Name:- CO1 CO2	Application of Electrical Energy (Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems. Decide the energy conservation and energy efficiency opportunities in the systems. Prepare action plan to monitor energy consumption pattern of systems and processes. Compute the energy saving potential in electrical and thermal utilities. Prepare detailed energy audit report of system or processes. Law for engineers To understand Fundamental Rights, Judicial Structure To understand Human Rights in Indian tradition and specialized agencies
COS COG Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 Course Name:- CO1 CO2 CO3	Application of Electrical Energy (Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems. Decide the energy conservation and energy efficiency opportunities in the systems. Prepare action plan to monitor energy consumption pattern of systems and processes. Compute the energy saving potential in electrical and thermal utilities. Prepare action plan to monitor energy or system or processes. Law for engineers To understand Fundamental Rights, Judicial Structure To understand Human Rights in Indian tradition and specialized agencies To understand Intellectual property rights and Concept, historical perspective of patents law in India
COS COUTSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 Course Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO6 CO7	Application of Electrical Energy(Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems. Decide the energy conservation and energy efficiency opportunities in the systems. Prepare action plan to monitor energy consumption pattern of systems and processes. Compute the energy saving potential in electrical and thermal utilities. Prepare detailed energy audit report of system or processes. To understand Fundamental Rights, Judicial Structure To understand Fundamental Rights, Indian tradition and specialized agencies To understand Human Rights in Indian tradition and specialized agencies To understand Right to Information Act, 2005 covering, Evolution and concept; Practice and procedures
COS COUTSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 Course Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO6 CO7	Application of Electrical Energy (Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems. Decide the energy conservation and energy efficiency opportunities in the systems. Prepare action plan to monitor energy consumption pattern of systems and processes. Compute the energy saving potential in electrical and thermal utilities. Prepare action plan to monitor energy or system or processes. Law for engineers To understand Fundamental Rights, Judicial Structure To understand Human Rights in Indian tradition and specialized agencies To understand Intellectual property rights and Concept, historical perspective of patents law in India
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COS COG COUTSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 Course Name:- CO1 CO2 CO3 CO4 CO5 COCO COCO	Application of Electrical Energy(Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems. Decide the energy conservation and energy efficiency opportunities in the systems. Prepare action plan to monitor energy consumption partner of systems and processes. Compute the energy saving potential in electrical and thermal utilities. Prepare detailed energy audit report of system or processes. Law for engineers To understand Fundamental Rights, Judicial Structure To understand Fundamental Rights, Judicial Structure To understand Human Rights in Indian tradition and specialized agencies To understand Intellectual property rights and Concept, historical perspective of patents law in India To understand Corporate Law, Meaning of corporation; international norms for control, FEMA 1999, M.TECH. LSEM II AC/ DC DRIVES Esplain the basics of Electrical Drives.
COS COG Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 Course Name:- CO1 CO2 CO3 CO4 CO5 COCO COCO	Application of Electrical Energy(Transportation Ex. Traction Energy Consumption analysis & Control Technique in DC Motors Entitical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems. Deside the energy consumption pattern of systems and processes. Compute the energy consumption pattern of systems and processes. Compute the energy south report of system or processes. Compute the energy south report of system or processes. To understand Fundamental Rights, Judicial Structure To understand Fundamental Rights, Judicial Structure To understand Human Rights in Indian tradition and specialized agencies To understand Intellectual property rights and Concept, historical perspective of patents law in India To understand Corporate Law, Meaning of corporation, international norms for control, FEMA 1999, M. TECH, LSEM III M. TECH, LSEM III M. TECH, LSEM III Develop the closed loop controlled DC drives.
COS COG COUTSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 COUTSE Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5	Application of Electrical Energy(Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Energy Consumption analysis & Control Technique in DC Motors Entertrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems. Classify energy intensive systems. Prepare action plan to monitor energy consumption pattern of systems and processes. Compute the energy consumption pattern of systems and processes. Compute the energy saving potential in electrical and thermal utilities. Prepare detailed energy audit report of system or processes. Low for engineers To understand Fundamental Rights, Judicial Structure To understand Fundamental Rights, Judicial Structure To understand Human Rights in Indian tradition and specialized agencies To understand Intellectual property rights and Concept, historical perspective of patents law in India To understand Right to Information Act, 2005 covering, Evolution and concept; Practice and procedures MECH, ISSM II AC/ OC DRIVES Explain the Basis of Electrical Drives. Develop the closed loop controlled DC drives. Develop the closed loop controlled DC drives.
COS COG COUTSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO1 CO2 CO3 CO4 CO5 CO2 CO3 CO4 CO5 CO4 CO5 COCO CO2 CO3 CO4 CO5 COCO COCO COCO COCO COCO COCO C	Application of Electrical Energy(Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems. Decide the energy conservation and energy efficiency opportunities in the systems. Pepare action plan to monitor energy consumption pattern of systems and processes. Compute the energy swile potential in electrical and thermal utilities. Prepare detailed energy audit report of system or processes. Law for engineers To understand Fundamental Rights, Judicial Structure To understand Human Rights in Indian tradition and specialized agencies To understand Human Rights in Indian tradition and specialized agencies To understand Rights to Information Act, 2005 covering, Evolution and concept; Practice and procedures To understand Corporate Law, Meaning of corporation; international norms for control, FEMA 1999, M.TECH, I,SEM II AC/ OC DRIVES Explain the basics of Electrical Drives. Explain the basic of Electrical Drives. Explain the basic methods of speed control of Induction motor.
COS COUTSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 COUTSE Name:- CO1 CO2 CO3 CO4 CO5 COCO	Application of Electrical Energy/Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Distribution Transformers Classify energy intensive systems. Decide the energy conservation and energy efficiency opportunities in the systems. Decide the energy conservation and energy efficiency opportunities in the systems. Prepare action plan to monitor energy consumption pattern of systems and processes. Compute the energy saving potential in electrical and thermal utilities. Prepare detailed energy audit report of systems or processes. Law for engineer To understand Flaghts, Judicial Structure To understand Intellectual property rights and Concept, historical perspecture of patents law in India To understand Intellectual property rights and Concept, historical perspecture of patents law in India To understand Right to Information Act, 2005 covering, Evolution and concept; Practice and procedures To understand Right to Information Act, 2005 covering, Evolution and concept; Practice and procedures To understand Right to Information Act, 2005 covering, Evolution and concept; Practice and procedures To understand Right to Information Act, 2005 covering, Evolution and concept; Practice and procedures To understand Right to Information Act, 2005 covering, Evolution and concept; Practice and procedures To understand Right to Information Act, 2005 covering, Evolution and concept; Practice and procedures Explain the basics of Electrical Drives. Develop the loosed loop controlled DC drives. Develop the modern tends of DC Deves. Explain the basics of Electrical Drives for controlling the speed of Induction motor. Apply the various speed control methods for controlling the speed of Induction motor.
COS COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 Course Name:- CO2 CO3 CO4 CO5 CO6 CO7	Application of Electrical Tenergy (Transportation Ex: Traction Energy Consumption analysis & Control Technique in DC Motors Electrical maintenance and electrical energy audit Understand procedure for electrical maintance Understand Maintenance of Electrical maintance Understand Intellectry Intellectry (State of Electrical Maintenance of Electrical E
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CO2	Identify and describe the haris principles and methodologies advated in energy quidt of utility
	Identify and describe the basic principles and methodologies adopted in energy audit of utility
CO3	Describe the energy performance evaluation of some common electrical and thermal installations and identify the energy saving opportunities.
CO4	Analyze the data collected during performance evaluation and recommend energy saving measures
	M.Tech. II (Electrical Engs.) SEM IV
	PROJECT PHASE-II
CO1	Impliment software and / or hardware model of proposed work
CO2	Perform analysis in detail of the proposed work
соз	Validate results obtained of proposed work
CO4	
C04	Demonstrate of proposed work and write dissertion report
	ELECTRONICS ENGINEERING
	S.Y. B Tech Part-II Sem-IV
Course Name:-	Electrical Machines and Instruments
Course Name:-	Electrical machines and misculments
CO1	The ability to formulate and then analyze the working of any electrical machine using mathematical model under loaded and unloaded conditions.
CO2	The skill to analyze the response of any electrical machine.
соз	The ability to troubleshoot the operation of an electrical machine.
CO4	The ability to select a suitable measuring instrument for a given application.
CO5	The ability to estimate and correct deviations in measurements due to the influence of the instrument and due to the accuracy of the instrument.
Course Name:-	Analog Communication Engineering
CO1	Understand and identify the fundamental concepts and various components of analog communication systems.
CO2	Understand the concepts of modulation and demodulation techniques.
соз	Design circuits to generate modulated and demodulated wave.
CO4	Equip students with various issues related to analog communication such as modulation, demodulation, transmitters and receivers and noise performance.
CO5	Understand the concepts of modulation and demodulation techniques of angle modulation (frequency and phase).
CO6	Explain signal to noise ratio, noise figure and noise temperature for single and cascaded stages in a communication system.
CO7	Develop the ability to compare and contrast the strengths and weaknesses of various communication systems.
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Course Name:-	Microprocessor
CO1	Learner gains ability to apply knowledge of engineering in designing different case studies.
CO2	Students get ability to conduct experiments based on interfacing of devices to or interfacing to real world applications.
соз	Students get ability to interface mechanical system to function in multidisciplinary system like in robotics, Automobiles.
CO4	Students can identify and formulate control and monitoring systems using microprocessors.
CO5	Students will design cost effective real time system to serve engineering solution for Global, social and economic context.
Course Name:-	Signals and Systems
CO1	Understand mathematical description and representation of continuous and discrete time signals and systems.
CO2	Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system.
CO2	Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system.
соз	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms.
соз	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms.
CO3 CO4 CO5	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event.
CO3	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain.
CO3 CO4 CO5 Course Name:-	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming
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CO3 CO4 CO5 Course Name:-	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming
CO3 CO4 CO5 Course Name:- CO1 CO2	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems
CO3 CO4 CO5 Course Name:- CO1 CO2 CO3	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values
CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & amp; differentiation to do the stability analysis of above techniques
CO3 CO4 CO5 Course Name:- CO1 CO2 CO3	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values
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CO3 CO4 CO5 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO6	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced data values Calculate the numerical integration based on interpolation & amp; differentiation to do the stability analysis of above techniques Understand the concept of POP & amp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool
CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as knows a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & amp; differentiation to do the stability analysis of above techniques Understand the concept of POP & amp; OOP as well as Write and demonstrate computer programs individually in C and C++.
CO3 CO4 CO5 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO6	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced data values Calculate the numerical integration based on interpolation & amp; differentiation to do the stability analysis of above techniques Understand the concept of POP & amp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool
CO3 CO4 CO5 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO6	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced data values Calculate the numerical integration based on interpolation & amp; differentiation to do the stability analysis of above techniques Understand the concept of POP & amp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool
CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 Course Name:-	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & particularly integration to do the stability analysis of above techniques Understand the concept of POP & amp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool Product Design Engineering
CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO07 CO1 CO2 CO1 CO2 CO1 CO2 CO1 CO2 CO2	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & amp; differentiation to do the stability analysis of above techniques Understand the concept of POP & amp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool Product Design Engineering Describe an engineering design and development process Create simple products and create Documentation.
CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 Course Name:- CO6 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & pamp; differentiation to do the stability analysis of above techniques Understand the concept of PDP & pamp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool Product Design Engineering Describe an engineering design and development process Create simple products and create Documentation. Work collaboratively on a team to successfully complete a design project.
CO3 CO4 CO5 COUrse Name:- CO1 CO2 CO3 CO4 CO5 CO6 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO06 CO07 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & particular and demonstrate computer programs individually in C and C++. Understand the concept of PDP & pamp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool Describe an engineering design and development process Create simple products and create Documentation. Work collaboratively on a team to successfully complete a design project. Effectively communicate the results of final product in written and oral format.
CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 Course Name:- CO6 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & pamp; differentiation to do the stability analysis of above techniques Understand the concept of PDP & pamp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool Product Design Engineering Describe an engineering design and development process Create simple products and create Documentation. Work collaboratively on a team to successfully complete a design project.
CO3 CO4 CO5 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO6 CO4 CO5 CO6 CO6 CO6 CO7	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & particular and demonstrate computer programs individually in C and C++. Understand the concept of PDP & pamp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool Describe an engineering design and development process Create simple products and create Documentation. Work collaboratively on a team to successfully complete a design project. Effectively communicate the results of final product in written and oral format.
CO3 CO4 CO5 COURSE Name:- CO2 CO3 CO4 CO5 CO6 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO3 CO4 CO3 CO4	Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & amp; differentiation to do the stability analysis of above techniques Understand the concept of POP & Bamp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool Product Design Engineering Describe an engineering design and development process Create simple products and create Documentation. Work collaboratively on a team to successfully complete a design project. Effectively communicate the results of final product in written and oral format. Soft skill development
CO3 CO4 CO5 COUrse Name:- CO2 CO3 CO4 CO5 CO6 COUrse Name:- CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO3 CO4	Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different underscal techniques as well as know the types and sources of error which will help them for solving complex engineering problems. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & ampt, differentiation to do the stability analysis of above techniques Understand the concept of POP & samp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool Product Design Engineering Describe an engineering design and development process Create simple products and create Documentation. Work collaboratively on a team to successfully complete a design project. Effectively communicate the results of final product in written and oral format. Soft skill development Understand their strengths and weaknesses, type of personality, work preferences, style of communications.
CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO01 CO2 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO4 CO05 CO4 CO07 CO1 CO2 CO3 CO4 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the biasic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & many differentiation to do the stability analysis of above techniques Understand the concept of PDP & Many, OOP as well as Write and demonstrate computer programs individually in C and C++ Understand the operator overloading and type conversion in OOP using engineering Tool Product Design Engineering Describe an engineering design and development process Create simple products and create Documentation. Work collaboratively on a team to successfully complete a design project. Effectively communicate the results of final product in written and oral format. Soft skill development Understand their strengths and weaknesses, type of personality, work preferences, style of communications. Apply the principles of effective communications in learning/working situations.
CO3 CO4 CO5 COURSE Name:- CO2 CO3 CO4 CO5 CO6 COURSE Name:- CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO3 CO4	Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different underscal techniques as well as know the types and sources of error which will help them for solving complex engineering problems. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & ampt, differentiation to do the stability analysis of above techniques Understand the concept of POP & samp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool Product Design Engineering Describe an engineering design and development process Create simple products and create Documentation. Work collaboratively on a team to successfully complete a design project. Effectively communicate the results of final product in written and oral format. Soft skill development Understand their strengths and weaknesses, type of personality, work preferences, style of communications.
CO3 CO4 CO5 COUTSE NAME:- CO1 CO2 CO3 CO4 CO5 CO6 COUTSE NAME:- CO1 CO2 CO3 CO4 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO5 CO5 CO5 CO5 CO6 CO1 COC COC COC COC COC COC COC COC COC	Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the biasic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & many differentiation to do the stability analysis of above techniques Understand the concept of PDP & Many, OOP as well as Write and demonstrate computer programs individually in C and C++ Understand the operator overloading and type conversion in OOP using engineering Tool Product Design Engineering Describe an engineering design and development process Create simple products and create Documentation. Work collaboratively on a team to successfully complete a design project. Effectively communicate the results of final product in written and oral format. Soft skill development Understand their strengths and weaknesses, type of personality, work preferences, style of communications. Apply the principles of effective communications in learning/working situations.
CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO2 CO3	Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, limite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & Barmp; differentiation to do the stability analysis of above techniques Understand the concept of POP & Bamp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool Product Design Engineering Sessor as engineering design and development process Create simple products and create Documentation. Work collaborative on a team to successfully complete a design project. Effectively communicate the results of final product in written and oral format. Soft skill development Understand their strengths and weaknesses, type of personality, work preferences, style of communications. Apply the principles of effective communications in learning/working situations.
CO3 CO4 CO5 COUrse Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 COURSE Name:- CO1 CO2 CO3 CO4 COURSE Name:- CO1 CO2 CO3 CO4 COURSE Name:- CO1 CO2 CO3 CO4 CO4 CO4 CO4 CO4 CO4 CO5 CO5 CO5 CO6	Understand the Imitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendential and linear equations, compare different numerical techniques as well as know the types and sources of error which will help them for solving complex engineering problems. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & ampt, differentiation to do the stability analysis of above techniques Understand the concept of POP & Ramp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool Describe an engineering Describe an engineering design and development process Create simple products and create Documentation. Work collaboratively on a team to successfully complete a design project. Effectively communicate the results of final product in written and oral format. Soft skill development Understand their strengths and weaknesses, type of personality, work preferences, style of communications. Apply the principles and knowledge of effective time, conflict management inlearning/working situations. Develop or improve skills for working effectively in a team.
CO3 CO4 CO5 COUrse Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO2 CO3 CO4 COUrse Name:- CO1 CO2 CO3 CO4 CO4 T.E. Part-II Sem-	Understand that resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the basic concept of Probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as knows the types and sources of error which will help them for solving complex engineering problems. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & Bamp; differentiation to do the stability analysis of above techniques Understand the concept of POP & Bamp; ODP as well as Write and demonstrate computer programs individually in C and C++ Understand the concept of POP & Bamp; ODP as well as Write and demonstrate computer programs individually in C and C++ Understand the concept of POP & Bamp; ODP as well as Write and demonstrate computer programs individually in C and C++ Understand the concept of POP & Bamp; ODP as well as Write and demonstrate computer programs individually in C and C++ Understand the concept of POP & Bamp; ODP as well as Write and demonstrate computer programs individually in C and C++ Understand the concept of POP & Bamp; ODP as well as Write and demonstrate computer programs individually in C and C++ Understand the concept of POP & Bamp; ODP as well as Write and demonstrate computer programs individually in C and C++ Understand the concept of POP & Bamp; ODP as well as Write an
CO3 CO4 CO5 COUrse Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO2 CO3 CO4 COURSE Name:- CO1 CO2 CO3 CO4 COURSE Name:- CO1 CO2 CO3 CO4 CO4 CO1 CO2 CO3 CO4 CO4 CO1 CO2 CO3 CO4 CO4 CO5 CO4 T.E. Part-II Sem-	Understand the Imitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendential and linear equations, compare different numerical techniques as well as know the types and sources of error which will help them for solving complex engineering problems. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & ampt, differentiation to do the stability analysis of above techniques Understand the concept of POP & Ramp; OOP as well as Write and demonstrate computer programs individually in C and C++. Understand the operator overloading and type conversion in OOP using engineering Tool Describe an engineering Describe an engineering design and development process Create simple products and create Documentation. Work collaboratively on a team to successfully complete a design project. Effectively communicate the results of final product in written and oral format. Soft skill development Understand their strengths and weaknesses, type of personality, work preferences, style of communications. Apply the principles and knowledge of effective time, conflict management inlearning/working situations. Develop or improve skills for working effectively in a team.
CO3 CO4 CO5 COUrse Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO2 CO3 CO4 COUrse Name:- CO1 CO2 CO3 CO4 CO4 T.E. Part-II Sem-	Understand that resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the basic concept of Probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as knows the types and sources of error which will help them for solving complex engineering problems. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation & Bamp; differentiation to do the stability analysis of above techniques Understand the concept of POP & Bamp; ODP as well as Write and demonstrate computer programs individually in C and C++ Understand the concept of POP & Bamp; ODP as well as Write and demonstrate computer programs individually in C and C++ Understand the concept of POP & Bamp; ODP as well as Write and demonstrate computer programs individually in C and C++ Understand the concept of POP & Bamp; ODP as well as Write and demonstrate computer programs individually in C and C++ Understand the concept of POP & Bamp; ODP as well as Write and demonstrate computer programs individually in C and C++ Understand the concept of POP & Bamp; ODP as well as Write and demonstrate computer programs individually in C and C++ Understand the concept of POP & Bamp; ODP as well as Write and demonstrate computer programs individually in C and C++ Understand the concept of POP & Bamp; ODP as well as Write an
CO3 CO4 CO5 COURSE Name:- CO2 CO3 CO4 CO5 CO6 COURSE Name:- CO1 CO2 CO3 CO4 CO3 CO4 CO4 CO4 CO4 CO4 CO5 CO5 CO4 CO6 CO6 CO7	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s. domain. Understand the limitations of Fourier transform and need for Laplace transform and evelop the ability to snalyze the system in s. domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as shown the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as shows a proper one as per the requirement of the problem for investigation of complex problems. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced atta values Calculate the numerical integration based on interpolation & Ammy; differentiation to do the stability analysis of above techniques Understand the operator overloading and type conversion in ODP using engineering Tool Understand the operator overloading and type conversion in ODP using engineering Tool Product Design Engineering Create simple products and create Documentation. Understand their strengths and weaknesses, type of personality, work preference, style of communications. Create simple products and create Documentation in written and oral format. Soft skill development Understand their strengths and weaknesses, type of personality, work preference, style of communications. Develop or improve skills for working effectively in a team. Understand their strengths and knowledge of effective time, conflict management inlearning/working situations. Develop or improve skill
CO3 CO4 CO5 COURSE Name:- CO2 CO3 CO4 CO5 CO6 COURSE Name:- CO1 CO2 CO3 CO4 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO2 CO3	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the Limitations of Fourier transform and need for Laplace transform and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as how the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as how the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as shows a seed as shows a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of Interpolation, linite difference operators and their relations, and can apply different interpolation techniques on equi-spaced data values Understand the concept of Interpolation & Barng, differentiation to do the stability analysis of above techniques Understand the concept of Interpolation & Barng, differentiation to do the stability analysis of above techniques Understand the concept of Interpolation & Barng, differentiation to do the stability analysis of above techniques Describe an engineering design and development process Creates simple products and create Documentation. Work collaboratively on a team to successfully complete a design project. Effectively communicate the results of final product in written and oral format. Understand their strengths and weaknesses, type of personality, work preference, style of communications. Apply the principles and knowledge of effective time, conflict management inlearning/working situations. Develop or improve skills for
CO3 CO4 CO5 COUrse Name:- CO6 CO05 CO6 CO07 CO6 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitation or Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & androm signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Namerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of Interpolation, find difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation Ramp, differentiation to do the stability analysis of above techniques Understand the concept of PDP Ramp, CDP as well as Write and demonstrate computer programs individually in C and C++. Understand the concept of PDP Ramp, CDP as well as Write and demonstrate computer programs individually in C and C++. Understand the concept of PDP Ramp, CDP as well as Write and demonstrate computer programs individually in C and C++. Understand the concept of PDP Ramp, CDP as well as Write and oral format. Work collaboratively on a team to successfully complete a design project. Effectively communicate the results of final product in written and oral format. Understand their strengths and weaknesses, type of personality, work preferences, style of communications. Apply the principles of effective communications in learning working situations. Develop or improve skills for working effectively in a team. Understand their strengths and woolvelge of effective term, conflict
CO3 CO4 CO5 COURSE Name:- CO2 CO3 CO4 CO5 CO6 COURSE Name:- CO1 CO2 CO3 CO4 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO2 CO3	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the Limitations of Fourier transform and need for Laplace transform and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as how the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as how the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as shows a seed as shows a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of Interpolation, linite difference operators and their relations, and can apply different interpolation techniques on equi-spaced data values Understand the concept of Interpolation & Barng, differentiation to do the stability analysis of above techniques Understand the concept of Interpolation & Barng, differentiation to do the stability analysis of above techniques Understand the concept of Interpolation & Barng, differentiation to do the stability analysis of above techniques Describe an engineering design and development process Creates simple products and create Documentation. Work collaboratively on a team to successfully complete a design project. Effectively communicate the results of final product in written and oral format. Understand their strengths and weaknesses, type of personality, work preference, style of communications. Apply the principles and knowledge of effective time, conflict management inlearning/working situations. Develop or improve skills for
CO3 CO4 CO5 COUrse Name:- CO6 CO05 CO6 CO07 CO6 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitation or Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & androm signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Namerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of Interpolation, find difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Calculate the numerical integration based on interpolation Ramp, differentiation to do the stability analysis of above techniques Understand the concept of PDP Ramp, CDP as well as Write and demonstrate computer programs individually in C and C++. Understand the concept of PDP Ramp, CDP as well as Write and demonstrate computer programs individually in C and C++. Understand the concept of PDP Ramp, CDP as well as Write and demonstrate computer programs individually in C and C++. Understand the concept of PDP Ramp, CDP as well as Write and oral format. Work collaboratively on a team to successfully complete a design project. Effectively communicate the results of final product in written and oral format. Understand their strengths and weaknesses, type of personality, work preferences, style of communications. Apply the principles of effective communications in learning working situations. Develop or improve skills for working effectively in a team. Understand their strengths and woolvelge of effective term, conflict
CO3 CO4 CO5 COUrse Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO07 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO4 CO1 CO2 CO3 CO4 CO4 CO4 CO4 CO4 CO5 CO5 CO6 CO6 CO7	Understand that dis eliminations of fourier transform and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendential and linear equations, compare different numerical techniques, so well as known the types and sources of error which will help them for solving complex engineering problems. Solve transcendential and linear equations, compare different numerical techniques as well as known the types and sources of error which will help them for solving complex engineering problems. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values Coulcute the numerical integration based on interpolation Aimany differentiation to do the stability analysis of slowe techniques Understand the concept of POP Aimany, OOP as well as Witte and demonstrate computer programs includeably in C and C++. Understand the concept of POP Aimany, OOP as well as Witte and demonstrate computer programs includeably in C and C++. Understand the concept of POP Aimany, OOP as well as Witte and demonstrate computer programs includeably in C and C++. Understand the concept of POP Aimany, OOP as well as Witte and demonstrate computer programs includeably in C and C++. Understand their strengths and evelopment proces Create simple products and create Documentation. Understand their strengths and evelopment proces Understand their strengths and evelopment products in written and oral format. Soft stall development Understand their strengths and evelopment products in written and oral format. Develop or improve skills for working effectively in a trans. Develop or improve skills for working effectively in a trans. Develop or improve skills for wo
CO3 CO4 CO5 COUrse Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO4 CO1 CO2 CO3 CO4 COURSE Name:- CO1 CO2 CO3 CO4 CO4 COURSE Name:- CO1 CO2 CO3 CO4	Understand that resolve the signals in frequency domain using Fourier series and fourier transforms and need for upsices transforms and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendential and linear equations, compare different numerical inchinques as well as know the types and sources of error which will help them for solving complex engineering problems. Understand the concept of interpolation, compare different numerical inchinques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-appead or non equi-appead or non equi-appead or more equi-appead or non equi-appead or non-equi-appead or non-appead or non-appead or non-appead or non-appead or non-appead or non-appead or non-appea
CO3 CO4 CO5 COUrse Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 COUrse Name:- CO1 CO2 CO3 CO4 CO4 COURSE Name:- CO1 CO2 CO3 CO4 CO4 COURSE Name:- CO1 CO2 CO3 CO4	Understand had resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transforms and ordered for taplote transforms and develop the ability to find correlation, CDF, PDF and probability of a given event. Namerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendential and linear equations, compare different numerical techniques as well as choose a prepar one as per the requirement of the problems for investigation of compiler problems. Calculate the numerical integration based on interpolation Asimp, differentiation to do the stability analysis of above techniques Understand the concept of PDP Ramp, COP as well as Write and demonstrate computer programs includesally in C and C++. Understand the concept of PDP Ramp, COP as well as Write and demonstrate computer programs includesally in C and C++. Understand the concept of PDP Ramp, COP as well as Write and demonstrate computer programs includesally in C and C++. Understand the concept of PDP Ramp, COP as well as Write and demonstrate computer programs includesally in C and C++. Understand the concept of PDP Ramp, COP as well as Write and demonstrate computer programs includesally in C and C++. Understand their strength said and development process Create simple products and create Documentation. Solve till development Understand their strength said development product in written and oral format. One will development Understand their strength and wavelet transforms gituations. Apply the principles and knowledge of effective time, conflict management inleaning/working situations. Porform analysis of signals by using DFT and wavel
CO3 CO4 CO5 COUrse Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO4 CO1 CO2 CO3 CO4 CO4 CO4 CO4 CO4 CO4 CO4 CO5 CO6 CO7	Understand that resolve the signals in frequency domain using Fourier series and fourier transforms and need for upsices transforms and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendential and linear equations, compare different numerical inchinques as well as know the types and sources of error which will help them for solving complex engineering problems. Understand the concept of interpolation, compare different numerical inchinques as well as choose a proper one as per the requirement of the problem for investigation of complex problems Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-appead or non equi-appead or non equi-appead or more equi-appead or non equi-appead or non-equi-appead or non-appead or non-appead or non-appead or non-appead or non-appead or non-appead or non-appea
CO3 CO4 CO5 COUrse Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO4 COUrse Name:- CO1 CO2 CO3 CO4	Understand had resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transforms and ordered for taplote transforms and develop the ability to find correlation, CDF, PDF and probability of a given event. Namerical Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendential and linear equations, compare different numerical techniques as well as choose a prepar one as per the requirement of the problems for investigation of compiler problems. Calculate the numerical integration based on interpolation Asimp, differentiation to do the stability analysis of above techniques Understand the concept of PDP Ramp, COP as well as Write and demonstrate computer programs includesally in C and C++. Understand the concept of PDP Ramp, COP as well as Write and demonstrate computer programs includesally in C and C++. Understand the concept of PDP Ramp, COP as well as Write and demonstrate computer programs includesally in C and C++. Understand the concept of PDP Ramp, COP as well as Write and demonstrate computer programs includesally in C and C++. Understand the concept of PDP Ramp, COP as well as Write and demonstrate computer programs includesally in C and C++. Understand their strength said and development process Create simple products and create Documentation. Solve till development Understand their strength said development product in written and oral format. One will development Understand their strength and wavelet transforms gituations. Apply the principles and knowledge of effective time, conflict management inleaning/working situations. Porform analysis of signals by using DFT and wavel
CO3 CO4 CO5 CO0TSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO0TSE Name:- CO1 CO2 CO3 CO4 CO4 COTES Name:- CO1 CO2 CO3 CO4 CO4 COTES Name:- CO1 CO2 CO3 CO4 CO4 CO5 CO5 CO6 CO6 CO7	Understand and resolve the signals in frequency domain using fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Lupiace transforms. Understand the limitations of Fourier transforms and develop the ability to shally to shally to shally to the source of the Company of the Company variables. It and shall the Company of the Company variables. It and shall the Company of the Company variables. It and shall the Company of
CO3 CO4 CO5 COUTSE NAME:- CO6 CO05 CO6 CO07 CO1 CO2 CO3 CO4 CO07 CO2 CO3 CO4 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	Understand the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Luptace transforms and develop the ability to analyse the system in - domain. Understands the basic concept of probability rown variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Namecal Methods and Computer Programming Use different computational techniques, do the analysis of problems as well as know the types and sources of error which will help them for solving complex engineering problems. Solve transcendental and linear equations, compare different numerical techniques as well as knows a great provide an experiment of the problem for investigation of complex problems Understands the concept of PDF Agents, DOF as well and the event of the problem of investigation of investigation of interpolation, intelligent and experiment and the problems of interpolation, intelligent and experiment and ex
CO3 CO4 CO5 COUTSE NAME:- CO6 CO04 CO5 CO6 CO07 CO04 CO07 CO04 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	Understand the regulation for required you formate using it reprises persons and foreign transforman of receives persons and develope the ability to find correlation. CDF, PDF and probability of a given event. Numerical field basic concept of probability and our analysis of a receive graining and develope the ability to find correlation. CDF, PDF and probability of a given event. Numerical field basic concept of probability and our analysis of problems as well as locus the types and sources of error which will help them for coloring complex engineering problems. Solve transcenderal and interrequisions, compare different numerical techniques as well as locus the types and sources of error which will help them for coloring complex engineering problems. Solve transcenderal and interrequisions, compare different numerical techniques as well as locus the types and sources of error which will help them for coloring complex engineering problems. Caccidate the numerical integration based on interpolation, find difference operators as a proper one as per the requirement of the problems for investigation of complex problems. Caccidate the numerical integration based on interpolation, find and can apply different interpolation ferror interpolation. Find any office of the numerical integration based on interpolation from any office and a White and any office of the numerical integration based on interpolation of the numerical integration based on interpolation from any office and any office of the numerical integration based on interpolation from any office of find Probability of any office of the numerical integration based on interpolation from any office of find Probability of the State of the numerical integration based on interpolation in the state of the state of the numerical integration based on the numerical integration based on the numerical integration based on the numerical integration of the numerical integration of the numerical integration of the numerical integration and of the numerical integration o
CO3 CO4 CO5 Course Name:- CO2 CO3 CO4 CO5 CO6 Course Name:- CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO3 CO5	Understand and resolve the signals in frequency domain using fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Lupiace transforms. Understand the limitations of Fourier transforms and develop the ability to shally to shally to shally to the source of the Company of the Company variables. It and shall the Company of the Company variables. It and shall the Company of the Company variables. It and shall the Company of

CO1	Apply knowledge of power electronics to the analysis and design of power electronic circuit Identify, formulate and solve engineering problems in the area of power electronics
CO2	Identity, formulate and sowe engineering problems in the area of power electronics Function on multidisciplinary teams through experiments and projects
	Design and implementation ac-dc, dc-dc converter topologies
	Design and implementation are way to be contracted topological
6	COMPUTER ARCHITECTURE AND OPERATING SYSTEM
CO1	Design and implement various blocks of Arithmetic Logic Unit
	Design and implement control unit & processor and its analysis
CO3	Know the fundamentals of operating system and its components
	Explain the process management and issues
	Demonstrate classical IPC problems as well as various memory management schemes
Course Name:-	Electronic System design
CO1	Apply knowledge of signal conditioning for different sensor to design process controller
CO2	Identify, formulate and solve engineering problems in the area of biomedical system and digital hardware design
соз	Function in multidisciplinary teams through industrial application experiments and projects
	Design a electronic system, component to meet desired needs within realistic constraints
COS	Use the EMI EMC legislation and standard necessary for electronics engineering practice
Course Name:-	Mini Project
CO1	Use fundamental knowledge to Design of basic electronic circuits
CO2	Perform the analysis of electronic circuits
CO3	Simulate the electronic circuits by using simulation software
CO4	Function on multidisciplinary teams using hardware implementation and testing of electronic circuits
B.E. Part-II Sem-	VIII
Course Name:-	MICROWAVE ENGINEERING
CO1	Analyze the microwave waveguides and passive circuit components.
CO2	Identify and differentiate the state of art in microwave tubes and their uses in real life
CO3	Indentify materials used in MMIC and microwave hazards
	Differentiate solid state devices used in microwave based on their characteristics and operations
CO5	To understand various microwave measurement techniques
CO6	Expose students to different microwave antennas
Course Name:-	WIRELESS COMMUNICATION NETWORK
CO1	Explain wireless networking protocols (Bluetooth, Security etc.), architectures, and standards used for wireless communication systems.
CO2	Apply communication engineering concepts in preparing a link budget and design of cell geometry.
соз	Discuss call establishment procedure.
CO4	Explain the importance of Multiple Access techniques, voice coding techniques and mobility management in GSM network
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Course Name:-	Power Electronics and Drives
Course Name:-	Power Electronics and Drives Ability to analyze and evaluate the three phase controlled converter.
CO1	Ability to analyze and evaluate the three phase controlled converter.
CO1	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools.
CO1 CO2 CO3	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & dc drives.
CO1 CO2 CO3 CO4	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & dc drives.
CO1 CO2 CO3 CO4 Course Name:-	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & dc drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter
CO1 CO2 CO3 CO4 Course Name:-	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & dc drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & dc drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues.
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & dc drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing.
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & cd drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & dc drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application Know the peripheral components of system and the tools used for implementing the system.
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO5	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & dc drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application Know the peripheral components of system and the tools used for implementing the system.
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO5	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & cd crives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and Image Compression
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO5	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & dc drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and Image Compression F.Y. M.Tech Sem-II
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO5	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & dc drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and Image Compression F.Y. M.Tech Sem-II
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & cl drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and Image Compression F.Y. M.Tech Sem-II Advanced DSP
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO5	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & cl cdrives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and Image Compression F.Y. M. Tech Sem-II Advanced DSP Learner will be able to design adaptive filters for a given application
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 COURSE Name:-	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & cl cdrives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and image Compression F.Y. M. Tech Sem-II Advanced DSP Learner will be able to design adaptive filters for a given application Learner will be able to design multirate DSP systems
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO1 CO2 CO3 CO4 CO5 CO1 CO1 CO2 CO3 CO4 CO5	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & dc drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and Image Compression F.Y. M. Tech Sem-II Advanced DSP Learner will be able to design adaptive filters for a given application Learner will be able to design multirate DSP systems Learner will be able to understand different models for spectrum estimation
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO1 CO2 CO3 CO4 CO5 CO1 CO1 CO2 CO3 CO4 CO5	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matlab tools. Understand the fundamental principles and applications ac drives & dc drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and Image Compression F.Y. M.Tech Sem-II Advanced DSP Learner will be able to design adaptive filters for a given application Learner will be able to design multirate DSP systems Learner will be able to understand different methods for Spactrum estimation Learner will be able to understand different methods for Random signal processing
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matiab tools. Understand the fundamental principles and applications ac drives & dc drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and Image Compression E.Y. M.Tech Sem-II Advanced DSP Learner will be able to design adaptive filters for a given application Learner will be able to understand different models for spectrum estimation Learner will be able to understand different models for Random signal processing Learner will be able to perform linear estimation and prediction of random signal Learner will be able to perform linear estimation and prediction of random signal
CO1 CO2 CO3 CO4 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO5 CO6	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matiab tools. Understand the fundamental principles and applications ac drives & dc drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and Image Compression E.Y. M.Tech Sem-II Advanced DSP Learner will be able to design adaptive filters for a given application Learner will be able to understand different models for spectrum estimation Learner will be able to understand different models for Random signal processing Learner will be able to perform linear estimation and prediction of random signal Learner will be able to perform linear estimation and prediction of random signal
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matable books. Understand the fundamental principles and applications ac drives & d drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on CNip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and image Compression F.Y. M.T. Ch. Sem-II Advanced DSP Learner will be able to design adaptive filters for a given application Learner will be able to design adaptive filters for a given application Learner will be able to understand different models for spectrum estimation Learner will be able to understand different methods for Random signal processing Learner will be able to understand different methods for Random signal processing Learner will be able to perform liear estimation and prediction of random signal Learner will be able to perform various operations on given signal Nanot Electronics Learner will be able to acquire basics knowledge of engineering in the field Nano electronics
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO6 CO6 CO6 CO6 CO6 CO6 CO7	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using mattab bools. Understand the fundamental principles and applications ac drives & d drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and Image Compression F.Y. M.Tech Sem-II Advanced DSP Learner will be able to design adaptive filters for a given application Learner will be able to understand different models for spectrum estimation Learner will be able to understand different methods for Random signal processing Learner will be able to understand different methods for Random signal Learner will be able to perform incer estimation and prediction of random signal Learner will be able to perform incer estimation and prediction of random signal Learner will be able to perform various operations on given signal Learner will be able to acquire basics knowledge of engineering in the field Nano electronics Learner will be able to acquire Jasic knowledge of engineering in the field Nano electronics Learner will be able to acquire Jasic knowledge of engineering in the field Nano electronics
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO0	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matable tools. Understand the fundamental principles and applications at drives & did rives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip System on Chip Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application. Know the peripheral components of system and the using single. F.Y. M. Tech Sem-II Ability to design analyze and understand the poperation of inverter & Cycloconverter. F.Y. M. Tech Sem-II Advanced DSP Learner will be able to design adaptive filters for a given application. Learner will be able to design multirate DSP systems Learner will be able to understand different models for spactrum estimation. Learner will be able to understand different models for Random signal processing Learner will be able to perform various operations on given signal Learner will be able to perform various operations on given signal Nano Electronics Learner will be able to acquire basic knowledge of engineering in the field Nano electronics Learner will be able to acquire basic knowledge of MOSEFF, FNET, SO-IMOSEFF which are new generation transistor technology Learner will be able to acquire basic knowledge of MOSEFF, FNET, SO-IMOSEFF which are new generation transistor technology Learner will be able to acquire basic knowledge of MOSEFF, FNET, SO-IMOSEFF which are new generation transistor technology Learner will be able to acquire basic knowledge of MOSEFF, FNET, SO-IMOSEFF which are new generation transistor technology Learner will be able to acquire basic knowledge of MOSEFF, FNET, SO-IMOSEFF which are new generation transistor technology
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO06 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	Ability to snalyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matable tools. Understand the fundamental principles and applications ac drives & ct drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip System on Chip System on Chip Calculate & demonstrate elifterent factors affecting the chip designing. Specify the processors and interconnects nequired for particular applications Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and image Compression Expressive the semilation of the state
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO5 CO6 CO1 CO2 CO3 CO4 CO5	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matable tools. Ability to build power electronic circuits using matable tools. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Ckip System on Ckip Cancellet the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application. Convolute performance is required for particular application. Develop & Analyze the applications like AES algorithm and image Compression P.Y. M. Tech Sem-II Advanced DSP Learner will be able to design adaptive filters for a given application. Learner will be able to understand different models for spectrum estimation. Learner will be able to understand different methods for Random signal processing Learner will be able to understand different methods for Amondom signal Learner will be able to perform incare estimation and precision and precision and precision and precision and precision of random signal Learner will be able to acquire passix knowledge of MOSETT, FINETT, SO-MOSET which are new generation transistor technology Learner will be able to understand and development in field of Nano electronics Devices and Materials which is recent trends in technology Learner will be able to understand and even field on Nano electronics Devices and Materials which is recent trends in technology Learner will be able to understand and even field on Nano electronics Devices and Materials which is recent trends in technology Learner will be able to understand all the recent applications, Engineering Tools and research views to the students
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO06 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matable tools. Understand the fundamental principles and applications ac drives & ct drives. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Chip System on Chip System on Chip Calculate & demonstrate elifterent factors affecting the chip designing. Specify the processors and interconnects nequired for particular applications Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and image Compression Expressive the semilation of the system of the
CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO5 CO6 CO4 CO5 CO6 CO4 CO5 CO6 CO6 CO7	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic crouts using matilab tools. Ability to duil gover electronic crouts using matilab tools. Ability to design, analyze and understand the operation of inverter & cycloconverter. Spate on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculates & demonstrate efficient factors affecting the dry designing. Specify the processors and interconnects required for particular application. Know the peripheral components of system architectures, interconnection schemes and their performance issues. Calculates & demonstrate efficient factors affecting the dry designing. Specify the processors and interconnects required for particular application. Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and image Compression. F.Y. M. Tech Semil Abunced DSP Larrarre will be able to design adaptive filters for a given application Larrarre will be able to understand different models for spectrum estimation Larrarre will be able to understand different models for particular application Larrarre will be able to understand different models for spectrum estimation Larrarre will be able to perform linear estimation and prediction of random signal Larrarre will be able to perform linear estimation and prediction of random signal Larrarre will be able to perform linear estimation and prediction of random signal Larrarre will be able to perform linear estimation and prediction of random signal Larrarre will be able to perform linear estimation and prediction of random signal Larrarre will be able to understand all the recent applications, fragmenting their are new generation translator technology Larrarre will be able to understand all the recent applications, Engineering Tools and research views to the students Larrarre will be able to understand did at transmi
CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO5 CO6 CO4 CO5 CO6 CO4 CO5 CO6 CO6 CO7	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic circuits using matable tools. Ability to build power electronic circuits using matable tools. Ability to design, analyze and understand the operation of inverter & Cycloconverter System on Ckip System on Ckip Cancellet the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application. Calculate & demonstrate different factors affecting the chip designing. Specify the processors and interconnects required for particular application. Convolute performance is required for particular application. Develop & Analyze the applications like AES algorithm and image Compression P.Y. M. Tech Sem-II Advanced DSP Learner will be able to design adaptive filters for a given application. Learner will be able to understand different models for spectrum estimation. Learner will be able to understand different methods for Random signal processing Learner will be able to understand different methods for Amondom signal Learner will be able to perform incare estimation and precision and precision and precision and precision and precision of random signal Learner will be able to acquire passix knowledge of MOSETT, FINETT, SO-MOSET which are new generation transistor technology Learner will be able to understand and development in field of Nano electronics Devices and Materials which is recent trends in technology Learner will be able to understand and even field on Nano electronics Devices and Materials which is recent trends in technology Learner will be able to understand and even field on Nano electronics Devices and Materials which is recent trends in technology Learner will be able to understand all the recent applications, Engineering Tools and research views to the students
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic crouts using matilab tools. Ability to duil gover electronic crouts using matilab tools. Ability to design, analyze and understand the operation of inverter & cycloconverter. Spate on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculates & demonstrate efficient factors affecting the dry designing. Specify the processors and interconnects required for particular application. Know the peripheral components of system architectures, interconnection schemes and their performance issues. Calculates & demonstrate efficient factors affecting the dry designing. Specify the processors and interconnects required for particular application. Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and image Compression. F.Y. M. Tech Semil Abunced DSP Larrarre will be able to design adaptive filters for a given application Larrarre will be able to understand different models for spectrum estimation Larrarre will be able to understand different models for particular application Larrarre will be able to understand different models for spectrum estimation Larrarre will be able to perform linear estimation and prediction of random signal Larrarre will be able to perform linear estimation and prediction of random signal Larrarre will be able to perform linear estimation and prediction of random signal Larrarre will be able to perform linear estimation and prediction of random signal Larrarre will be able to perform linear estimation and prediction of random signal Larrarre will be able to understand all the recent applications, fragmenting their are new generation translator technology Larrarre will be able to understand all the recent applications, Engineering Tools and research views to the students Larrarre will be able to understand did at transmi
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6	Ability to analyze and evaluate the three phase controlled converter. Ability to builg power electronic crouts using matibal tools. Ability to duil gover electronic crouts using matibal tools. Ability to duil gover electronic crouts using matibal tools. Ability to design, analyze and understand the operation of inverter & cycloconverter. Spate on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculates & demonstrate different factors affecting the duje designing. Specify the processors and interconnects required for particular application. Kow the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like AES algorithm and image Compression. F.F. M. Tech Semil Abunced DSP Larraer will be able to design adaptive filters for a given application. Larraer will be able to understand different models for aperture simulation. Larraer will be able to understand different models for aperture simulation. Larraer will be able to understand different models for particular applications. Larraer will be able to perform linear estimation and prediction of random signal processing. Larraer will be able to perform linear estimation and prediction of random signal carrier will be able to perform linear estimation and prediction of random signal carrier will be able to perform linear estimation and prediction of random signal carrier will be able to perform linear estimation and prediction of random signal carrier will be able to understand all forest methods for Random signal processing. Larraer will be able to perform linear estimation and prediction of random signal carrier will be able to understand all the recent applications, in the files and displays design in the same will be able to understand all the recent applications, Engineering Tools and research views to the students. Larraer will be able to understand diala transmission, interfaces and displays design
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO6 CO6 CO7	Ability to analyze and evaluate the three phase controlled converter. Ability to bulk power decronic circulus using matible book. Ability to design, analyze and understand the operation of inverter & Cycloconverter. System on Chip Demonstrate the components of system architecture, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Seeply the processors and interconnects required for particular application. Though a particular of the components of system and the tools used for implementing the system. Calculate & demonstrate different factors affecting the chip designing. Seeply the processors and interconnects required for particular application. Though a particular objection is like AS algorithm and image Compression. F.Y. Marcelo Semila Advanced System and the tools used for implementing the system. Learner will be able to design adaptive fifters for a given application is marked the control of the control o
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO6 CO6 CO7	Ability to analyze and evaluate the three phase controlled convertor. Ability to build power deterronic crouts using matible book. Ability to design, unalyze and understand the operation of invertor & Cycloconvertor System on Chip Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate afferent factors affecting the chip designing. Secret her processor and interconnects components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrate different factors affecting the chip designing. Secret her processor and interconnects consider for particular application Know the peripheral components of system and the tools used for implementing the system. Develop & Analyze the applications like ASS algorithm and image Compression F.K. Mitch's Semil Advanced DSP Learner will be able to design adaptive fifters for a given application Learner will be able to design adaptive fifters for a given application Learner will be able to understand different models for spectrum estimation Learner will be able to understand different models for spectrum estimation Learner will be able to understand different models for spectrum estimation Learner will be able to perform various operations on given signal Learner will be able to perform various operations on given signal Learner will be able to perform various operations on given signal Learner will be able to perform various operations on given signal Learner will be able to perform various operations on given signal Learner will be able to understand different models for spectrum estimation of random signal specurities with in recent trends in technology Learner will be able to understand different models for spectrum estimation of random signal specurities with in recent trends in technology Learner will be able to understand did the recent applications, Engineering for sign and research inexes to the students Learner will be able to under
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO0FE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO0FE Name:- CO1 CO2	Ability to analyze and evaluate the three phase controlled converter. Ability to build power electronic crotis using mutilate tools. Ability to design, malyze and understand the operation of inverter & Cycloconverter System on Chip Demonstrated the components of system and the converted and the operation of inverter & Cycloconverter System on Chip Demonstrate the components of system and the tours, interconnection schemes and their performance issues. Coulsie & demonstrate different factors of system and the tours, interconnection schemes and their performance issues. Coulsie & demonstrated different factors of system and the tools used for implementing the system. Society the processors and interconnector required for particular application Cours the peripheral components of system and the tools used for implementing the system. Cours the applications like ASS algorithm and image Compression **CY. Mit reds. Seat-II **Learner will be able to design mutitate DSP systems Learner will be able to understand different medias for spectrum estimation Learner will be able to understand different medias for procession systems will be able to understand different medias for procession systems will be able to perform linear estimation and prediction of radion system **Learner will be able to perform linear estimation and prediction of radion system **Learner will be able to perform linear estimation and grediction of radion system **Learner will be able to perform linear estimation and grediction of radion system **Learner will be able to operation bears as included of these performances and specific media from one system and the system on the system of the system on the sy
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO6 CO7	Ability to bally or analyze and evaluate the three phase controlled converter. Ability to design, washing and destroact control using marible book. Ability to design, washing and understand the operation of inverter & Cycloconverter Ability to design, washing and understand the operation of inverter & Cycloconverter Application of City Demonstrate the components of system architectures, interconnection schemes and their performance issues. Calculate & demonstrated efferent effects and streng the dop designing. Specify the processors and interconnects required for particular application. Know the peripheral components of system and the book used for implementing the system. F.K. M. Telo. Sean. Advanced OSP Examene will be able to design adaptive filters for a given application to accommand the peripheral components of system and many compension Examene will be able to design adaptive filters for a given application Examene will be able to design adaptive filters for a given application Examene will be able to operform accommand for practicular and filters through its particular and filters through its part
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO0	Ability to analyze and evolute the three phase controlled converter. Ability to basile power deciracise circuits using multial tools. Ability to design, analyze and understand the operation of inverter & Cytoconverte System on Chip Demonstrate the components of yighter and relations, increases and their performance issues. Ability to design, analyze and understand the operation of inverter & Cytoconverte System on Chip Demonstrate the components of yighter and relations, increases and their performance issues. Ability to make the components of yighter and relations, increases and their performance issues. Ability the processors and interconnects required for particular application Floor the peripheral components of yighter made the tools used for implementing the system. Ability the processors and interconnects required for particular application Floor the peripheral components of yighter and the tools used for implementing the system. Ability the processors and interconnects required for particular application Floor the peripheral components of yighter and the tools used for implementing the system. Ability the processors and interconnects required for particular application Floor the peripheral components of yighter and the tools used for implementing the system. Ability to assign the application is 8.45 algorithm and image Compression Floor the peripheral components of system and the tools used for implementing the system. Floor the ability to design adaptive filters for a given application Floor the ability to design adaptive filters for a given application Floor the ability to design adaptive filters for a given application Floor the ability to design adaptive filters for a given application Floor the ability to design adaptive filters for a given application and prediction of readon signal Floor the ability to design adaptive filters for a given application of readon signal Floor the ability to design adaptive filters for a given application of readon signal Floor the ability to
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO6 CO7	Ability to analyze and evolute the three phase controlled converter. Ability to basile power deciracise circuits using multial tools. Ability to design, analyze and understand the operation of inverter & Cytoconverte System on Chip Demonstrate the components of yighter and relations, increases and their performance issues. Ability to design, analyze and understand the operation of inverter & Cytoconverte System on Chip Demonstrate the components of yighter and relations, increases and their performance issues. Ability to make the components of yighter and relations, increases and their performance issues. Ability the processors and interconnects required for particular application Floor the peripheral components of yighter made the tools used for implementing the system. Ability the processors and interconnects required for particular application Floor the peripheral components of yighter and the tools used for implementing the system. Ability the processors and interconnects required for particular application Floor the peripheral components of yighter and the tools used for implementing the system. Ability the processors and interconnects required for particular application Floor the peripheral components of yighter and the tools used for implementing the system. Ability to assign the application is 8.45 algorithm and image Compression Floor the peripheral components of system and the tools used for implementing the system. Floor the ability to design adaptive filters for a given application Floor the ability to design adaptive filters for a given application Floor the ability to design adaptive filters for a given application Floor the ability to design adaptive filters for a given application Floor the ability to design adaptive filters for a given application and prediction of readon signal Floor the ability to design adaptive filters for a given application of readon signal Floor the ability to design adaptive filters for a given application of readon signal Floor the ability to
CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO6 CO6 CO7 CO6 CO7 CO7 CO6 CO7	Ability to builty and realization the three phase controlled conventors. Ability to builty and value and realization state must be both. Ability to builty and understand the operation of inventor & Optioconventors. Ability to builty and understand the operation of inventor & Optioconventors. Ability to builty and understand the operation of inventor & Optioconventors. Special on Dispersion Only Dispersion on Dispersion on Dispersion Only Dispersion On

CO2	Learner will be able to interpret IOT working at transport layer with the help of various protocols
соз	Learner will be able to understand IOT concept at data link layer
CO4	Learner will be able to apply the concept of mobile networking to the internet connected devices
COS	Learner will be able to measure and schedule the performance of networked devices in IOT
	Learner will be able to analyze the challenges involve in developing IOT architecture
	S.Y. M. Tech Sem-IV
Course Name:-	Project Stage-II
CO1	To make student aware of recent trends in Electronics and Telecommunication
CO2	Student understand and Exhibits different phases of project Development.
соз	Implement software and / or hardware model of proposed work
CO4	Perform analysis in detail of the proposed work
	Student will be able to demonstrate soft skill like working in team, documentation and presentation.
cos	Student will be able to beninstrate soft shift like working in team, occurrentation and presentation.
	ELECTRONICS & TELECOMMUNICATION ENGINEERING
	S.Y. B Tech Part-II Sem-IV
Course Name:-	Electrical Machines and Instruments
CO1	The ability to formulate and then analyze the working of any electrical machine using mathematical model under loaded and unloaded conditions.
CO2	The skill to analyze the response of any electrical machine.
соз	The ability to troubleshoot the operation of an electrical machine.
CO4	The ability to select a suitable measuring instrument for a given application.
COS	The ability to estimate and correct deviations in measurements due to the influence of the instrument and due to the accuracy of the instrument.
	Analog Communication Engineering
Source Hallies-	
CO1	
	Understand and identify the fundamental concepts and various components of analog communication systems.
	Understand the concepts of modulation and demodulation techniques.
	Design circuits to generate modulated and demodulated wave.
	Equip students with various issues related to analog communication such as modulation, demodulation, transmitters and receivers and noise performance.
CO5	Understand the concepts of modulation and demodulation techniques of angle modulation (frequency and phase).
CO6	Explain signal to noise ratio, noise figure and noise temperature for single and cascaded stages in a communication system.
CO7	Develop the ability to compare and contrast the strengths and weaknesses of various communication systems.
Course Name:-	Microprocessor
CO1	
	Learner gains ability to apply knowledge of engineering in designing different case studies.
	Students get ability to conduct experiments based on interfacing of devices to or interfacing to real world applications
	Students get ability to interface mechanical system to function in multidisciplinary system like in robotics, Automobiles.
	Students can identify and formulate control and monitoring systems using microprocessors.
COS	Students will design cost effective real time system to serve engineering solution for Global, social and economic context.
CO6	This course understanding will enforce students to acquire knowledge of recent trends like superscalar and pipelining and thus finds recognition of continuous updating.
	This course understanding will enforce students to acquire knowledge of recent trends like superscalar and pipelining and thus finds recognition of continuous updating. Learn use of hardware and software tools.
CO7	
CO7	Learn use of hardware and software tools.
CO7	Learn use of hardware and software tools.
CO7	Learn use of hardware and software tools. Develop interfacing to real world devices.
CO7 CO8 Course Name:-	Learn use of hardware and software tools. Develop interfacing to real world devices.
CO7 CO8 Course Name:-	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems
CO7 CO8 Course Name:- CO1 CO2	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system.
COT COS Course Name:- CO1 CO2 CO3	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:-	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve algebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO1 CO2 CO2	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve algebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO1	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve algebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 COURSE Name:- CO1 CO2 CO3 CO4	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve algebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values. Prepare them to write computer programs for the numerical computational techniques.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 COCO COC C	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve a legebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques on equi-spaced or non equi-spaced data values. Prepare them to write computer programs for the numerical computational techniques. Understand application of the NMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 COCO COC COCO C	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve algebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values. Prepare them to write computer programs for the numerical computational techniques. Understand application of the NMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand procedure-oriented and object oriented programming concepts.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 COCO COC COCO COCO COCO COCO COC COCO COC COCO COCO COCO COC	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve a legebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques on equi-spaced or non equi-spaced data values. Prepare them to write computer programs for the numerical computational techniques. Understand application of the NMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 COCO COC COCO COCO COCO COCO COC COCO COC COCO COCO COCO COC	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve algebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values. Prepare them to write computer programs for the numerical computational techniques. Understand application of the NMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand procedure-oriented and object oriented programming concepts.
CO7 CO8 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 COC0 COCO COCO COCO COCO COCO COCO	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve algebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values. Prepare them to write computer programs for the numerical computational techniques. Understand application of the NMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand procedure-oriented and object oriented programming concepts.
CO7 CO8 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 COC0 COCO COCO COCO COCO COCO COCO	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve algebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values. Prepare them to write competer programs for the numerical computational techniques. Understand application of the NMCP course in many regineering core subjects like single processing, digital communication, numerical techniques in electromagnetics etc. Understand procedure-oriented and object oriented programming concepts. Capable of writing C and C++ programs efficiently.
CO7 CO8 COURSE Name:- CO1 CO2 CO3 CO4 CO5 COURSE Name:- CO1 CO2 CO3 CO4 CO5 COCO COCO COCO COCO COCO COCO C	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve algebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values. Prepare them to write competer programs for the numerical computational techniques. Understand application of the NMCP course in many regineering core subjects like single processing, digital communication, numerical techniques in electromagnetics etc. Understand procedure-oriented and object oriented programming concepts. Capable of writing C and C++ programs efficiently.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO7 Coorse Name:- CO6 CO7 Course Name:- CO7	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve algebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Prepare them to write computer programs for the numerical operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values. Prepare them to write computer programs for the numerical computational techniques. Understand application of the NMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand procedure-oriented and object oriented programming concepts. Capable of writing C and C+ programs efficiently.
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 COCO	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand are resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve algebraic and transcendental equations by using numerical techniques and will be able to concept of interpolation, switch any number of variables using different direct and iterative numerical techniques. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques in equitions of the NMCP course in many empirering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand application of the NMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand application of the NMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand application of the NMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand application of the NMCP course in many engineering core subjects like signal processing
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO5 COCO C	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop interfacing to treal world devices. Understand mathematical description and representation of continuous and discrete time signals and systems. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system is - domain. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system is - domain. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system is - domain. Understand the Imitations of Fourier transform and need for Laplace transform and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve algebraic and transcendential equations by using numerical techniques and will be abile to compare of this purpose and also will be abile to choose a proper one as per the requirement of the problems. Able to solve a system of linear equations with any number of svariables using different direct and iterative numerical techniques on equi-spaced or non equi-spaced data values. Prepare them to where computer programs for the numerical computational techniques. Understand application of the NMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand application of the NMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand application of the NMCP course in many engineering core subjects like signal processing, digital communication, num
CO7 CO8 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO6 CO7 CO6 CO7 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO08 CO08 CO08 CO09 CO09 CO09 CO09 CO09 CO09 CO09 CO09	Learn use of hardware and software tools. Develop interfacing to real world devices. Signals and systems Understand mathematical description and representation of continuous and discrete time signals and systems. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve algebraic and transcendental equations by using numerical techniques and will be abile to compare different numerical techniques used for this purpose and abo will be abile to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques. Understand procedure—oriented and object oriented programming concepts. Understand procedure—oriented and object oriented programming concepts. Soft-Skill Development Able to solve short and long term goals Work in team with conflict management and interpersonal relations Development of leadership qualities To do time management
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO7 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7	Learn use of hardware and software tools. Develop input content and presentation of continuous and discrete time signals and systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input cutput relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the binations of Fourier transform and need for Laplace transform and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Abile to see a algebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques on equi-spaced or non equi-spaced data values. Prepare them to write computer programs for the numerical computational techniques. Understand application of the MDCP course in many epineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand procedure-oriented and object oriented programming concepts. Capable of writing C and C++ programs efficiently. Soft-Skill Development Able to set short and long term goals Work in team with conflict ranaagement and interpersonal relations. Development of leadership q
CO7 CO8 COURSE Name:- CO1 CO2 CO3 CO4 CO5 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO6 CO7 CO07 CO07 CO07 CO08 CO1 CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO07 CO08 CO7 CO08 CO1 CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO1 CO2 CO3 CO4 CO5 CO6 CO7	team use of hardware and software tools. Develop input output relations for real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand the limitations of Fourier transform and read for traplace transforms. Understand the limitations of Fourier transform and need for traplace transforms and develop the ability to analyze the system in 5- domain. Understand the basic concept of probability andom variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Namerical Methods and Computer Programming Able to solve algebraic and transcendental equations by using numerical techniques and will be abile to compare different numerical techniques used for this purpose and also will be abile to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques used for this purpose and also will be abile to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques. Understand ploned on the NMC consort programs for the numerical computational techniques and equations in namy regineering consubjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand procedure-oriented and object oriented programming concepts. Capable of writing C and C++ programs efficiently. Soft-Skill Development Work in team with conflict management and interpersonal relations Development of leadership qualities To do time management of contract tempersonal relations
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO0 CO4 CO5 CO0 CO1 CO5 CO0 CO1 CO1 CO2 CO3 CO4 CO5 CO0 CO4 CO5 CO0	team use of hardware and software tools. Develop instructive to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve a sigebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques. Understand the concept of interpolation, finite difference perspares for the numerical techniques on equi-spaced or non equi-spaced data values. Prapare them to write computer programs for the numerical techniques and equations techniques in electromagnetics etc. Understand application of the NMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand procedure and object or intensproagnaming concepts. Capable of writing C and C+ programs efficiently. Soft-Skill Development Development of leadership qualities. Development of leadership qualities. Overlay to a development and interporanal relations Devel
CO7 CO8 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO6 CO7 CO7 CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO07 CO07 CO07 CO07 CO07 CO07 CO07	team use of hardware and software tools. Develop input output relations for real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand the limitations of Fourier transform and need for Laplace transforms. Understand the basic concept of probability random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to so the algebraic and transcendential equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to so lee a system of linear equations with any number of variables using different direct and iterative numerical techniques. Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced of non equi-spaced data values. Prepare them to write computer programs for the numerical computational techniques. Understand procedure-oriented and object oriented programming concepts. Capable of writing C and C++ programs efficiently. Soft-Still Development Work in team with conflict management and interpersonal relations Development of leadership qualities To do time management of concepts (Figure 1) and a leader of the position of the MPC concepts and the programming concepts. Cardiocters and policy terms and one term goals Work in team with conflict management and interpersonal relations
CO7 CO8 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	team use of hardware and software tools. Develop instracting to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s-domain. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve a sigebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques and equations of the reposition, finite difference operators and their relations, and can apply different interpolation techniques nequi-spaced of non equi-spaced data values. Prepare them to write computer programs for the numerical computational techniques in equi-spaced or non equi-spaced data values. Capable of writing C and C++ programs efficiently. Soft-Skill Development Soft-Skill Development Able to set short and long term goals Vovic in team with conflict management and interpersonal relations Development of deserting qualities Understand Corporate Ediquettic Management and interpersonal relations Development of deserting qualities Understand Corporate Ediquettic Ediquettic Ediquetic
CO7 CO8 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO6 CO7 CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO07 CO07 CO08 CO07 CO08 CO08 CO08 CO08 CO08 CO08 CO09 CO09 CO09 CO09 CO09 CO09 CO09 CO09	team use of hardware and software tools. Develop input or feat control devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and recoke the signals in frequency domain using Fourier series and Fourier transforms. Understand and recoke the signals in frequency domain using Fourier series and Fourier transforms. Understand the linear of Fourier transforms and event for Linear series and Fourier transforms. Understand the basic concept of probability, random variables & random signals and develop the ability to snalyee the system in somain. Understand the basic concept of probability, random variables & random signals and develop the ability to snalyee the system in somain. Understand the basic concept of probability, random variables & random signals and develop the ability to snalyee the system in somain. Understand the basic concept of probability, random variables & random signals and develop the ability to snalyee the system in somain. Able to solve a system of linear equations by using numerical techniques and will be abile to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations by using numerical techniques and will be abile to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques and equipasced or non equi-spaced data values. Understand procedure oriented and object oriented programming omospits. Capable of writing C and C++ programs efficiently. Understand procedure-oriented and object oriented programming omospits. Soft-Sulli Development Able to set short and long term goals Work in team with conflict management and interpersonal relations To do time management Un
CO7 CO8 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO6 CO7 CO07 CO07 CO07 CO07 CO07 CO07 CO07	team use of hardware and software took. Develop interfacing to real world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Understand mathematical description and representation of continuous and discrete time signals and systems. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to nanlyse the system in s-domain. Understand the basic concept of probability, random variables & random signals and develop the ability to Indic correlation, CDF, PDF and probability of a given event. Namerical Methods and Computer Programming Able to solve algebraic and transcendental equations by using numerical techniques and will be abile to choose a proper one as per the requirement of the problem. Able to solve algebraic and transcendental equations by using numerical techniques and will be abile to choose a proper one as per the requirement of the problem. Able to solve algebraic and transcendental equations by using numerical techniques and will be abile to choose a proper one as per the requirement of the problem. Able to solve algebraic and transcendental equations by using numerical techniques and will be abile to choose a proper one as per the requirement of the problem. Able to solve algebraic and transcendental equations by using numerical techniques and will be abile to choose a proper one as per the requirement of the problem. Able to solve algebraic and transcendental equations by using numerical techniques and even proper on equations will not problem. Able to solve algebraic and the concept of interpolation, finite difference operators and the techniques on equi-spaced or non equi-spaced data values. Foregrave them to write computer programs of the manuferical equations of the manuferical equations of the manuferical equations of the manuferical equations of the
CO7 CO8 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 COURSE NAME:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 CO6 CO7 CO07 CO07 CO07 CO07 CO07 CO07 CO07	teem use of hardware and software tools. Develop inferficing to rail world devices. Signals and Systems Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Numerical Methods and Computer Programming Able to solve a system of linear equations by using numerical techniques and will be able to concept of fire probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event. Able to solve a system of linear equations by using numerical techniques and will be able to choose a proper one as per the requirement of the problem. Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques. Understand application of the IMMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand application of the IMMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc. Understand procedure oriented and object oriented programming concepts. Capable of vering c. and C++ programs efficiently. Able to set short and long term goals Work in team with conflict management and interpersonal relations To do time ma
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CO7 CO8 COURSE Name:- CO1 CO2 CO3 CO4 CO5 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	Develop intributing to real world device. Signals and Systeme Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for insert with invariant system and understand the convolution operator for continuous and discrete time signals and systems. Develop input output relationship for insert with invariant system and understand the convolution operator for continuous and discrete time system. Develop input output relationship for insert with invariant system and understand the convolution operator for continuous and discrete time system. Understand the limitations of Fourist treatment and reset for author sand of an event and four expert and the system in sectionship of the signals in frequency of many and invariant system and understand the develop the sability to find correlation, COF, PDF and probability of a given event. Numerical Networks and Computer Programming. Able to solve a signal for insert apartition with any number of variables using different device able to compute expert and to transcend any superator of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values. Program them to write computer programs for the numerical computational techniques on equi-spaced or non equi-spaced data values. Understand procedure exterted and object oriented programming concepts. Good of world or NAFC cours in many regiments on evaluations, numerical techniques on equi-spaced or non equi-spaced data values. Note that with conflict oriented programming concepts. Good of world or the programs of the numerical computational techniques on equi-spaced or non equi-spaced data values. Note that world or on the NAFC cours in many regiments one values is the given processing, digital communication, numerical techniques on equi-spaced or non equi-spaced data values. Note that not value of the NAFC cours in many regiments given su
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CO7 CO8 COURSE Name:- CO1 CO2 CO3 CO4 CO5 COURSE Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7 COURSE Name:- CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO4 CO1 CO2 CO3 CO4 CO4 CO1 CO2 CO3 CO4 CO4 CO4 CO4 CO4 CO5 CO6 CO7 CO7 CO7 CO8 CO8 CO9	Develop intributing to real world device. Signals and Systeme Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for insert with invariant system and understand the convolution operator for continuous and discrete time signals and systems. Develop input output relationship for insert with invariant system and understand the convolution operator for continuous and discrete time system. Develop input output relationship for insert with invariant system and understand the convolution operator for continuous and discrete time system. Understand the limitations of Fourist treatment and reset for author sand of an event and four expert and the system in sectionship of the signals in frequency of many and invariant system and understand the develop the sability to find correlation, COF, PDF and probability of a given event. Numerical Networks and Computer Programming. Able to solve a signal for insert apartition with any number of variables using different device able to compute expert and to transcend any superator of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values. Program them to write computer programs for the numerical computational techniques on equi-spaced or non equi-spaced data values. Understand procedure exterted and object oriented programming concepts. Good of world or NAFC cours in many regiments on evaluations, numerical techniques on equi-spaced or non equi-spaced data values. Note that with conflict oriented programming concepts. Good of world or the programs of the numerical computational techniques on equi-spaced or non equi-spaced data values. Note that world or on the NAFC cours in many regiments one values is the given processing, digital communication, numerical techniques on equi-spaced or non equi-spaced data values. Note that not value of the NAFC cours in many regiments given su
CO7 CO8 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO6 CO7 Course Name:- CO6 CO7 Course Name:- CO1 CO2 CO3 CO4 T.E. Part-II Sem- Course Name:- CO1 CO2 CO3 CO4 CO4 Course Name:- CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO4 Course Name:- CO1 CO2 CO3 CO4 CO4 CO4 CO0 CO3 CO4 CO0 CO3 CO4 CO0 CO3 CO4 CO0 CO3 CO4 CO0 CO0 CO0 CO0 CO0 CO0 CO0	term one of insidence and software took. Covering interfring to real ward divines. Signals and Systems Covering interfring to real ward divines. Covering interfring to the signals and systems. Covering interfring to continuous and discrete time signals and systems. Covering the covering the signals and representation of continuous and discrete time signals and systems. Covering the covering the signals are signals and such as a signal sand systems. Covering the covering the signals are signals and such as a signal sand systems. Covering the covering the signals are signals and severe time signals and develop the signal by an adaptive to a spots. Covering the signals are signals are signals and develop the ability to adaptive to applicate the system. Covering the signals are signals are signals and develop the ability to adaptive the system is a domain. Covering the signals are signals are signals and develop the ability to adaptive the system is a domain. Covering the signals are signals are signals and develop the ability to adaptive the system is a domain. Covering the signals are signals are signals and develop the ability to adaptive a given event. Ability to solve a signals and transcendental equations by using numerical exhibitions and will be ability to adaptive and w

COS	Describe the features & internal architectures of CPLD (XC 9572) & Spartan IIIE FPGA (XC35500E).
CO6	Demonstrate practical skills in simulating & testing digital modules.
	Microprocessors and Microcontrollers
CO1	Know the architecture of 8085, 8051 and PIC microcontrollers.
CO2	Write programs over simulator & 8085 microprocessors.
CO3	Use the knowledge of instruction set to perform practical over 8051 and PIC microcontrollers.
CO4	Interface 8255, 8279, 8155, DAC & other devices to microprocessor & microcontroller
Course Name:-	Optical Communication & Network
CO1	Elaborate the basic optical communication along with the simulation and modeling tools.
CO2	Differentiate the different types of optical fiber structures and light propagating mechanisms.
соз	Acquire knowledge of signal degradation mechanism in optical fiber.
CO4	Understand the construction and working optical sources and detectors.
CO5	Describe the optical receiver operation, WDM and optical network in detail.
Course Name:-	Industrial Management
CO1	Demonstrate that how a person is getting selected in a company, how the performance of employee is evaluated.
CO2	Analyze the methods of performance appraisal and find the best out of them.
соз	Define both marketing and selling concept.
CO4	Understand the techniques used for selling the product.
CO5	Explain about Entrepreneurship.
CO6	Solve assignment, transportation problems using different Operations Research methods & solve project management problems using CPM & PERT.
_	
	Electronic System Design Independent and decign simple electronics out horse
CO1	Understand and design simple electronics systems. Apply the knowledge of concer in decimine different electronics systems.
CO2	Apply the knowledge of sensors in designing different electronics systems. Design & perform electronics systems based on microcontrollers.
CO3	Design & perform electronics systems based on microcontrollers. Use these skills to implement mini projects based on electronics systems.
B.E. Part-II Sem-	
Course Name:-	Wireless Communication
CO1	Students will be able to Distinguish the major cellular communication standards (16/26/36 systems)
CO2	Students will be able to characterize the tradeoffs among frequency reuse, signal-to-interference ratio, capacity, and spectral efficiency.
соз	Students will be able to characterize large-scale, small-scale propagation models and their corresponding path losses.
CO4	Students will be able to Characterize TDMA, FDMA and CDMA.
COS	Students will be able to Install and maintain wireless communication equipment and wireless networks and study, analyze, and critically evaluate the major product offerings of current vendors, their costs, and application
-	Judgens will be able to fishing and mannam whereas Communication equipment and whereas networks and study, analyze, and chicking evaluate the major product offerings of current ventors, when costs, and application
Course Name:-	Image Processing
CO1	Students will be able to understand digital image fundamentals.
CO2	Students will be able to understand and apply image enhancement techniques.
соз	Students will be able to understand and apply morphological image processing.
CO4	Students will be able to understand and apply image segmentation approaches.
CO5	Students will be able to understand and use different image processing applications.
	Seminar And Project Students will be able to explain the recent trends in electronics & tolercommunication
CO1	Students will be able to explain the recent trends in electronics & telecommunication
CO1 CO2	Students will be able to explain the recent trends in electronics & telecommunication Students will be able to improve communication skills
CO1 CO2 CO3	Students will be able to explain the recent trends in electronics & telecommunication Students will be able to improve communication skills Students will be able to apply different phases of project development.
CO1 CO2	Students will be able to explain the recent trends in electronics & telecommunication Students will be able to improve communication skills
CO1 CO2 CO3 CO4	Students will be able to explain the recent trends in electronics & telecommunication Students will be able to improve communication skills Students will be able to apply different phases of project development.
CO1 CO2 CO3 CO4	Students will be able to explain the recent trends in electronics & telecommunication Students will be able to improve communication skills Students will be able to apply different phases of project development. Students will be able to demonstrate soft skills like working in team, documentation and presentation.
CO1 CO2 CO3 CO4 Course Name:-	Students will be able to explain the recent trends in electronics & telecommunication Students will be able to improve communication skills Students will be able to apply different phases of project development. Students will be able to demonstrate soft skills like working in team, documentation and presentation. Mobilecommunication(Elective II)
CO1 CO2 CO3 CO4 Course Name:- CO1	Students will be able to explain the recent trends in electronics & telecommunication Students will be able to improve communication skills Students will be able to apply different phases of project development. Students will be able to demonstrate soft skills like working in team, documentation and presentation. Mobilecommunication(Elective II) Students will be able to explain basics of Mobile communication. Students will be able to explain wireless LAN. Students will be able to describe Mobile Transport & Network layers
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4	Students will be able to explain the recent trends in electronics & telecommunication Students will be able to improve communication skills Students will be able to apply different phases of project development. Students will be able to demonstrate soft skills like working in team, documentation and presentation. Mobilecommunication(Elective II) Students will be able to explain basics of Mobile communication. Students will be able to explain Wireless LAN. Students will be able to describe Mobile Transport & Network layers Students will be able to describe Mobile Transport & Network layers
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CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5	Students will be able to explain the recent trends in electronics & telecommunication Students will be able to improve communication skills Students will be able to apply different phases of project development. Students will be able to demonstrate soft skills like working in team, documentation and presentation. Mobilecommunication(Elective II) Students will be able to explain basics of Mobile communication. Students will be able to explain Wireless LAN. Students will be able to describe Mobile Transport & Network layers Students will be able to explain wireless Systems Broadband Communication Students would be able to demonstrate the working or telephone exchange. Students would be able to predict the standard utilization of ISDN along with its types of channels, services, medium etc.
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO5 CO4 CO5 COUrse Name:- CO1 CO2 CO3	Students will be able to explain the recent trends in electronics & telecommunication Students will be able to improve communication skills Students will be able to apply different phases of project development. Students will be able to demonstrate soft skills like working in team, documentation and presentation. Mobilecommunication(Elective II) Students will be able to explain basics of Mobile communication. Students will be able to explain basics of Mobile communication. Students will be able to explain wireless LAN. Students will be able to describe Mobile Transport & Network layers Students will be able to explain. Security issues in Wireless Systems Broadband Communication Students would be able to demonstrate the working or telephone exchange. Students would be able to predict the standard utilization of ISDN along with its types of channels, services, medium etc. Using the standards used for up gradation in the performance of the exchanges.
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CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5	Students will be able to explain the recent trends in electronics & telecommunication Students will be able to improve communication skills Students will be able to apply different phases of project development. Students will be able to demonstrate soft skills like working in team, documentation and presentation. Mobilecommunication(Elective II) Students will be able to explain basics of Mobile communication. Students will be able to explain wireless LAN. Students will be able to describe Mobile Transport & Network layers Students will be able to explain. Security issues in Wireless Systems Students will be able to explain. Students would be able to demonstrate the working or telephone exchange. Students would be able to demonstrate the working or telephone exchanges. Students would be able to demonstrate the working of Broadband Integrated Services Digital Networks (B-ISDN)
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CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5	Students will be able to explain the recent trends in electronics & telecommunication Students will be able to improve communication skills Students will be able to popy different phases of project development. Students will be able to demonstrate soft skills like working in team, documentation and presentation. Mobilecommunication(Elective II) Students will be able to explain basics of Mobile communication. Students will be able to explain Wireless LAN. Students will be able to describe Mobile Transport & Network layers Students will be able to explain wireless Systems Broadband Communication Security issues in Wireless Systems Broadband Communication Students would be able to predict the standard utilization of ISDN along with its types of channels, services, medium etc. Using the standards used for up gradation in the performance of the exchanges. Students would be able to demonstrate the working of Broadband Integrated Services Digital Networks (8-ISDN) Students would be able to present the operation of ATM switches; overall network along with the advanced standards utilized the network Audio-Video Engineering Students would be to analyze nature of different Audio and Video signals.
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CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO4 CO5	Students will be able to explain the recent trends in electronics & telecommunication Students will be able to project development. Students will be able to oppy different phases of project development. Students will be able to demonstrate soft skills like working in team, documentation and presentation. Mobilecommunication(Elective II) Students will be able to explain basics of Mobile communication. Students will be able to explain basics of Mobile communication. Students will be able to explain wireless LAN. Students will be able to explain wireless LAN. Students will be able to explain wireless LAN. Security issues in Wireless Systems Broadband Communication Students would be able to predict the standard utilization of ISDN along with its types of channels, services, medium etc. Using the standards used for up gradation in the performance of the exchanges. Students would be able to demonstrate the working of Broadband integrated Services Digital Networks (B-ISDN) Students would be able to present the operation of ATM switches; overall network along with the advanced standards utilized the network Audio-Video Engineering Students would be to analyze nature of different Audio and Video signals. Students will able to rectify fault detection in TV- set and CD player.
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CO4	
	Students can Design & Develop Electro-mechanical System
1	
Course Name:-	Artificial Neural Networks (Elective-II)
CO1	Use analogy of human neural network for understanding of artificial learning algorithms
CO2	The student will show skills for using back propagation algorithm.
соз	The student will exhibit the knowledge of radial basis function network
CO4	The student will show understanding of self organizing maps.
Course Name:-	Remote Sensing & GPS (Elective-II)
	Fully equipped with concepts, methodologies and applications of Remote Sensing Technology.
	Prepare the candidates for National and Global Employability
	Acquire skills in handling instruments, tools, techniques and modeling while using Remote Sensing Technology
	tempowers the candidate with confidence and leadership qualities.
C04	It empowers the calludate with Commence and readership quantes.
C N	Operating System (Elective-II)
	Know the architecture of operating system
	Understand Processes & Threading environment in operating systems
	Know the memory & I/O issues in OS
	Compare different operating systems
	F.Y. M.Tech Sem-II
Course Name:-	ESTIMATION AND DETECTION THEORY
CO1	1.Learner will have basic knowledge of linear algebra.
	2.Acquire basics of statistical decision theory used for signal detection and estimation.
	3.Examine the detection of deterministic and random signals using statistical models.
CO4	4.Examine the performance of signal parameters using optimal estimators.
CO5	S.Study different estimation schemes such as ML and MMSE estimators
Course Name:-	INFORMATION THEORY AND CODING
CO1	1.Learner will be able to formulate equations for entropy mutual information andchannel capacity for all types of channels.
CO2	2. Learner will be able to distinguish between different types error correcting codesbased on probability of error
соз	3.Learner will be able to design a digital communication system by selecting an appropriate error correcting codes for a particular application.
CO4	4.Learner will be able to explain various methods of generating and detecting differenttypes of error correcting codes
CO5	S.Learner will be able to formulate the basic equations of linear block codes.
CO6	6.Learner will be able to compare the performance of digital communication system byevaluating the probability of error for different error correcting codes
Course Name:-	Wireless Sensor Network Design
CO1	1. Student will understand the need of WSN and also will analyze the challenges in creating WSN
CO2	2. Student will be able to design the architecture of WSN
соз	3.Student will be able analyze the power and security constraints in WSN
CO4	4.Student will study different operating system to operate WSN
COS	5. Student will be able to understand the basic functioning of WSN at physical layer
CO6	6. Student will understand different protocols at network layer to for multiple channel accessing
Course Name:-	
	Digital VLSI Design
	Digital VLSI Design
	Digital VLSI Design 1. Learner will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics. Fabrication process of MOS device, Making circuit with MOS devices their design equation. designing layout of such circuits, studying
CO1	1.Learner will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics. Fabrication process of MOS device, Making circuit with MOS devices their design equation. designing layout of such circuits, studying pass transistors
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CO1 CO2 CO3 CO4 CO5 CO6 CO6 Course Name:-	1.Learner will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics. Fabrication process of MOS device, Making circuit with MOS devices their design equation. designing layout of such circuits, studying pass transistors 2.Learner will be able to understand VHDL language for synthesizing Digital Circuits. Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding how to write package, sub program and test benches. 3.Learner will be able to understand Programming Technologies, Programmable LogicBlock Architectures, Programmable interconnects, Programmable I/O blocks in FPGAs, Dedicated Specialized Components of FPGAs, and Applications of FPGAs. 4.Learner will be able to understand designing of SRAM and DRAM. 5.Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6.Learner will be able to analyze Need of Design for Testability (DFT), Controllability, predictability, testability, built in Self Test (BIST), Partial and full scan check. Understanding the boundary scancheck, JTAG, Test Access Port (TAP) controller. 7. Research Methodology
CO1 CO2 CO3 CO4 CO5 CO6 Course Name:-	1. Learner will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics. Fabrication process of MOS device, Making circuit with MOS devices their design equation. designing layout of such circuits, studying pass transistors 2. Learner will be able to understand VHDL language for synthesizing Digital Circuits. Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding how to write package, sub program and test benches. 3. Learner will be able to understand Programming Technologies, Programmable LogicBlock Architectures, Programmable Interconnects, Programmable I/O blocks inFPGAs, Dedicated Specialized Components of FPGAs, and Applications of FPGAs. 4. Learner will be able to understand designing of SRAM and DRAM. 5. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to analyze Need of Design for Testability (DFT), Controllability, predictability, testability, built in Self Test (BIST), Partial and full scan check. Understanding the boundary scancheck, JTAG, Test Access Port (TAP) controller. 7. Research Methodology 1. Learner will learn the meaning, objective, motivation and type of research
CO1 CO2 CO3 CO4 CO5 CO6 Course Name:-	1. Learner will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics. Fabrication process of MOS device, Making circuit with MOS devices their design equation. designing layout of such circuits, studying pass transistors 2. Learner will be able to understand VHDL language for synthesizing Digital Circuits. Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding how to write package, sub program and test benches. 3. Learner will be able to understand Programming Technologies, Programmable LogicBlock Architectures, Programmable Interconnects, Programmable I/O blocks inFPGAs, Dedicated Specialized Components of FPGAs, and Applications of FPGAs. 4. Learner will be able to understand designing of SRAM and DRAM. 5. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to analyze Need of Design for Testability (DFT), Controllability, predictability, testability, built in Self Test (BIST), Partial and full scan check. Understanding the boundary scancheck, JTAG, Test Access Port (TAP) controller. 7. Research Methodology 1. Learner will be able to formulate their research work with the help of iterature review
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CO1 CO2 CO3 CO4 CO5 CO6 Course Name:- CO1 CO2 CO3 CO4	1.Learner will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics. Fabrication process of MOS device, Making circuit with MOS devices their design equation. designing layout of such circuits, studying pass transistors 2.Learner will be able to understand VHDL language for synthesizing Digital Circuits. Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding how to write package, sub program and test benches. 3.Learner will be able to understand Programming Technologies, Programmable LogicBlock Architectures, Programmable Interconnects, Programmable I/O blocks inFPGAs, Dedicated Specialized Components of FPGAs, and Applications of FPGAs. 4.Learner will be able to understand designing of SRAM and DRAM. 5.Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6.Learner will be able to analyze Need of Design for Testability (DFT), Controllability, predictability, built in Self Test (BIST), Partial and full scan check. Understanding the boundary scancheck, JTAG, Test Access Port (TAP) controller. 7.Learner will be able to formulate their research work with the help of literature review 3.Learner will be able to develop an understanding of various research design and techniques 4.Learner will be able to develop an understanding of various research design and techniques 4.Learner will be able to develop an understanding of various research design and techniques
CO1 CO2 CO3 CO4 CO5 CO6 Course Name:- CO1 CO2 CO3 CO4 CO5	1.Learner will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics. Fabrication process of MOS device, Making circuit with MOS devices their design equation. designing layout of such circuits, studying pass transistors 2.Learner will be able to understand VHDL language for synthesizing Digital Circuits. Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and meal/machines. 3.Learner will be able to understand Programming Technologies, Programmable LogicBlock Architectures, Programmable Interconnects, Programmable I/O blocks inFPGAs, Dedicated Specialized Components of FPGAs, and Applications of FPGAs. 4.Learner will be able to understand designing of SRAM and DRAM. 5.Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6.Learner will be able to analyze Need of Design for Testability (DFT), Controllability, predictability, built in Self Test (BIST), Partial and full scan check. Understanding the boundary scancheck, ITAG, Test Access Port (TAP) controller. 7.Learner will learn the meaning, objective, motivation and type of research 7.Learner will be able to develop an understanding of various research design and techniques 8.Learner will be able to develop an understanding of various research work 8.Learner will be able to develop an understanding of various research work 8.Learner will be able to collect the statistical data with different methods related to research work
CO1 CO2 CO3 CO4 CO5 CO6 Course Name:- CO1 CO2 CO3 CO4 CO5	1.Learner will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics. Fabrication process of MOS device, Making circuit with MOS devices their design equation. designing layout of such circuits, studying pass transistors 2.Learner will be able to understand VHDL language for synthesizing Digital Circuits. Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding how to write package, sub program and test benches. 3.Learner will be able to understand Programming Technologies, Programmable LogicBlock Architectures, Programmable Interconnects, Programmable I/O blocks inFPGAs, Dedicated Specialized Components of FPGAs, and Applications of FPGAs. 4.Learner will be able to understand designing of SRAM and DRAM. 5.Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6.Learner will be able to analyze Need of Design for Testability (DFT), Controllability, predictability, built in Self Test (BIST), Partial and full scan check. Understanding the boundary scancheck, JTAG, Test Access Port (TAP) controller. 7.Learner will be able to formulate their research work with the help of literature review 3.Learner will be able to develop an understanding of various research design and techniques 4.Learner will be able to develop an understanding of various research design and techniques 4.Learner will be able to develop an understanding of various research design and techniques
CO1 CO2 CO3 CO4 CO5 CO6 COurse Name:- CO1 CO2 CO3 CO4 CO5 CO6	1. Learner will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics. Fabrication process of MOS device, Making circuit with MOS devices their design equation. designing layout of such circuits, studying pass transistors 2. Learner will be able to understand VHDL language for synthesizing Digital Circuits. Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding how to write package, sub program and test benches. 3. Learner will be able to understand Programming Technologies, Programmable LogicBlock Architectures, Programmable Interconnects, Programmable I/O blocks inFPGAs, Dedicated Specialized Components of FPGAs, and Applications of FPGAs. 4. Learner will be able to understand designing of SRAM and DRAM. 5. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing, algorithms for global rou
CO1 CO2 CO3 CO4 CO5 CO6 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6	Lizamer will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics. Fabrication process of MOS device, Making circuit with MOS devices their design equation. designing layout of such circuits, studying pass transistors 2. Learner will be able to understand VHDL language for synthesizing Digital Circuits. Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding how to write package, sub program and test benches. 3. Learner will be able to understand Programming Technologies, Programmable LogicBlock Architectures, Programmable Interconnects, Programmable I/O blocks inFPGAs, Dedicated Specialized Components of FPGAs, and Applications of FPGAs. 4. Learner will be able to understand designing of SRAM and DRAM. 5. Learner will be able to understand designing of SRAM and DRAM. 6. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to analyze Need of Design for Testability (DFT), Controllability, predictability, testability, built in Self Test (BIST), Partial and full scan check. Understanding the boundary scancheck, JTAG, Test Access Port (TAP) controller. 7. Learner will be able to formulate their research work with the help of literature review 7. Learner will be able to develop an understanding of various research design and techniques 7. Learner will be able to collect the statistical data with different methods related to research work 7. Learner will be able to write their own research work with ethics and non-plagiarized way 7. S. A. Toch Sem-tV
CO1 CO2 CO3 CO4 CO5 CO6 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6	1. Learner will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics. Fabrication process of MOS device, Making circuit with MOS devices their design equation. designing layout of such circuits, studying pass transistors 2. Learner will be able to understand VHDL language for synthesizing Digital Circuits. Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding how to write package, sub program and test benches. 3. Learner will be able to understand Programming Technologies, Programmable LogicBlock Architectures, Programmable Interconnects, Programmable I/O blocks inFPGAs, Dedicated Specialized Components of FPGAs, and Applications of FPGAs. 4. Learner will be able to understand designing of SRAM and DRAM. 5. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing, algorithms for global rou
CO1 CO2 CO3 CO4 CO5 CO6 CO01 CO2 CO3 CO4 CO5 CO6 CO6 COCOCCOCOCCOCCOCCOCCOCCOCCOCCOCCOCCOCCO	Lizemer will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics. Fabrication process of MOS device, Making circuit with MOS devices their design equation, designing layout of such circuits, studying pass transistors. 2. Learner will be able to understand VHOL language for synthesizing Digital Circuits. Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding how to write package, sub program and rest benches. 3. Learner will be able to understand Programming Technologies, Programmable LogicBlock Architectures, Programmable Interconnects, Programmable I/O blocks in PPGAs, Dedicated Specialized Components of PPGAs, and Applications of PPGAs. 4. Learner will be able to understand designing of SRAM and DRAM. 5. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to analyze Need of Design for Testability (DFT), Controllability, predictability, testability, built in Self Test (BIST), Partial and full scan check. Understanding the boundary scancheck, ITAG, Test Access Port (TAP) controller. 7. Research Methodology 1. Learner will be able to develop an understanding of various research devinques 4. Learner will be able to develop an understanding of various research work with the help of literature review 5. Learner will be able to develop an understanding of various research work 5. Learner will be able to develop an understanding of various research work 5. Learner will be able to develop an understanding of various research work with efficient methods related to research work 5. Learner will be able to overlie their own research work with efficient methods related to research work 5. Learner will be able to write their own research work wi
CO1 CO2 CO3 CO4 CO5 CO6 COUrse Name:- CO2 CO3 CO4 CO5 CO6 Course Name:- CO1 CO2 CO3 CO4 CO5 CO6	Laarner will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics Fabrication process of MOS device, Making circuit with MOS devices their design equation, designing layout of such circuits, studying pasts transitions. 2.Laarner will be able to understand VIDL language for synthesizing (biglial circuits, Digital circuits include asynchronous and synchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding how to write package, sub program and test benches. 3.Learner will be able to understand designing of SRAM and DRAM. 5.Learner will be able to understand designing of SRAM and DRAM. 5.Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6.Learner will be able to analyze Need of Design for Testability (DFT), Controllability, predictability, built in Self Test (BIST), Partial and full scan check. Understanding the boundary scancheck, JTAG, Test Access Port (TAP) controller. 7.Learner will be able to analyze Need of Design for Testability (DFT), Controllability, predictability, built in Self Test (BIST), Partial and full scan check. Understanding the boundary scancheck, JTAG, Test Access Port (TAP) controller. 7.Learner will be able to formulate their research work with the help of literature review 7.Learner will be able to develop an understanding of various research design and techniques 7.Learner will be able to collect the statistical data with different methods related to research work 7.Learner will be able to collect the statistical data with different methods related to research work 7.Learner will be able to collect the statistical data with different methods related to research work 7.Learner will be able to collect the statistical data with different methods related to research wor
CO1 CO2 CO3 CO4 CO5 CO6 COurse Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 COurse Name:- CO1 CO2 CO3 CO4 CO5 CO6	Learner will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics Fabrication process of MOS device, Making circuit with MOS devices their design equation. designing layout of such circuits, studying pass transistors 2.Learner will be able to understand VHDL language for synthesizing biglat circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding bow over the package, such program and sets benches. 3.Learner will be able to understand Programming Technologies, Programmable LogiciBlock Architectures, Programmable Interconnects, Programmable I/O blocks in PFGAs, Dedicated Specialized Components of PFGAs, and Applications of PFGAs. 4.Learner will be able to understand designing of SRAM and DRAM. 5.Learner will be able to analyze Need of Design for Testability, predictability, testability, built in Self Test (BIST), Partial and full scan check. Understanding the boundary strancheck, JTAG, Test Access Port (TAP) controller. 6.Learner will be able to analyze Need of Design for Testability (DFT), Controllability, testability, built in Self Test (BIST), Partial and full scan check. Understanding the boundary strancheck, JTAG, Test Access Port (TAP) controller. 7.Learner will be able to develop an understanding of various research design and techniques 7.Learner will be able to develop an understanding of various research design and techniques 7.Learner will be able to develop an understanding of various research design and techniques 7.Learner will be able to develop an understanding of various research work with the hips and many particular and particular and particular will be able to develop an understanding of various research work with the properties of the particular will be able to develop an understanding of various research work with the properties of the particular will be able to develop an understanding of various research design and
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CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO1 CO2 CO3 CO4 CO5 CO6 CO0	Licenser will be able to understand MOSFET device structures their physiciologerations, Current voltage characteristics Fabrication process of MOS device, Making circuit with MOS devices their design equation, designing layout of such circuits, studying pasts transitors 2. Learner will be able to understand VIOL language for synthesizing Digital Circuits. Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding but our direct standing both our write packages, but program and test benches. 3. Learner will be able to understand Programming Technologies, Programmable Logiciliock Architectures, Programmable Interconnects, Programmable I/O blocks in FPGA, Dedicated Specialized Components of FPGAs, and Applications of FPGAs. 4. Learner will be able to understand designing of SRAM and DRAM. 5. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to analyze Need of Design for Testability (DFT), Controllability, predictability, built in Self Test (BIST), Partial and full scan check. Understanding the boundary scancheck, ITAG, Test Access Port (TAP) controller. 7. Learner will be able to formulate their research work with the help of Ritestature review 7. Learner will be able to orderelop an understanding of various research design and techniques 7. Learner will be able to collective this statistical data with different methods related to research work 7. Learner will be able to orderelop an understanding of various research design and techniques 7. Learner will be able to orderelop and simulation of research work 7. Learner will be able to orderelop and simulation of research work 8. Learner will be able to orderelop and simulation of research work 8. Learner will be able to orderelop and simulatio
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CO1 CO2 CO3 CO4 CO5 CO6 COUrse Name:- CO1 CO2 CO3 CO4 CO5 CO6 COUrse Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO0	Learner will be able to understand MOSFET device structures their physicaloperations, Current voltage characteristics Fabrication process of MOS device, Making circuit with MOS devices their design equation, designing layout of such circuits, studying past stransistors 2. Learner will be able to understand Writi. Imaguage for synthesizing Digital Circuits, Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding from with package, but ower the package, sub power man date to therobes. 2. Learner will be able to understand Programming Technologies, Programmable Logicillock Architectures, Programmable interconnects, Programmable VIO blocks in PFGAs, Dedicated Specialized Components of PFGAs, and Applications of PFGAs. 4. Learner will be able to understand designing of SRAM and DRAM. 5. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of local routing and full scan check. Understanding the boundary scancheck, ITAG, Test Access Port (TAP) controller. 7. Learner will be able to deviate the meaning, objective, monovation and type of research 8. Learner will be able to deviate the meaning, objective, monovation and type of research work 9. Learner will be able to deviate the statistical data with different methods related to research work 9. Learner will be able to deviate their own research work with their and non-plagarized way 9. The Machine Statistical data with different met
CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO1 CO1 CO2 CO3 CO4 CO5 CO1 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5	Licenser will be able to understand MOSFT device structures their physicaloperations, Current voltage characteristics Paincation process of MOS device, Making circuit with MOS devices their design equation, designing layout of such circuits, studying state structions are structured. 2. Lacenser will be able to understand VoTNL language for synthesizing Digital Circuits. Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding for the package, usb, program and test benefices. 3. Lacenser will be able to understand Programming Technologies, Programmable Logiciliosis Architectures, Programmable interconnects, Programmable (10 blocks in PFGAs, Dedicated Specialized Components of PFGAs, and Applications of PFGAs. 4. Lacenser will be able to understand designing of SRAM and DRAM. 5. Learner will be able to implement Floor planning concepts, shape functions and floor plan sizing, understanding types of focal routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to analyze Need of Design for Testability (DFT), Controllability, predictability, built in Self Test (IBST), Partial and full scan check Understanding the boundary scanchesk, ITAG, Test Access Port (TAP) controller. 7. Learner will be able to develop an understanding of virious research design and techniques 4. Learner will be able to develop an understanding of virious research design and techniques 4. Learner will be able to develop an understanding of virious research seign and techniques 5. Learner will be able to develop an understanding of virious research work with the help of literature review 5. Learner will be able to develop an understanding of virious research work with the proposed work with definent methods related to research work 6. Learner will be able to write their own research work with definent methods related to research work 7. M. Tech Sem IV
CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO4 CO5 CO6 CO07 CO07 CO07 CO07 CO07 CO07 CO07 CO07	Lizemer will be able to understand MOSFET device structures their physicaloperations, Current village characteristics Fabrication process of MOS device, Making circuit with MOS devices their design equation, designing layout of such circuits, studying past transitions. Zizemer will be able to understand VTOR, language for synthesizing bigital Circuits. Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and menishmachines. Inderstanding to to write packages, they great and letel between. 3. Lazemer will be able to understand Programming Technologies, Programmable Logicilios. Architectures, Programmable Interconnects, Programmable (VD blocks in PRGA), Dedicated Specialized Components of PRGA, and Applications of PRGA. 4. Learner will be able to understand designing of SRAM and DBAMA. 5. Learner will be able to implement Picor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to implement Picor planning concepts, shape functions and floor plan sizing, understanding types of local routing problems Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to analyze Need of Design for Testability (DFT), Controllability, perdictability, built in Self Test (BIST), Partial and full scan check Understanding the boundary scanched, ATAG, Test Access Port (TAP) controller. 7. Learner will be an analyze Need of Design for Testability (DFT), Controllability, perdictability, built in Self Test (BIST), Partial and full scan check Understanding the boundary scanched, ATAG, Test Access Port (TAP) controller. 8. Learner will be an analyze Need of Design for modeling of uncordinated or selection of the partial scancers of the process of the process of the partial scancers of the process of the partial scancers of the partial scancers
CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO1 CO2 CO3 CO4 CO5 CO6 CO0	Lizerner will be able to understand MOSFT device structures their physicaloperations, Current voltage characteristics. Fabrication process of MOS device, Making circuit with MOS devices their design equation, designing layout of such circuits, studying past strainistors. 2. Lasarner will be able to understand VHOL language for synthesizing Digital Circuits. Digital circuits include asynchronous and synchronous design issues and statemachine synthesizing this circuits. Building state machines with Moore and mealymachines. Understanding how to write package, usby program and test benches. 3. Lazarner will be able to understand Programming Technologies, Programmable Logicillock Architectures, Programmable interconnects, Programmable (I) blocks ind PCAs, Declated Specialized Components of PFGAs, and Applications of PFGAs. 4. Lazarner will be able to understand designing of SIAM and DRAM. 5. Learner will be able to implement Floor planning concepts, shape functions and floor plan isting, understanding types of local routing problems. Area routing, channelrouting, global routing, algorithms for global routing. 6. Learner will be able to analyze Need of Design for Testability (DFT), Controllability, predictability, built in Self Test (BiCT), Partial and full scan check Understanding the boundary scanches, LTAG, Test Access Port(TAP) controller. 7. Learner will be able to develop an understanding of various research design and techniques 8. Learner will be able to develop an understanding of various research design and techniques 9. Learner will be able to develop an understanding of various research design and techniques 9. Learner will be able to overview howeview for modeling and diministration of research work 9. Learner will be able to overview howeview for modeling and diministration of research work 9. Learner will be able to overview howeview for modeling and diministration of research work 9. Learner will be able to write their own research work with the filter and non-plagarized way 9. The Test C

CO1	To design and implement programs on 8086 microprocessor.
CO2	To design and implement programs on 8086 microprocessor. To design I/O circuits and Memory Interfacing circuits.
CO3	To exhibit knowhow on micro-controller interfaces & programming.
CO4	To experiment with MCSS1 and PIC18 micro-controller.
CO4	10 experiment with MC321 and PC120 inter-Octionale.
C N	Pate Charles and Applications
Course Name:-	Data Structures and Applications
CO1	To write neat code by selecting appropriate data structure and demonstrate a working solution for a given problem.
CO2	To think of all possible injurts to an application and handle all possible errors properly.
соз	To analyze clearly different possible solutions to a program and select the most efficient one.
CO4	To demonstrate the ability to write reusable code and abstract data types in C, using object-based way of thinking
Course Name:-	Discrete Structures and Application
CO1	To perform operations on various discrete structures such as sets functions, relations, and sequences
CO2	To solve problems using counting techniques, permutation and combination, recursion and generating functions
соз	To construct and verify correctness of a Boolean expression using K-Maps and truth tables
CO4	To use graphs as tools to visualize and simplify Problems
CO5	To solve problems using algebraic structures (Rings, Monoids and Groups).
Course Name:-	Internetworking Protocols
CO1	To compare and contrast TCP and UDP in terms of the application that uses them.
CO2	To design network-based applications using the socket mechanism
CO3	To work with IPv4 addresses in terms of subnetting and supernetting.
CO4	To setup a host and network in terms of IP addressing
Course Name:-	Product Design Engineering
CO1	Create simple mechanical designs.
CO2	Create documents for knowledge sharing.
соз	Manage own work to meet requirements.
CO4	Work effectively with colleagues.
CO5	Maintain a healthy, safe and secure working environment.
CO6	Provide data/information in standard formats.
CO7	Develop their knowledge, skills and competence.
Course Name:-	Organizational Behavior
CO1	Students will become more self aware and will have identified areas of development for long term effectiveness.
CO2	Students will understand the role that individuals play collectively to perform in organizations.
T.E. Part-II Sem-	
rait-ii Sem-	vi
	COMPUTER GRAPHICS
Course Name:-	COMPUTER GRAPHICS
Course Name:-	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices.
Course Name:- CO1 CO2	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and
Course Name:- CO1 CO2	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and
Course Name:- CO1 CO2 CO3	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm
Course Name:- CO1 CO2 CO3 Course Name:-	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY
Course Name:- CO1 CO2 CO3 Course Name:- CO1	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions
Course Name:- CO1 CO2 CO3 Course Name:- CO1 CO2	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues
COUTSE Name:- CO1 CO2 CO3 COURSE Name:- CO1 CO2 CO3	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with how threats to an organization are discovered, analyzed, and dealt with
Course Name:- CO1 CO2 CO3 Course Name:- CO1 CO2 CO3 CO4	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with how threats to an organization are discovered, analyzed, and dealt with To be familiar with network security threats and countermeasures
Course Name:- CO1 CO2 CO3 Course Name:- CO1 CO2 CO3 CO4 CO5	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with how threats to an organization are discovered, analyzed, and dealt with To be familiar with network security threats and countermeasures
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Course Name:- CO1 CO2 CO3 CO1 CO2 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with now threats to an organization are discovered, analyzed, and dealt with To be familiar with network security threats and countermeasures To be familiar with advanced security issues and technologies Internet Technology
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Course Name:- CO1 CO2 CO3 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO5 Course Name:- CO1 CO2	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with how threats to an organization are discovered, analyzed, and dealt with To be familiar with network security threats and countermeasures To be familiar with advanced security issues and technologies Internet Technology Write a code using Java Socket programmingby defining client-server model. Analyze various Protocols using Protocol Analyzing Tools like wireshark and tcpdump.
Course Name:- CO1 CO2 CO3 CO1 CO2 CO3 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO7	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with now threats to an organization are discovered, analyzed, and dealt with To be familiar with network security threats and countermeasures To be familiar with network security issues and technologies Internet Technology Write a code using Java Socket programmingby defining client-server model. Analyze various Protocols using Protocol Analyzing Tools like wireshark and topdump. Esplainprotocols in Network Layer (IPV6 and ICMPV6) by sketching its packet formats
Course Name:- CO1 CO2 CO3 CO1 CO2 CO3 CO4 CO5 Course Name:- CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with now threats to an organization are discovered, analyzed, and dealt with To be familiar with network security threats and countermeasures To be familiar with network security issues and technologies Internet Technology Write a code using Java Socket programmingby defining client-server model. Analyze various Protocols using Protocol Analyzing Tools like wireshark and topdump. Esplainprotocols in Network Layer (IPV6 and ICMPV6) by sketching its packet formats
Course Name:- CO1 CO2 CO3 CO1 CO2 CO3 CO4 CO5 Course Name:- CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with network security threats and countermeasures To be familiar with network security threats and countermeasures To be familiar with advanced security issues and technologies Internet Technology Write a code using Java Socket programmingby defining client-server model. Analyze various Protocols using Protocol Analyzing Tools like wireshark and topdump. Explainprotocols in Network Layer (IPV6 and ICMPv6) by sketching its packet formats Explain working of various Transport Layer and Application Layer Protocols (FTP, FTFP, HTTP, SMTP, SMTP, SMPP, RTCP, VoIP).
Course Name:- CO1 CO2 CO3 CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO2 CO3 CO4 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO5 CO6 CO6 CO7	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm FORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with how threats to an organization are discovered, analyzed, and dealt with To be familiar with network security threats and countermeasures To be familiar with advanced security issues and technologies Internet Technology Write a code using Java Socket programmingby defining client-server model. Analyze various Protocols using Protocol Analyzing Tools like wireshark and tcpdump. Explainprotocols in Network Layer (IPAG and ICMPAG) by sketching its packet formats Explain working of various Transport Layer and Application Layer Protocols (FTP, FTFP, HTTP, SMTP, SMMP, RTP, RTCP, VoIP).
Course Name:- CO1 CO2 CO3 CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with network security threats to an organization are discovered, analyzed, and dealt with To be familiar with network security threats and countermeasures To be familiar with network security issues and technologies Internet Technology Write a code using Java Socket programming by defining client-server model. Analyze various Protocols using Protocol Analyzing Tools like wireshark and topdump. Explainprotocols in Network Layer (IPV6 and KCMPV6) by sketching its packet formats Explain working of various Transport Layer and Application Layer Protocols (FTP, FTTP, HTTP, SMTP, SMMP, RTP, RTCP, VoIP). OPERATING SYSTEM-II understand fundamental concepts of Unix.
Course Name:- CO1 CO2 CO3 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO5 CO5 CO6 CO6 CO7	COMPUTER GRAPHICS Understand basics of computer graphics & graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with not whore security governance, and related legal and regulatory issues To be familiar with not whore security the state and contermeasures To be familiar with advanced security issues and technologies Internet Technology Write a code using Java Socket programmingby defining client-server model. Analyze various Protocols using Protocol Analyzing Tools like wireshark and topdump. Explainprotocols in Network Layer (IPv6 and ICMPv6) by sketching its packet formats Explain working of various Transport Layer and Application Layer Protocols (FTP, FTFP, HTTP, SMTP, SMMP, RTP, RTCP, VoIP). OPERATING SYSTEM-II understand fundamental concepts of Unix. study Buffer cache
Course Name:- CO1 CO2 CO3 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO2 CO3 CO4 CO5 CO2 CO3 CO4 CO5 CO2 CO3 CO4 CO5 CO3 CO4 CO5 CO4 CO5	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand in Implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with now threats to an organization are discovered, analyzed, and dealt with To be familiar with setwork security threats and countermeasures To be familiar with advanced security issues and technologies Internet Technology Write a code using Java Socket programmingby defining client-server model. Analyze various Protocols using Protocol Analyzing Tools like wireshark and tepdump. Explainprotocols in Network Layer (IPv6 and KOMPv6) by sketching its packet formats Explain working of various Transport Layer and Application Layer Protocols (FTP, TFTP, HTTP, SMTP, SMMP, RTP, RTCP, VoIP). Socker Time System-II understand fundamental concepts of Unix. study Buffer cache study File system in Unix & system calls
Course Name:- CO1 CO2 CO3 CO4 CO5 CO5 CO4 CO5	Computer Graphics & graphics Algorithm INFORMATION SCURITY To be familiar with network security designs using available secure solutions To master information security governance, and related gleal and regulatory issues To be familiar with network security threats and countermeasures To be familiar with network security threats and countermeasures To be familiar with network security sisues and technologies Internet Technology Write a code using Java Socket programmingby defining client-server model. Analyze various Protocols using Protocol Analyzing Tools like wireshark and topdump. Explainprotocols in Network Layer (PVG and ICM/NyG) by sketching its packet formats Explain working of various Transport Layer and Application Layer Protocols (FTP, TTP, HTTP, SMTP, SMP, RTCP, VoIP). OPERATING SYSTEM-II understand fundamental concepts of Unix. study Buffer cache study File system in Unix & system culls study structure of process
Course Name:- CO1 CO2 CO3 CO1 CO2 CO3 CO4 CO5 CO5 CO4 CO5	Computer graphics & graphics & graphics devices. Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with network security threats and countermeasures To be familiar with network security threats and countermeasures To be familiar with network security issues and technologies Interest Technology Write a code using lava Socket programmingby defining client-server model. Analyze various Protocols using Protocol Analyzing Tools like wireshark and tcpdump. Explainprotocok in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explainprotocok in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explainprotocok in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by ske
Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO7	Computer graphics & graphics & graphics devices. Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with network security threats and countermeasures To be familiar with network security threats and countermeasures To be familiar with network security issues and technologies Interest Technology Write a code using lava Socket programmingby defining client-server model. Analyze various Protocols using Protocol Analyzing Tools like wireshark and tcpdump. Explainprotocok in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explainprotocok in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explainprotocok in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by sketching its packet formats Explain for strick in Network Layer (IPNs and ICMPNs) by ske
Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO7	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm NFORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with now threats to an organization are discovered, analyzed, and dealt with To be familiar with now threats to an organization are discovered, analyzed, and dealt with To be familiar with now threats to an organization are discovered, analyzed, and dealt with To be familiar with advanced security given and extendingles Internet Technology Write a code using java Socket programmingby defining client-server model. Analyze various Protocols wing Protocol Analyzing Tools like wireshark and topdump. Explaian protocols in Network Layer (IPN-6 and KCMP-0) by sketching its packet formats Explaian protocols in Network Layer (IPN-6 and KCMP-0) by sketching its packet formats Explaian protocols in Network Layer (IPN-6 and KCMP-0) by sketching its packet formats Understand fundamental concepts of Unix. study Buffer cache study File system in Unix & system calls study File system in Unix & system calls study File system in Unix & system calls study Memory management and U/O subsystem.
Course Name:- CO1 CO2 CO3 CO4 CO5 CO6	COMPUTER GRAPHICS Understand basics of computer graphics & graphics devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm INFORMATION SECURITY To be familiar with network security designs using available secure solutions To be familiar with network security designs using available secure solutions To be familiar with network security governance, and related legal and regulatory issues To be familiar with network security governance, and related legal and regulatory issues To be familiar with network security threats and countermeasures To be familiar with network security threats and countermeasures To be familiar with advanced security issues and technologies Write a code using Java Socket programmingly defining client-server model. Write a code using Java Socket programmingly defining client-server model. Analyze various Protocols using Protocol Analyzing Tools like wirestank and topdomp. Explainprotocols in Network Layer (IPv6 and ICMPv6) by sketching its packet formats Explain working of various Transport Layer and Application Layer Protocols (IFP, TETP, HTTP, SMTP, SMNP, RTP, RTP, VoIP). OPERATING SYSTEM-II understand fundamental concepts of Unix. study File system in Unix & system calls study structure of process study File system in Unix & system calls study structure of process study Process control and scheduling study Memory management and I/O subsystem.
Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO6 CO7	COMPUTER GRAPHICS Understand basics of computer graphic & graphic devices. Understand and implement different aspect of Geometric Transformations and Computer Graphics Algorithm FORMATION SECURITY To be familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with network security governance, and related legal and regulatory issues To be familiar with network security and electric legal and regulatory issues To be familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security issues and technologies For the familiar with advanced security designs and technologies For the familiar with advanced security designs and technologies For the familiar with advanced security designs and technologies For the familiar with advanced security designs and technologies For the familiar with advanced security designs and technologies For the famili
Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO7	Computer graphics & graphics devices. Understand basic of Computer graphics & graphics devices. Computer Graphics Algorithm Compu
Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO7	Computer graphics & graphics devices. Understand basic of Computer graphics & graphics devices. Computer Graphics Algorithm Compu
Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 COC6 COC7 COC7 COC7 COC7 COC7 COC7	COMPUTES GRAPHICS Understand basics of computer graphics & graphics devices. Understand basic of computer graphics & graphics devices. Computer Graphics Algorithm NOCHANION SECURITY To the familiar with network security designs using available secure solutions To master information security governance, and related legal and regulatory issues To be familiar with network security threats and countermeasures To be familiar with network security threats and countermeasures To be familiar with network security threats and countermeasures To be familiar with advanced security issues and technologies Internet Technology Write a cold using lava Socket programmingly defining client-server model. Analyse various Proteos shape Proteos Analysing Tools like winshark and reputation. Explain working of various Transport Layer and Application Layer Protocols (TP, TTP, HTTP, SMP, SMM, RTP, RTCP, VoIP). OPERATING SYSTEM-I understand fundamental concepts of Unix. study Effective of process study Effective of process study Free system in Unix & system calls study Memory management and U(O subsystem. Solve were target Quality Assurance J. After undergraph the course the students will have the Basic knowledge regarding Software Testing and concepts used in If industry. J. After undergraph the course the students will have the Basic knowledge regarding Software Testing and concepts used in If industry. J. After undergraph the course the students will have the Basic knowledge regarding Software Testing and concepts used in If industry. J. After undergraph the course the students will have the Basic knowledge regarding Software Testing and concepts used in If industry.
Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO7 CO6 CO7	COMPUTES REAPHICS Understand abusics of computer graphics & graphics devices. Understand abusics of computer graphics & graphics devices. Understand abusics of computer graphics & graphics devices. Computer Graphics Algorithm INDEMATION SECURITY To be familiar with network security designs using abuilable secure solutions To matter information security governance, and related legal and regulatory issues To matter information security governance, and related legal and regulatory issues To be familiar with network security threats and countermeasures To be familiar with network security threats and countermeasures To be familiar with network security threats and countermeasures To be familiar with network security threats and countermeasures To be familiar with network security threats and countermeasures To be familiar with network security threats and countermeasures To be familiar with network security threats and countermeasures To be familiar with network security threats and countermeasures To be familiar with network security programmingly defining client-server model. Analyza various Protocols using Protocol Analyzing Tools like wireshant and reputing. Explainmentation for Network Layer (IPAS and CRAPNS) by sectioning Its packet formats Explainmentation for Network Layer (IPAS and CRAPNS) by sectioning Its packet formats Explainmentation for network Layer (IPAS and CRAPNS) by sectioning Its packet formats Explainmentation for network Layer (IPAS and CRAPNS) by sectioning Its packet formats Explainmentation for network Layer (IPAS and CRAPNS) by sectioning Its packet formats Explainmentation for network Layer (IPAS and CRAPNS) by sectioning Its packet formats Explainmentation for network Layer (IPAS and CRAPNS) by sectioning Its packet formats Explainmentation for network Layer (IPAS and CRAPNS) by sectioning Its packet formats Explainmentation for network Layer (IPAS and CRAPNS) by sectioning Its packet formats Explainmentation for network Layer (IPAS and CRAPNS) by sectioning Its packet for
Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO7	Computer Graphics Datised of computer graphic & graphics device. Understand and basics of computer graphic & graphics device. Computer Graphics Algorithm NORMATION SECURITY To the familiar with network security designs using available secure solutions To master information security governance, and related legil and regulatory issues To be familiar with network security programme, and related legil and regulatory issues To be familiar with network security yournance, and related legil and regulatory issues To be familiar with network security programme, and related legil and regulatory issues To be familiar with network security yournance, and related legil and regulatory issues To be familiar with advanced security issues and technologes Withe accel using lava Socket programmingly defining client-sever model. Managewer once Processor single Protocol Analysing Tools like wireshan and technologes Explains records in Network layer (IPA and LOMPA) by secting its packet formuse Explains records in Network layer (IPA and LOMPA) by secting its packet formuse Explains records in Network layer (IPA and LOMPA) by secting its packet formuse Explains records and scheduling study Processor control and scheduling study Processor and and scheduling study Processor and and scheduling 10 After randering this course he students will have the Basic knowledge regarding Software Testing and concepts used in IT industry. 3 Solventer Testing & Quality Assurance 10 After undergrang this course he students will have the Basic knowledge regarding Software Testing and concepts used in IT industry. 3 Solventer Testing & Coulity Assurance 10 After undergrang this course he students will have the Basic knowledge regarding Software Testing and concepts used in IT industry. 3 Solventer Testing & Coulity Assurance 10 After undergrang this course he students will have the Basic knowledge regarding Software Testing and concepts used in IT industry. 3 Solvents will all be to learn about techniques used while developing
Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO7 CO6 CO7	COMPATION SECURITY Internation about of computer graphics & graphics devices. Understand and implement different space of Geometric Transformations and Computers: Graphics Algorithm INCRIMATION SECURITY To be familiar with orderent security designs using evaluable score solutions To be familiar with how throats is on an agranization are discovered, analyzed, and dealt with To be familiar with the bound security governance, and related legal and regularyous suss To be familiar with the bound security governance, and related legal and regularyous suss To be familiar with the with security governance, and related legal and regularyous suss To be familiar with the discovered, analyzed, and dealt with To be familiar with advanced security governance, and related legal and regularyous susses To be familiar with advanced security governance, and related legal and regularyous susses To be familiar with the discovered, analyzed, and dealt with To be familiar with the discovered analyzed, and dealt with To be familiar with the discovered analyzed, and dealt with To be familiar with the discovered analyzed security governance, and related legal and regularyous susses and security governance, and related legal and regularyous susses and security governance, and related legal and regularyous susses and security governance, and related legal and regularyous susses and security governance, and related legal and resolutions sussesses and security governance, and related legal and resolutions sussesses and security governance, and related legal and resolutions sussesses and security governance, and related legal and resolutions sussesses and security governance, and related legal and resolutions sussesses and security governance, and related legal and resolutions sussesses and security governance, and related legal and resolutions sussesses and security governance, and related legal and resolutions sussesses and security governance, and related legal and resolutions sussesses and security governance, and resolut
Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO7 CO6 CO7	Understand also lasts of compared graphics & graphics devices. Understand and implement different support of connective Transformations and Compared and implement different support of Geometre Transformations and Compared and implement different support of Geometre Transformations and Compared and Spatial Algorithm NOMATION SCURITY To be familiar with retwork security designs using evaluable secure solutions To be familiar with retwork security designs using evaluable secure solutions To be familiar with how threats to an organization are discovered, analysed, and dealt with To be familiar with how threats to an organization are discovered, analysed, and dealt with To be familiar with how threats to an organization are discovered, analysed, and dealt with To be familiar with how threats to an organization are discovered, analysed, and dealt with To be familiar with how threats to an organization are discovered, analysed, and dealt with To be familiar with how threats to an organization are discovered, analysed, and dealt with To be familiar with how threats to an organization are discovered, analysed, and dealt with To be familiar with another discovered security increase security increase and retrologies Write a code using laws Socket programmingly defining client-server model. Analyses various Protocols using Protocol Strap Protocols (PTP, FTP, HTTP, SMTP, SMSP, RTP, NOP). OPERATION SYSTEM H understand fundamental concepts to Univ. study inforce control of the Compared of Univ. study inforce control of substitute study inforce control of dealthing 10 After runderspand fundamental concepts to dealth information of the Substitute of process NOPPART of the Substitute of process NOPPART of Substitute o
Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO7 CO6 CO7	Understand absisted computer graphics & graphics odvices. Understand absisted computer graphics & graphics odvices. Understand absisted computer draphics & graphics odvices. Understand absisted of computer draphics & graphics odvices. Understand absisted of computer draphics & graphics odvices. INCOMATION SECURITY To be familiar with some own graphics draphic and graphic odvices or solutions. To be familiar with own provides you say and existed legal and regulatory issues. To be familiar with own provides you say and existed legal and regulatory issues. To be familiar with own breats to an organization are discovered, universel, under deal with. To be familiar with own breats to an organization are discovered, universel, under deal with. To be familiar with own breats to an organization are discovered, universel, under deal with. To be familiar with own breats to an organization are discovered, universel, under deal with. To be familiar with own breats to an organization are discovered, universel, under deal with. To be familiar with own breats to security breats and devictorigues. To be familiar with own breats to security breats and devictorigues. To be familiar with own breats to security defining clear severe model. Analyses wronts Protection units Protection Analysing Tools like write shart topolismy. To provide the control of protection units Protection Analysing Tools like write shart topolismy. To provide the protection of the protection of Univ. **Subjection Control of Statistical Concepts of Univ. **Subjection Control of Statistical Concepts of Univ. **Subjection Univ. & System culti. &
Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7	Understand absisted computer graphics & graphics obvioce. Understand absisted computer graphics & graphics obvioce. Understand absisted computer graphics & graphics obvioce. Understand absisted computer (Graphics Algorithm) INCOMATION SECURITY To be familiar with short kecurity desputs using available score solutions. To be familiar with short kecurity desputs using available score solutions. To be familiar with short kecurity desputs using available score solutions. To be familiar with short kecurity desputs using available score solutions. To be familiar with short kecurity desputs using available score solutions. To be familiar with short kecurity desputs and disclosely legal and regulatory issues. To be familiar with short kecurity score and resident legal and regulatory issues. To be familiar with short kecurity score and versident legal and regulatory issues. To be familiar with short kecurity score and versident legal and regulatory issues. To be familiar with short kecurity score and versident legal and regulatory issues. To be familiar with short kecurity score and versident legal and regulatory issues. To be familiar with short kecurity score and versident legal and regulatory issues. To be familiar with short kecurity score and versident legal and regulatory issues. To be familiar with short kecurity score and versident legal and regulatory issues. To be familiar with source facility score and versident legal and regulatory issues. To be familiar with source facility score familiar with source familiar with new familiar familiar with new f
Course Name:- CO1 CO2 CO3 CO4 CO5 CO6 CO7	Consport To GARAPHICS Understand all on implement effected space of Geometric Transformations and Composer Sparks Algorithm MOMATION SCURITY To be familiar with sometric security despits using available scure solutions To make information and understand space of Geometric Transformations and Composer Sparks Algorithm MOMATION SCURITY To be familiar with sometric security despits using available scure solutions To be familiar with sometric spectrum against and intelled legal and registrary issues To be familiar with sometric spectrum against and disclosed legal and registrary issues To be familiar with sometric spectrum againstand are discovered, analysed, and dealt with To be familiar with advanced security press understand success and security spectrum and success security issues and technologies Internet Technology White a code using and Society programmingly defining clear-server model. White a code using and Society programmingly defining clear-server model. White a code using and Society programmingly defining clear-server model. White a code using and Society programmingly defining clear-server model. Parkating of various Transport layer and Agaptication layer Protocols (TIP, TITP, HITP, SMIP, SMIP, HITP, HITP, HITP, HITP, SMIP, SMIP, HITP, HITP, HITP, HITP, HITP, SMIP, SMIP, HITP, HITP, HITP, HITP, HITP, HITP, SMIP, SMIP, HITP,

CO2 CO3	Identify Key challenges in storage networks. Be aware of significance of Data protection.
CO4	Understand importance of backup and replication
COS	Know business needs of storage management.
cos	25 MARIE BOURIOUS (NEOLOGY) AND GREAT MINING CHIEFE.
Course Name:-	Cloud Computing
CO1	1. Use Cloud Platforms in Industry.
CO2	2. Understand Cloud Security and Virtualization.
соз	3. Use Cloud Computing Applications.
Course Name:-	Information Technologyand Business Methodology
CO1	1. Identify the organizational structure of enterprise resource planning.
CO2	2. Describe skills needed by managers.
соз	3. Explain various applications in SAP R/3.
CO4	4. Explain CRM technology by differentiating CRM and eCRM.
CO5	5. Interpret Concepts of Sales Force Automation(SFA) and Enterprise Marketing Automation(EMA).
CO6	6. Explain call centers mean customer interaction & Application Service Provider(ASP).
Course Name:-	Business Intelligent System
CO1	1. To introduce the students limitations of transaction processing systems and benefits of Analytical processing systems
CO2	2. Business Intelligence systems, its architecture and to use it as a decision making systems
соз	3. Designing Dimensional model, Fact table and dimension tables and correlate them usingvarious models like star schema, snow flack schema
CO4	4. Design and development of Business Intelligent Applications
Course Name:-	Web Technology-II
CO1	KnowWeb technology concepts and use the required tools.
CO2	Classify and explainclient side and server side scripting languages and validation techniques.
соз	Explaindatabase access technologies and state management techniques.
CO4	Write a code to develop real life Web applications using ASP.NET and PHP.
Course Name:-	Advanced Software Technologies
CO1	1. Students will able to understand differences in desktop applications
CO2	2. Students will able to understand Enterprise JavaBeans (EIB) technologies.
соз	3. Students will able to understand To understand MVC
CO4	4. Student will able to understand different technology related to MVC and technology related to it.
CO5	5. Student will able to develop real hibernate technology can build various kinds of applications based on it.
	INSTRUMENTATION ENGINEERING
	S.Y. B Tech Part-II Sem-IV
Course Name:-	Digital electronics
CO1	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement.
CO1 CO2	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression.
CO1 CO2 CO3	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions.
CO1 CO2 CO3	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits.
CO1 CO2 CO3	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions.
CO1 CO2 CO3 CO4 Course Name:-	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System
CO1 CO2 CO3 CO4 Course Name:-	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System * To understand the use of transfer function models for analysis physical systems and introduce the control system components.
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System • To understand the use of transfer function models for analysis physical systems and introduce the control system components. • To provide adequate knowledge in the time response of systems and steady state error analysis.
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO2 CO3	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System • To understand the use of transfer function models for analysis physical systems and introduce the control system components. • To provide adequate knowledge in the time response of systems and steady state error analysis. • To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems.
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System • To understand the use of transfer function models for analysis physical systems and introduce the control system components. • To provide adequate knowledge in the time response of systems and steady state error analysis. • To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems. • To introduce stability analysis and design of compensators
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO2 CO3	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System • To understand the use of transfer function models for analysis physical systems and introduce the control system components. • To provide adequate knowledge in the time response of systems and steady state error analysis. • To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems.
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO5	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System • To understand the use of transfer function models for analysis physical systems and introduce the control system components. • To provide adequate knowledge in the time response of systems and steady state error analysis. • To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems. • To introduce state variable representation of physical systems and study the effect of state feedback.
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System • To understand the use of transfer function models for analysis physical systems and introduce the control system components. • To provide adequate knowledge in the time response of systems and steady state error analysis. • To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems. • To introduce stability analysis and design of compensators
CO1 CO2 CO3 CO4 COURSE Name:- CO1 CO2 CO3 CO4 CO5 COURSE Name:-	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System To understand the use of transfer function models for analysis physical systems and introduce the control system components. To provide adequate knowledge in the time response of systems and steady state error analysis. To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems. To introduce stability analysis and design of compensators To introduce state variable representation of physical systems and study the effect of state feedback.
CO1 CO2 CO3 CO4 Course Name:- CO1 CO2 CO3 CO4 CO5	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System To understand the use of transfer function models for analysis physical systems and introduce the control system components. To provide adequate knowledge in the time response of systems and steady state error analysis. To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems. To introduce stability analysis and design of compensators To introduce state variable representation of physical systems and study the effect of state feedback. measurement Electrical and Electronics To understand philosophy of measurement.
CO1 CO2 CO3 CO4 Course Name:- CO2 CO3 CO4 CO5 Course Name:- CO5	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System To understand the use of transfer function models for analysis physical systems and introduce the control system components. To provide adequate knowledge in the time response of systems and steady state error analysis. To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems. To introduce stability analysis and design of compensators To introduce state variable representation of physical systems and study the effect of state feedback.
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO5 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System To understand the use of transfer function models for analysis physical systems and introduce the control system components. To provide adequate knowledge in the time response of systems and steady state error analysis. To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems. To introduce stability analysis and design of compensators To introduce state variable representation of physical systems and study the effect of state feedback. measurement Electrical and Electronics To understand philosophy of measurement. To understand different methods analog and digital measurement.
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 COUTSE Name:- CO1 CO2 CO3 CO4 CO5	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System • To understand the use of transfer function models for analysis physical systems and introduce the control system components. • To provide adequate knowledge in the time response of systems and steady state error analysis. • To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems. • To introduce stability analysis and design of compensators • To introduce state variable representation of physical systems and study the effect of state feedback. To understand philosophy of measurement. To understand different methods analog and digital measurement. To understand different methods analog and digital measurement. To study principle of construction and operation of different transducer and dismay methods.
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 COUTSE Name:- CO1 CO2 CO3 CO4 CO5	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System To understand the use of transfer function models for analysis physical systems and introduce the control system components. To provide adequate knowledge in the time response of systems and steady state error analysis. To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems. To introduce stability analysis and design of compensators To introduce state variable representation of physical systems and study the effect of state feedback. measurement Electrical and Electronics To understand philosophy of measurement. To understand different methods analog and digital measurement.
CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO4 CO5 COUTSE Name:- CO1 CO2 CO3 CO4 CO5	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To introduce the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System • To understand the use of transfer function models for analysis physical systems and introduce the control system components. • To provide adequate knowledge in the time response of systems and steady state error analysis. • To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems. • To introduce stability analysis and design of compensators • To introduce state variable representation of physical systems and study the effect of state feedback. To understand philosophy of measurement. To understand different methods analog and digital measurement. To understand different methods analog and digital measurement. To study principle of construction and operation of different transducer and dismay methods.
CO1 CO2 CO3 CO4 CO5 Course Name:- CO5 Course Name:- CO1 CO2 CO3 CO4 CO5 Course Name:- CO1 CO2 CO3 CO4 CO5	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolsan algebra and show the correlation between Boolsan expression. To introduce the methods for simplifying Boolsan expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System **To understand the use of transfer function models for analysis physical systems and introduce the control system components. **To provide adequate knowledge in the time response of systems and steady state error analysis. **To introduce stability analysis and design of compensators **To introduce stability analysis and design of compensators **To introduce stability analysis and design of compensators **To introduce state variable representation of physical systems and study the effect of state feedback. **measurement Electrical and Electronics To understand different methods analog and digital measurement. To understand different methods analog and digital measurement. To study principle of construction and operation of different transducer and dismay methods. Elective—II Analytical Sensor
CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO5 CO4 CO5 COUrse Name:- CO1 CO2 CO3 CO4 CO5 COURSE Name:- CO1 CO2 CO3	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce the methods for simplifying Boolean expressions. To introduce the methods for simplifying Boolean expressions. To cutline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System **To understand the use of transfer function models for analysis physical systems and introduce the control system components. **To provide adequate knowledge in the time response of systems and steady state error analysis. **To accord basic knowledge in the bine response of systems and steady state error analysis. **To introduce stability analysis and design of compensators **To introduce stability analysis and dietign of fompensators **To introduce stability malysis and dietign of fompensators **To understand philosophy of measurement. To understand philosophy of measurement. To understand different methods analog and digital measurement. To study principle of construction and operation of different transducer and dismay methods. Elective—II Analytical Sensor Ability to understand and analyze Instrumentation systems and their applications to various industries.
CO1 CO2 CO3 CO4 CO2 CO3 CO4 CO5 CO4 CO5 COUrse Name:- CO1 CO2 CO3 CO4 CO5 COURSE Name:- CO1 CO2 CO3	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce the methods for simplifying Boolean expressions. To introduce the methods for simplifying Boolean expressions. To cutline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System **To understand the use of transfer function models for analysis physical systems and introduce the control system components. **To provide adequate knowledge in the time response of systems and steady state error analysis. **To accord basic knowledge in the bine response of systems and steady state error analysis. **To introduce stability analysis and design of compensators **To introduce stability analysis and dietign of fompensators **To introduce stability malysis and dietign of fompensators **To understand philosophy of measurement. To understand philosophy of measurement. To understand different methods analog and digital measurement. To study principle of construction and operation of different transducer and dismay methods. Elective—II Analytical Sensor Ability to understand and analyze Instrumentation systems and their applications to various industries.
CO1 CO2 CO3 CO4 CO5 CO3 CO4 CO5 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO5 CO5 CO6	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System - To understand the use of transfer function models for analysis physical systems and introduce the control system components. - To provide adequate knowledge in the time response of systems and steady state error analysis. - To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems. - To introduce stability analysis and design of compensators - To introduce stability analysis and design of physical systems and study the effect of state feedback. - To introduce stability analysis and design of compensators - To understand philosophy of measurement. To understand philosophy of measurement. To understand different methods analog and digital measurement. To study principle of construction and operation of different transducer and dismay methods. Elective—II Analytical Sensor Professional Communication Elective-III
CO1 CO2 CO3 CO4 CO5 CO3 CO4 CO5 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO5 CO5 CO6	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System - To understand the use of transfer function models for analysis physical systems and introduce the control system components. - To provide adequate knowledge in the time response of systems and steady state error analysis. - To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems. - To introduce stability analysis and design of compensators - To introduce stability analysis and design of physical systems and study the effect of state feedback. - To introduce stability analysis and design of compensators - To understand philosophy of measurement. To understand philosophy of measurement. To understand different methods analog and digital measurement. To study principle of construction and operation of different transducer and dismay methods. Elective—II Analytical Sensor Professional Communication Elective-III
CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO4 CO5 CO1 CO2 CO3 CO1 CO2 CO3 CO4 CO1 CO2 CO3 CO4 CO5 CO01 CO2 CO3 CO01 CO01 CO02 CO01 CO01 CO01 CO01 CO01 CO01 CO01 CO01	To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement. To introduce basic portulates of Boolean algebra and show the correlation between Boolean expression. To outline the methods for simplifying Boolean expressions. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits. Feedback Control System 1 To understand the use of transfer function models for analysis physical systems and introduce the control system components. 1 To provide adequate knowledge in the time response of systems and steady state error analysis. 1 To accord basic knowledge in obtaining the open loop and closed-loop frequency responses of systems. 1 To introduce state variable representation of physical systems and study the effect of state feedback. To understand philosophy of measurement. To understand different methods analog and digital measurement. To understand different methods analog and digital measurement. To study principle of construction and operation of different transducer and dismay methods. Elective—II Analytical Sensor Ability to understand and analyze instrumentation systems and their applications to various industries. Professional Communication Elective-III develop good communication, presentation and report writing skill
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CO1	1. Student will able to analyze non linear system.
CO2	2.Student will able identify state space representation of continuous & discrete system.
CO3	3. Student will able to analyze stability of discrete system.
	4.Student will able to design discrete time control system.
C04	4-student will able to design discrete time control system.
Course Name:-	Chemical & Analytical Instrumentation
CO1	1. Student will able to discuss chemical analysis.
CO2	2.Student will able to describe flame photometry.
	3.Student will able to summarize NMR. & mass spectrometer.
CO4	4.Student will able to classify chromatography
6	Industrial Automation
CO1	1.Student will able to distinguish between DCS, PLC, PC & field bus.
CO2	2.Student will able to explain PLC Hardware in detail.
	3.Student will able to program PLC to solve industrial problems.
CO4	4.Student will able to describe commissioning and maintenance.
CO5	5.Student will identify SCADA and HMI
Course Name:-	Embedded Instrumentation
CO1	1.Students will able to describe embedded system.
	2.Students will able to explain ARM organization & programmer model.
	3.Students will able to identify ARM instruction set.
CO4	4.Student will able to describe real time operating system.
CO5	S. Students will able to demonstrate programming of ARM
Course Name:-	Mini Project
	1.Students will able to apply knowledge learnt, gain new skills.
	2.Student will able to design instrumentation systems.
CO3	3.Student will able to improve technical and communication skill.
CO4	4. Student will able to organise possible solutions to industrial problems.
B.E. Part-II Sem-	VIII
Course Name:-	Field Instrumentation
	1.Student will able to explain components of digital field bus networks.
CO2	2. Student will able to describe working of Foundation Fieldbus & HART protocols.
CO3	3. Student will able to outline profibus networks
CO4	4. Student will able to explain fiber optic networks.
CO5	5. Student will able to specify use of wireless networks.
	Advantage and the second
	Advanced Process Control
CO1	1.Students will able to know control strategies.
CO2	2.Student will able to design PID controller algorithms.
соз	3.Students will able to know digital control methods.
	3. Students will able to know digital control methods. 4. Student will able to explain HVAC & access control.
CO4	4.Student will able to explain HVAC & access control.
CO4 Course Name:-	4. Student will able to explain HVAC & access control. Project Engineering & Management
COURSE Name:-	4. Student will able to explain HVAC & access control. Project Engineering & Management Student will able to know detailed engineering.
CO4 Course Name:-	4. Student will able to explain HVAC & access control. Project Engineering & Management
CO4 Course Name:- CO1 CO2	4. Student will able to explain HVAC & access control. Project Engineering & Management Student will able to know detailed engineering.
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Course Name:-	Theory of Machines- I
CO1	Define basic terminology of kinematics of mechanisms
CO2	Classify planar mechanisms and calculate its degree of freedom
CO3	
	Perform kinematic analysis of a given mechanism using ICR and RV methods
CO4	Perform kinematic analysis of a given mechanism analytically using vector or complex algebra method
COS	Perform kinematic analysis of slider crank mechanism using Klein's construction and analytical approach
Course Name:-	Strength of Materials
CO1	State the basic definitions of fundamental terms such as axial load, eccentric load, stress, strain, E, µ, etc.
CO2	Recognize the stress state (tension, compression, bending, shear, etc.) and calculate the value of stress developed in the component in axial/eccentric static and impact load cases.
CO3	Distinguish between unlaxial and multiaxial stress situation and calculate principal stresses, max. shear stress, their planes and max. normal and shear stresses on a given plane.
CO4	Analyze given beam for calculations of SF and BM
CO5	Calculate slope and deflection at a point on cantilever /simply supported beam using double integration, Macaulay's , Area-moment and superposition methods
CO6	Differentiate between beam and column and calculate critical load for a column using Euler's and Rankine's formulae
Course Name:-	Numerical Methods in Mechanical Engineering
CO1	Describe the concept of error
CO2	Illustrate the concept of various Numerical Techniques
CO3	Evaluate the given Engineering problem using the suitable Numerical Technique
CO4	Develop the computer programming based on the Numerical Techniques
Course Name:-	Physics of Engineering Materials
CO1	Understand the different types of structures of solid, defects in solids and analysis of crystal structure by X-ray diffraction technique.
CO2	Understand the origin and types of magnetism, significance of hysteresis loo in different magnetic materials and their uses in modern technology
CO3	Understand the band structure of solids and conductivity, categorization of solids on the basis of band structure, significance of Fermi-Dirac probability functions
CO4	Understand the Dand structure or solids and conductivity, categorization or solids on the basis or dand structure, significance or Fermi-Dirac productivity nuctions Understand the principles of superconductivity, their uses in modern technology
CO5	Understand the position of Fermi level in intrinsic and extrinsic semiconductors, Semiconductor conductivity
CO6	Understand the electric field in dielectric CO7 Understand basics of Nano materials, synthesis methods and characterization techniques
Course Name:-	Advanced Engineering Chemistry
CO1	Classify and explain various types of Corrosion and should apply methods to minimize the rate of corrosion.
CO2	Understand and apply the concepts of Photochemical and Thermal reactions
CO3	Understand the basic concepts of Polymers, Polymerization and Moulding techniques; Determine molecular weight of High-Polymers.
CO4	Understand and apply the basic techniques in Chemistry and capable to explain the concepts of Solvent Extraction.
CO5	Understand and apply various types of Spectroscopic, Chromatographic techniques and also able to explain the concepts of Thermo-Gravimetric Analysis (TGA).
Course Name:-	Interpersonal Communication Skill & Self Development
Course Name:-	Interpersonal Communication Skill & Self Development
Course Name:-	Interpersonal Communication Skill & Self Development Acquire Interpersonal communication skills
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CO1 CO2 CO3	Acquire interpersonal communication skills Develop the ability to work independently. Develop the qualities like self-discipline, self-criticism and self-management. Have the qualities of time management and discipline.
CO1 CO2 CO3 CO4	Acquire interpersonal communication skills Develop the ability to work independently. Develop the qualities like self-discipline, self-criticism and self-management. Have the qualities of time management and discipline. Present themselves as an inspiration for others
CO1 CO2 CO3 CO4	Acquire interpersonal communication skills Develop the ability to work independently. Develop the qualities like self-discipline, self-criticism and self-management. Have the qualities of time management and discipline.
CO1 CO2 CO3 CO4 CO5	Acquire interpersonal communication skills Develop the ability to work independently. Develop the qualities like self-discipline, self-criticism and self-management. Have the qualities of time management and discipline. Present themselves as an inspiration for others Develop themselves as good team leaders
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CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO1 CO2 CO3 CO4 CO5	Acquire interpersonal communication skills Develop the skills to work independently. Develop the qualities like self-disciplines, self-criticism and self-management. Develop the qualities like self-disciplines, self-criticism and self-management. Develop the management and dependent government. Develop the management and dependent government. Develop the self-disciplines, self-criticism and self-management. Develop the self-disciplines and integration for others Develop the self-disciplines and integration for others Develop the self-disciplines and integrated integrated and operations research approaches. Formulate and solve engineering and management and operations research approaches. Formulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and management stuations as 1979. Tormulate and solve engineering and engineering engineering engineering of the solve engineering engineering engineering engineering engineering engineering

co2	Demonstrate importance and functions of various outloors on the engine
	Demonstrate importance and functions of various systems on the engine. Demonstrate need and methods of engine testing.
	Know the impact of vehicular pollution and ways to reduce or control the pollution.
Course Name:-	Computer Integrated Manufacturing
CO1	Understand modern techniques for integrating CAD/CAM in CIM
CO2	Obtain an overview of computer technology in Production Planning and Control.
соз	Apply classification and coding in Group Technology.
CO4	Elaborate Computer Aided Production Planning and Control.
Course Name:-	Seminar
CO1	Have and develop presentation skills.
	Impart knowledge in different aspects of knowledge domains.
	Build confidence and improve communication skills.
CO4	Collect ideas through literature survey about new innovations, analyze and present them.
CO5	Sharpen their personality and intelligence.
	Workshop Practice VI
CO2	Select the suitable machining operations and prepare process sheet to manufacture a component and implement the same.
COZ	Control key dimensions on a component using principles of metrology and assembly
Course Name:-	Mini-Project-II
CO1	Work in a group on specific assignment.
	Think creatively to come out with feasible solution for engineering real life problem.
	Enculcate habit of lifelong learning
B.E. Part-II Sem-	
Course Name:-	Mechatronics
CO1	Understand the importance of integration of Mechanical, Electronics and Control in the design of Mechatronics system
CO2	Define sensor, transducer and understand the applications of different sensors and transducers
соз	Explain the signal conditioning and data representation techniques
CO4	Write a PLC program using Ladder logic for a given application
CO5	Understand applications of microprocessor, micro controller
CO6	Understand General and Industrial Application of PLC
	Energy and Power Engineering
CO1	Demonstrate need of different energy sources and their importance
	Analyze the utilization of solar, wind energy etc.
CO3	Comprehend various equipments/systems utilized in power plants Illustrate power plant economics.
CO4	inuscrate power plant economics.
Course Name:-	Noise and Vibration
CO1	Formulate mathematical model to represent mechanical system
CO2	Evaluate vibration parameters of mechanical system
соз	Analyze vibratory response of mechanical system using classical methods and software tools.
CO4	Measure vibration parameters using modern equipment
CO5	Understand the importance of noise measurement and its relevance in human life
Course Name:-	Elective III Industrial Engineering
CO1	Use the various tools and techniques of IE
	Analyze and design new method of performing job
	Measure and estimate standard time for job
	Understand different types of plant layouts
CO5	Interpret job evaluation and merit rating
	Flashia IV Calanaria Dazarrez Diazzina
	Elective IV Enterprise Resources Planning Explain the Basic structure of ERP systems
	Explain the Basic structure of ERP systems Understand the IT governance with ERP software
	Utilize different ERP modules
	Conduct gap analysis and Select suitable ERP packages.
	Implement ERP package for particular industry
Course Name:-	Project Phase-II
CO1	Improve the professional competency and research aptitude in relevant area
CO2	Develop the work practice to apply theoretical and practical tools/techniques to solve real life problems related to industry and current research
	M.Tech Part-I Sem-II
	Thermal Engineering
Course Name:-	Modeling and Analysis in Thermal Engineering
	Attempt modeling real life systems of interest in order to predict its dynamic behavior.
	Use simulation tools to determine dynamic response of system following external inputs.
CO3	Understand capabilities and limitations of various numerical and mathematical models.
CO4	Optimization of thermal systems, formulation, optimization methods.
COS	Deep understanding on the governing equations for convection heat transfer; knowing the dimensionless parameters
Course No	Mini-Project (Semester II)
Course Name:-	Time 1 regions (sectionals of)
CO1	Identify methods and materials to carry out experiments/develop code.
CO1	Identify methods and materials to carry out experiments/develop code. Reorganize the procedures with a concern for society, environment and ethics.
CO2	
CO2	Reorganize the procedures with a concern for society, environment and ethics.

CO5	Explore the possibility of publishing papers in peer reviewed journals/conference proceedings.
Course Name:-	Fluid Dynamics
CO1	Understand and define basic fluid dynamic concept like continuum, surface forces, stress tensor and vector fields, Eulerian and langrangian flow.
	Define the motions of fluid elements and derive continuity equation, stream function and velocity potential.
	Derive and apply Navier-stokes equation to various types of flow systems.
CO4	Apply Boundary layer theory concept, and able to derive solutions by various numerical methods.
CO5	Describe and analyze the different flow, velocity correlation and universal velocity distribution.
CO6	Examine and numerical analysis of PDE and providing techniques for interpreting and analyzing the behavior of numerical schemes.
Course Name:-	Advanced Refrigeration
CO1	
	Formulate and solve vapor compression refrigeration and multi-stage vapor compression systems. COZ CO3CO4 CO5
	Study and Identify various types of refrigerants and their properties, such as zeotropic, azeotropic etc.,
соз	Illustrate Nomenclature, Refrigerants, alternative refrigerants, CFC/HCFC phase-out regulations, action with lubricating oil, retrofitting, refrigerant blends, effects on refrigeration components.
CO4	Design and analyze vapor absorption system
CO5	select refrigerant control techniques and do piping designing for refrigeration plant
Course Name:-	Steam and Gas Turbines
***	Burney and a figure Section of the Control of the C
	Illustrate properties of Steam, Draw P-V, T-s, H-s(Moiller) diagrams for steam, Describe Theoretical steam turbine cycle.
CO2	Demonstrate and analyze vortex flow, energy lines and reheat factors of steam turbines. Solve problems of finding performance steam turbine power plant.
	Demonstrate simple Brayton cycle for gas turbine analyze its performance on computer simulation, suggest suitable modification and then analyze it.
CO4	Study and apply various Performance Improvement Techniques in steam and gas Turbines
CO5	Design and suggest and analyze cooling accessories and protective material for steam turbine
Course Name:-	Research Methodology
CO1	Hadarstand and Discretion importance of corposets
	Understand and Describe importance of research.
	Classify and select appropriate resources for Research.
	Analyze the contents of literature and identify further scope.
CO4	Formulate a Research Problem.
CO5	Develop effective written and oral Presentation skills
	M.Tech Part-II Sem-II
Course Name:-	Project Stage-II
Course Name	1 region studies in
	Solve identified technical problem using acquired knowledge and skill.
CO2	Use latest equipment, instruments, software tools, infrastructure and learning resources available to solve the identified project problem. Procure resources, if required.
CO3	
-03	Interpret theoretical/experimental findings using available tools
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CO4 CO5	Compare the results obtained with results of similar studies Draw conclusions based on the results. Design Engineering
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CO4 CO5 Course Name:- CO1 CO2	Compare the results obtained with results of similar studies Draw conclusions based on the results. Design Engineering M.Tech Part-II Sem-II Project Stage-II Solve identified technical problem using acquired knowledge and skill. Use latest equipment, instruments, software tools, infrastructure and learning resources available to solve the identified project problem. Procure resources, if required.
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CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO5 CO6	Compare the results obtained with results of similar studies Draw conclusions based on the results. Design Engineering M. Tech Part-I Sem-II Project Stage-II Solve Identified technical problem using acquired knowledge and skill. Use latest equipment, instruments, software tools, infrastructure and learning resources available to solve the identified project problem. Procure resources, if required. Interpret theoretical/experimental findings using available tools Compare the results obtained with results of similar studies Oraw conclusions based on the results. FIRST YEAR ENGINEERING (GROUP A) F.Y. & Tech Part-I Sem-II Engineering, Mathematics-II Understand Complex number and hyperbolic function and their relations. Solve cridinary differential equations of first order and first degree. Solve Internal differential equation with constant coefficients. Develop Fourier series expansion of different periodic function. Compute and analyze gradient, divergence and curt of vector fields.
CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO6 CO6 CO6 CO7 CO7 CO8 CO8 CO8 CO8 CO9	Compare the results obtained with results of similar studies Draw conclusions based on the results. Design Engineering M.Tech Part-II Sem-II Project Stage-II Solve Identified Exchnical problem using acquired knowledge and skill. Use latest equipment, instruments, software tools, infrastructure and learning resources available to solve the identified project problem. Procure resources, if required. Interpret theoretical/experimental findings using available tools Compare the results obtained with results of similar studies Oraw conclusions based on the results. FIRST Y/AR ENGINEERING (GROUP A) F.Y. B Tech Part-I Sem-II Engineering Mathematic-II Understand Complex number and hyperbolic function and their relations. Solve ordinary differential equations of first order and first degree. Solve incer afferential equations of offeren periodic function. Compute and analyze gradient, divergence and cour of vector fields. Solve vector integration by using different theorems. Engineering Chemistry
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CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO1 CO2 CO3 CO4 CO5 CO6 CO6 CO6 CO6 CO6 CO7	Compare the results obtained with results of similar studies Draw conclusions based on the results. Solve identified technical problem using acquired inowindege and skill. Use listest equipment, instruments, software book, infrastructure and learning resources available to solve the identified project problem Procure resources, if required. Interpret theoretical/generiment floring using available to solve the identified project problem Procure resources, if required. Interpret theoretical/generiment floring using available to solve the identified project problem Procure resources, if required. Interpret theoretical/generiment floring using available to solve the identified project problem Procure resources, if required. Interpret theoretical/generiment floring using available to solve the identified project problem Procure resources, if required. Interpret theoretical/generiments of similar studies Draw conclusions based on the results. Interpret theoretical/generiment floring using available to solve the identified project problem Procure resources, if required. Interpret theoretical/generiment floring using available to solve the identified project problem Procure resources, if required. Interpret theoretical/generiment floring using available to solve the identified project problem Procure resources, if required. Interpret the results obtained with results of similar studies Draw conclusions based on the results. Understand Complex number and hyperbolic function and their relations. Solve conclusions based on the principle of oscillation, Ultrasonics, Optics, Luser, Fibre optics, Nuclear physics, and Quantum mechanics.
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CO1	Student should be aware of c programming environment.
CO2	To demonstrate the concept of problem solving skills.
соз	Student should demonstrate, analyze and debug the c program.
CO4	Understand and analyze the c programs for various problem statements.
Course Name:-	Basic Electrical and Electronics Engineering
CO1	Impart a basic knowledge of electrical quantities such as current, voltage, power, energy and frequency to understand the impact of technology in a global and societal context.
CO2	Provide knowledge for the analysis of basic DC and AC circuits used in electrical and electronic devices.
соз	Identify the unique vocabulary associated with electronics and explain the basic concepts of Semiconductor diodes such as p-n junction diode, Zener diode. To apply the basics of diode to describe the working of rectifier circuits such as Full and half wave rectifiers.
CO4	Sketch and explain the basic block of communication system. List and explain the different number system. Solve examples on converting one form of number system to another form. State Boolean laws and theorems and logic gates.
	FIRST YEAR ENGINEERING (GROUP B)
	F.Y. B Tech Part-I Sem-II
Course Name:-	Engineering Mathematics-II
CO1	Understand Complex number and hyperbolic function and their relations.
CO2	Solve ordinary differential equations of first order and first degree.
соз	Solve linear differential equation with constant coefficients.
CO4	Develop Fourier series expansion of different periodic function.
CO5	Compute and analyze gradient, divergence and curl of vector fields.
CO6	Solve vector integration by using different theorems.
Course Name:-	Engineering Physics
CO1	Define and explain basic laws, principles and ideas of physics related to engineering curriculum.
CO2	Understand Engineering problems based on the principle of Oscillation, Ultrasonics, Optics, Laser, Fibre optics, Nuclear physics, and Quantum mechanics.
соз	Understand Fundamental of Electrodynamics, Semiconductor, Dielectric, Magnetic and Superconducting materials which forms the base of many modern devices and technologies.
Course Name:-	Engineering Graphics
CO1	
CO2	Students will understand BIS conventions of drawing and geometrical constructions; also understand the concept of first angle & third angle method of projection. The students will understand & draw projection of lines, planes & solids. Students will draw orthographic projection, sectional views and isometric projection of diff. engineering components.
CO3	The students will understand & draw projection of lines, planes & solios. Students will draw orthographic projection, sectional views and isometric projection of diff. engineering components. Students will draw sections of solids of different surfaces.
CO4	Students will able to understand about the basic Industrial requirement of drawing.
CO4	Students will able to understand about the basic industrial requirement of drawing:
Course Name:-	Communication Skills
course Name:-	
CO1	Students understand the concept of communication and its process & identify the difference between verbal and non-verbal communication.
CO2	Students know the correct usage of English grammar & pronunciation of sounds with proper stress and intonation.
CO3	Students know LSRW skills and apply them to improve communication skills.
Course Name:-	Energy and Environment Engineering
CO1	To understand basic laws, principles and Environment aspect of conventional and non non-conventional sources. And understand advantages and disadvantages to protect the environment.
CO2	To acquire the knowledge of Methods and Techniques of energy conservation in ventilation, air conditioning, Pumps, fans, blowers, Light and Lightening techniques
соз	To Understand Sources, effects, and control of Air Pollution, water Pollution, soil Pollution and Radioactive materials
Course Name:-	Basic Civil and Mechanical Engineering
CO1	Students are able to apply knowledge of Civil Engineer in its various branches according to building material properties.
CO2	Students are understand Principle of planning, building bye-laws and component of building.
соз	Students are understand application of surveying in actual practice to prepare plan or map.