BVRIT HYDERABAD
College of Engineering for Women
Rajiv Gandhi Nagar, Bachupally, Hyderabad -90
Department of Electrical and Electronics Engineering

Course Outcomes for R18 Regulation I-Semester			
II Year I Sem			
Course Code	**Course Name**	**CO. No.**	**Course Outcomes**
C211	ENGINEERING MECHANICS (EE301ES)	**C211.1**	Solve the resultant of a system of forces.
		C211.2	Distinguish the equilibrium of concurrent and non-concurrent system of forces.
		C211.3	Analyze the effect of friction on plane of motion.
		C211.4	Identify the centroid and center of gravity of the objects.
		C211.5	Analyze the area moment of inertia and mass moment of inertia.
		C211.6	Interpret the principles of kinetics.
C212	ELECTRICAL CIRCUIT ANALYSIS (EE302PC)	**C212.1**	Deduce the responses of complex electric networks using circuit theorems.
		C212.2	Analyze the transient response of electric circuits using classical and Laplace transform methods.
		C212.3	Analyze single phase and 3-phase AC electric circuits.
		C212.4	Analyze a coupled circuit using the concepts of Magnetic circuits.
		C212.5	Calculate two-port network parameters and their inter-relationships for electrical networks.
		C212.6	Compute parameters of electrical resonance for composite electric circuits
C213	ANALOG ELECTRONICS (EE303PC)	**C213.1**	Analyze the characteristics of PN junction diode and its Applications
		C213.2	Evaluate the characteristics of MOSFET Amplifiers.
		C213.3	Build different types of multistage amplifiers based on specifications
		C213.4	Design various types of Power Amplifiers.
		C213.5	Categorize different feedback amplifier circuits
		C213.6	Design various analog circuits using IC 741 Op-Amp
C214	ELECTRICAL MACHINES-I (EE304PC)	**C214.1**	Assess the characteristics for different types of DC machines.
		C214.2	Compute losses and efficiency of DC machines.
		C214.3	Evaluate the types of starters and speed control techniques of DC motors.
		C214.4	Illustrate the equivalent circuit parameters for single phase transformer.
		C214.5	Evaluate the performance of Transformers under different loading conditions.
		C214.6	Distinguish poly phase transformers based on connections.
C215	ELECTROMAGNETIC FIELDS (EE305PC)	**C215.1**	Illustrate the concepts of electromagnetic field theory using fundamental laws

		C215.2	Examine the influence of electric fields on conductors, insulators and dielectrics.
		C215.3	Compute the Magneto static parameters using Biot Savart's and Ampere's circuital laws for different conductor configuration.
		C215.4	Calculate Force, Torque and inductance in magnetic fields for electrical engineering applications.
		C215.5	Interpret the concepts of Maxwell's equations from electromagnetic fields.
		C215.6	Understand the propagation of EM waves in different medium
C216	ELECTRICAL MACHINES LAB -I (EE306PC)	C216.1	Examine the performance characteristics of DC generators
		C216.2	Compute the losses and efficiency of DC machines.
		C216.3	Outline the performance curves of DC motors.
		C216.4	Estimate the moment of inertia of a DC motor.
C217	ANALOG ELECTRONICS LAB (EE307PC)	C217.1	Analyze the characteristics of different practical diodes and also different Transistor configurations
		C217.2	Design analog circuits for practical applications using Op Amp IC-741
		C217.3	Analyze the gain and bandwidth of different practical amplifier circuits.
		C217.4	Measure the frequency of different oscillator circuits.
C218	ELECTRICAL CIRCUITS LAB (EE308PC)	C218.1	Examine the response of electric networks using circuit theorems.
		C218.2	Assess the inductance and power of a given electrical network.
		C218.3	Calculate two port network parameters for a given electrical network.
		C218.4	Analyze harmonics in a given waveform.
C219	GENDER SENSITIZATION LAB (MC309)	C219.1	Develop a better understanding of important issues related to gender in contemporary india.
		C219.2	Analyze basic dimensions of the biological, sociological, psychological and legal aspects of gender
		C219.3	Develop a sense of appreciation of women in all walks of life and will be equipped to work and live together as equals.
		C219.4	Examine the new laws for women protection & relief, and empower students to understand and respond to gender violence.
Course Outcomes for R16 Regulation I-Semester			
III Year I Sem			
C311	ELECTRICAL MEASUREMENTS & INSTRUMENTATION (EE501PC)	C311.1	Categorize measuring instruments based on their operating principle
		C311.2	Categorize measuring instruments based on their construction
		C311.3	Assess the errors in measuring instruments with relevant solution
		C311.4	Measure Resistance, Capacitance, Inductance, Power and energy
		C311.5	Analyze the different types of transducers
		C311.6	Measure nonelectrical quantities with the concept of Transducers

C312	POWER SYSTEMS-II (EE502PC)	C312.1	Compute transmission line parameters for different configurations.
		C312.2	Examine performance of transmission lines using equivalent circuit models.
		C312.3	Analyze the effects of transients using wave theory.
		C312.4	Evaluate the insulators of over head lines based on performance.
		C312.5	Compute sag and tension of transmission lines at different conditions.
		C312.6	Differentiate parameters of overhead lines and underground cables for power transmission.
C313	MICRO PROCESSORS AND MICRO CONTROLLERS (EI503PC)	C313.1	Differentiate architectural features and modes of operation of 8086 microprocessor and 8051 microcontroller.
		C313.2	Summarize the addressing modes, instruction set and assembler directives of 8086 Microprocessor and 8051 Micro controller.
		C313.3	Write assembly language programs for 8086 Microprocessor and 8051 Microcontroller.
		C313.4	Interface various peripheral devices and memory with 8086 microprocessor and 8051 microcontroller.
		C313.5	Analyze the architectural features and instruction set of ARM processor
		C313.6	Understand the architectures of CORTEX and OMAP processors
C314	FUNDAMENTALS OF MANAGEMENT (SM504MS)	C314.1	Examine the concept of Management and its approaches.
		C314.2	Classify the planning and development of business strategies.
		C314.3	Justify the Principles of organization for effective Human Resource Management.
		C314.4	Analyze leadership qualities and make familiarize with motivational
		C314.5	Identify the controlling techniques for effective control in an organization.
		C314.6	Examine Control Systems in an organization.
C315	NON CONVENTIONAL POWER GENERATION (EE511OE)	C315.1	Analyze solar, thermal and photovoltaic systems for energy conversion system
		C315.2	Elucidate the principles and types of Solar Energy collection, storage and applications
		C315.3	Assess the concepts to harness Wind Energy
		C315.4	Expound the concepts of bio-mass and geothermal energy conversion
		C315.5	Outline the conversion techniques available for Ocean thermal energy conversion
		C315.6	Explicate the essentials for Direct Energy Conversion and limitations
C316	ELECTRICAL ENGINEERING MATERIALS (EE512OE)	C316.1	Assess different dielectric materials and their properties.
		C316.2	Evaluate different magnetic materials and their behavior
		C316.3	Examine different semiconductor materials and their behavior
		C316.4	Evaluate materials for electrical appliances
		C316.5	Evaluate the different materials used in VLSI design

		C316.6	Asses the social purpose materials used for testing of transformer
C317	NANO TECHNOLOGY (EE513OE)	**C317.1**	Explain the history of nanotechnology and understand the fundamental principles of nanotechnology.
		C317.2	Describe the basic science behind the properties of materials at the nanometer scale, and the principles behind advanced experimental and computational techniques for studying nanomaterials.
		C317.3	Demonstrate a comprehensive understanding of state-of-the-art nano-fabrication methods
		C317.4	Practice and explain state-of-the-art characterization methods for nanomaterials, understanding and critiquing nanomaterial safety and handling methods required during characterization
		C317.5	Identify current nanotechnology solutions (applications) in design, engineering and manufacturing in perspective of material Science.
		C317.6	Elucidate emerging needs in carrying out of nanotechnology experiments using both classical and novel science techniques in societal and environmental context to solve real world problems.
C318	ELECTRICAL MEASUREMENTS & INSTRUMENTATION LAB (EE505PC)	**C318.1**	Determine unknown electrical parameters using bridges
		C318.2	Measure active and reactive power using various methods
		C318.3	Calibrate various measuring instruments.
		C318.4	Examine electrical parameters and characteristics of electrical instruments.
C319	BASIC ELECTRICAL SIMULATION LAB (EE506PC)	**C319.1**	Analyze the behavior of electrical circuits and computer network parameters using simulation.
		C319.2	Analyze the performance of bridge rectifiers and filters using MATLAB/Simulink.
		C319.3	Examine the properties of various signals and systems using simulation
		C319.4	Verify a given system's behavior through transfer function using MATLAB/Simulink
C31A	MICRO PROCESSORS AND MICRO CONTROLLERS LAB (EI507PC)	**C31A.1**	Debug assembly language programs using 8086 assembler.
		C31A.2	Analyze the interfacing between external peripherals and 8086 microprocessor using development kit.
		C31A.3	Debug 8051 assembly language programs using Keil IDE.
		C31A.4	Analyze the interfacing between external peripherals and 8051 microcontroller using development kit.
C31B	PROFESSIONAL ETHICS (MC500HS)	**C31B.1**	Explain the concept of Ethics and its significance in Personal and Professional life.
		C31B.2	Analyze the moral issues in Profession by understand basic theories of Ethics.
		C31B.3	Make use of moral values and enhance professional conduct in Engineering profession
		C31B.4	Make use of Rights & Responsibilities of Engineers at Workplace.
		C31B.5	Analyse the Global issues in Professional Ethics.
		C31B.6	Examine ethical practices in Manufacturing , Marketing, Media and Intellectual Property Rights

			IV Year I Sem
C411	POWER SEMICONDUCTOR DRIVES (EE701PC)	**C411.1**	Analyze the performance of DC drive fed by controlled rectifiers.
		C411.2	Assess different braking modes of DC drives for specific control requirements
		C411.3	Explain closed loop control of converter fed DC drives
		C411.4	Assess the static and dynamic performance characteristics of AC drives
		C411.5	Examine performance of AC drives fed by variable voltage and frequency supplies
		C411.6	Illustrate various power electronic converters to control the speed of synchronous motor
C412	POWER SYSTEM OPERATION AND CONTROL (EE702PC)	**C412.1**	Model the blocks for speed governor, turbine, Synchronous generator and Excitation system using mathematical Approach
		C412.2	Analyze the steady state performance of Frequency and Voltage for single and two area systems
		C412.3	Determine the reactive power to be compensated in transmission system using various Voltage Control methods
		C412.4	Determine the economical scheduling of thermal generating units by considering constraints
		C412.5	Solve for scheduling different Power Generating stations using Unit Commitment Methods.
		C412.6	Understand the concepts of Power System Automation
C413	DIGITAL SIGNAL PROCESSING (EE721PE)	**C413.1**	Determine the behavior of LTI systems by solving difference equations.
		C413.2	Construct various digital filter structures.
		C413.3	Analyze digital signals in frequency domain using DFS and DFT
		C413.4	Apply different FFT algorithms for DFT computations.
		C413.5	Design IIR and FIR filters for given specifications.
		C413.6	Interpret the concepts of finite word length and multi-rate sampling in digital systems.
C414	HVDC TRANSMISSION (EE722PE)	**C414.1**	Compare HVDC and AC Transmission systems in all aspects.
		C414.2	Analyze HVDC system with Gratez circuit.
		C414.3	Evaluate Converter control characteristics for different control schemes.
		C414.4	Discuss Reactive power control and Power Flow analysis in HVDC system.
		C414.5	Elucidate converter faults and their protection schemes.
		C414.6	Analyze AC and DC filters for different types of harmonics.
C415	SWITCH MODE POWER SUPPLIES (ET721PE)	**C415.1**	Analyze isolated and non-isolated topologies for switch mode power conversion.
		C415.2	Analyze the design concepts of fly back converter
		C415.3	Design power converters for high frequency applications using high voltage transistor
		C415.4	Differentiate SMPS and linear power supplies
		C415.5	Elucidate various stages of rectification
		C415.6	Explain variable SMPS techniques and resonant power supplies

C416	RELIABILITY ENGINEERING (EE724PE)	C416.1	Analyze reliability of various systems
		C416.2	Model various systems applying reliability networks
		C416.3	Evaluate the reliability of simple and complex systems
		C416.4	Estimate the limiting state probabilities of repairable systems
		C416.5	Apply various mathematical models for evaluating reliability of irreparable systems
		C416.6	Interpret frequency and duration techniques for evaluation of systems
C417	DIGITAL CONTROL SYSTEMS (EE722PE)	C417.1	Analyze Z-transform & map the Z-plane to S-plane
		C417.2	Analyze the stability of digital control systems through time & frequency domain methods and Lyapunove methods
		C417.3	Design the discrete time controllers using time domain methods
		C417.4	Analyze the state space representation of digital control system
		C417.5	Design the state feedback controllers through various methods
		C417.6	Design the full order and reduced order observers
C418	POWER QUALITY (EE732PE)	C418.1	Elucidate the power quality issues and the related terms
		C418.2	Analyze the causes and effects of interruptions in power systems
		C418.3	Analyze the characteristics of voltage sag for single phase and three phase systems
		C418.4	Evaluate power quality issues in industrial drives
		C418.5	Suggest various converter topologies to mitigate power quality issues
		C418.6	Understand the EMC standards in mitigation of power quality issues.
C419	MODERN POWER ELECTRONICS (EE733PE)	C419.1	Analyze the characteristics and working of various power semi conductor devices
		C419.2	Apply different PWM techniques for various Multi Level inverters
		C419.3	Analyze various topologies of Multi level Inverters
		C419.4	Explain the working of various DC - DC switch mode converters
		C419.5	Evaluate design parameters of Switch mode power supplies
		C419.6	Illustrate the concepts of resonant converters, power conditioners and UPS.
C41A	OPTIMIZATION TECHNIQUES (EE734PE)	C41A.1	Optimize given engineering problem by using suitable techniques
		C41A.2	Formulate and solve linear programming problem
		C41A.3	Obtain optimal solutions of transportation Problem
		C41A.4	Optimize Un Constrained non - linear programming problems
		C41A.5	Optimize Constrained non - linear programming problems
		C41A.6	Solve the dynamic Programming problems
C41B	PROGRAMMABLE LOGIC CONTROLLERS (EE741PE)	C41B.1	Identify the basic components and know the functionality of PLC
		C41B.2	Understand the importance and operations of a PLC
		C41B.3	Analyze different types PLC functions using registers
		C41B.4	Draw ladder diagrams from process control descriptions

		C41B.5	Understand Data handling functions for robotic applications
		C41B.6	Apply PLC timers and counters for the control of industrial processes
C41C	EHV AC TRANSMISSION SYSTEM (EE742PE)	C41C.1	Know the necessity, merits, demerits and mechanical aspects to be considered for EHVAC transmission
		C41C.2	Compute the Inductance and capacitance of two conductor and multi conductor lines
		C41C.3	Analyze the effect of corona, electrostatic field of EHVAC lines
		C41C.4	Analyze the surface gradient on two conductors and bundle with more than 3 sub conductors
		C41C.5	Design Compensation Schemes for Voltage Control
		C41C.6	Compute various parameters of EHV line for modeling (Simulation)
C41D	FLEXIBLE A.C. TRANSMISSION SYSTEMS (EE743PE)	C41D.1	Understand the importance of controllable parameters and benefits of FACTS controllers.
		C41D.2	Choose proper controller for the specific application based on system requirements
		C41D.3	Know the significance of shunt, series compensation and role of FACTS devices on system control.
		C41D.4	Know the significance of series compensation and role of FACTS devices on system control.
		C41D.5	Analyze the functional operation and control of GCSC, TSSC and TCSC.
		C41D.6	Understand the difference between SVC and STATCOM
C41E	SPECIAL MACHINES (EE744PE)	C41E.1	Classify and understand the basic principles of special D.C. machines
		C41E.2	Understand the working principle and control mechanisms for various types of stepper motors
		C41E.3	Compute the design aspects of variable reluctance and switched reluctance stepper motors
		C41E.4	Understand the basic principles and operation of permanent magnet D.C. motor
		C41E.5	Analyze the behavior of brushless D.C. motor at transient & steady state conditions
		C41E.6	Analyze the principle of operation of linear induction motor for electric traction
C41F	ELECTRICAL SYSTEMS SIMULATION LAB (EE703PC)	C41F.1	Simulate & analyze various electrical & electronic systems
		C41F.2	Analyze the various faults and performance of power system
		C41F.3	Model, Simulate & Analyze the performance of DC Machines & Induction Motors
		C41F.4	Analyze the performance of feedback & load frequency control of the power system
C41G	ELECTRICAL WORKSHOP (EE704PC)	C41G.1	Fabricate basic electrical circuit elements/networks
		C41G.2	Excel in hardware to do soldering & winding works
		C41G.3	Trouble shoot the electrical circuits
		C41G.4	Identify the device to be suited for protection of appliances
C41H		C41H.1	Acquire practical knowledge within the chosen area of technology for project development

	INDUSTRY ORIENTED MINI PROJECT (EE705PC)	C41H.2	identify, analyze, formulate and handle programming projects with a comprehensive and systematic approach
		C41H.3	contribute as an individual or in a team in development of technical projects
		C41H.4	Develop effective communication skills for presentation of project related activities
		C41H.5	understand need of project management and project management life cycle.
C41I	SEMINAR (EE706PC)	C41I.1	Identify emerging topic specific to the programme.
		C41I.2	Extract the information relevant to the chosen topic.
		C41I.3	Deliver the knowledge using multimedia.
		C41I.4	Answer the queries with appropriate explanation and elaboration
		C41I.5	Compile an effective technical report, providing conclusions and proposing an appropriate future scope.

Course Outcomes for R18 Regulation II-Semester			
II Year II Sem			
C221	LAPLACE TRANSFORMS, NUMERICAL METHODS & COMPLEX VARIABLES (MA401BS)	C221.1	Apply Laplace Transforms to solve ordinary differential equations
		C221.2	Estimate unknown values for a given data using Interpolation and method of least squares.
		C221.3	Apply numerical methods to solve algebraic and transcendental equations.
		C221.4	Apply numerical methods to evaluate definite integrals and solve initial value problems.
		C221.5	Analyze the complex functions with reference to their analyticity
		C221.6	Apply the knowledge of complex functions to evaluate various integrals.
C222	ELECTRICAL MACHINES-II (EE402PC)	C222.1	Illustrate the construction and working principle of Induction & Synchronous Machines
		C222.2	Assess the performance and speed control of a poly phase induction motor.
		C222.3	Illustrate different starting methods of Induction & Synchronous motors.
		C222.4	Evaluate the voltage regulation of Alternators using different methods
		C222.5	Evaluate the performance of synchronous generators for parallel operation and load sharing.
		C222.6	Assess the single phase motors for different applications
C223	DIGITAL ELECTRONICS (EE403PC)	C223.1	Apply the concepts of number systems, codes and Boolean algebra to simplify logic expressions
		C223.2	Understand working of logic families and logic gates.
		C223.3	Design combinational logic circuits and apply minimization techniques for optimizing combinational logic.
		C223.4	Design a sequential logic circuit and analyze its timing properties.

		C223.5	Differentiate between various data converters.
		C223.6	Understand memory organization and Implement the given logical problem using PLDs
C224	CONTROL SYSTEMS (EE404PC)	C224.1	Evaluate the types of control systems for real time applications.
		C224.2	Compute transfer function of a system by different techniques.
		C224.3	Evaluate the time response of systems for standard input signals.
		C224.4	Probe the stability of a system using time and frequency domain approach
		C224.5	Examine the performance of systems with compensators and controllers
		C224.6	Construct state models for continuous time systems and Comment on controllability and observability of the system
C225	POWER SYSTEMS-I (EE405PC)	C225.1	Categorize the sources of power generation with merits and demerits.
		C225.2	Outline the economic aspects for electrical power generation and loads.
		C225.3	Evaluate the insulators of over head lines based on performance.
		C225.4	Compute transmission line parameters for different configurations.
		C225.5	Compute cost of electric power generation using various tariff structures
		C225.6	Compute voltage drop in distribution systems based on various requirements & design features.
C226	DIGITAL ELECTRONICS LAB (EE306PC)	C226.1	Implement Boolean Expressions using universal logic gates.
		C226.2	Design and verify Combinational logic circuits using various logic gates.
		C226.3	Design and verify Sequential logic circuits using flip flops.
		C226.4	Realization of logic gates using different logic families.
C227	ELECTRICAL MACHINES LAB-II (EE407PC)	C227.1	Analyze the performance of a single phase transformer.
		C227.2	Analyze the scott connection and Load sharing of transformers.
		C227.3	Examine the performance of Induction motor at different loading conditions.
		C227.4	Appraise the performance of synchronous machines by using different methods.
C228	CONTROL SYSTEMS LAB (EE408PC)	C228.1	Design the state space model of a linear system using simulation.
		C228.2	Analyze the response of systems in frequency & time domain.
		C228.3	Calculate the transfer function and observe the effect of feedback on the systems
		C228.4	Examine the effect of controllers & Compensators on the system.
C229	CONSTITUTION OF INDIA (MC409)	C229.1	Examine salient features of Indian Constitution and live accordingly in society
		C229.2	Interpret the meaning of Fundamental Rights and Directive Principles of State Policy and, develop an attitude which paves the way for better living conditions.
		C229.3	Discover various aspects of Union Government legislation and live up to the expectations of the rules.

		C229.4	Critically examine State Government legislation and improve your living standards by following the rules strictly
		C229.5	Examine powers and functions of local bodies such as Municipalities and Panchayats and, take advantage of available resources for better living
		C229.6	Analyze the powers and functions of Election Commission and The Union Public Service Commission and decide upon it for safe and secured life.

Course Outcomes for R16 Regulation II-Semester			
III Year II Sem			
C321	POWER SYSTEMS ANALYSIS (EE601PC)	C321.1	Calculate impedance and admittance matrices for power system networks.
		C321.2	Evaluate load flow parameters using Numerical Methods.
		C321.3	Determine per unit quantities for power system networks.
		C321.4	Assess the effects of symmetrical and unsymmetrical faults on the power system networks.
		C321.5	Analyze dynamic, transient and steady state behavior of power system networks.
		C321.6	Estimate and improve the stability of power system networks.
C322	POWER ELECTRONICS (EE602PC)	C322.1	Analyze the characteristics and working of power semi conductor devices.
		C322.2	Assess the power electronic converters for AC/DC conversion
		C322.3	Evaluate control techniques and protection schemes for power electronic devices
		C322.4	Assess the power electronic converters for AC/AC conversion
		C322.5	Determine voltage, current and frequency parameters of dc-dc converters by applying control strategies.
		C322.6	Illustrate various control techniques for thyristor and transistor based inverters
C323	SWITCH GEAR AND PROTECTION (EE603PC)	C323.1	Evaluate the construction and working of circuit breakers for real time applications.
		C323.2	Categorize the types of relays based on their operating principle along with their usage.
		C323.3	Probe the protection schemes for generation and transmission systems during faults.
		C323.4	Classify the types of grounding for the power system.
		C323.5	Categorize over voltage protection schemes.
		C323.6	Illustrate insulation coordination for power system protection.
C324	DESIGN ESTIMATION AND COSTING OF ELECTRICAL SYSTEMS (EE621OE)	C324.1	Analyze various design considerations of electrical installations.
		C324.2	Design electrical estimation and costing for various types of buildings and small industries.
		C324.3	Emphasize on specifications for overhead and underground transmission and distribution lines.
		C324.4	Design bill of material for various types of substations.
		C324.5	Design illumination schemes using various light sources.

		C324.6	Apply suitable earthing and related fittings for a particular application based on indian electricity rules.
C325	ENERGY STORAGE SYSTEMS (EE622OE)	**C325.1**	Apply engineering fundamentals to design and implement electrical energy storage technologies
		C325.2	Develop significant sustainable energy solutions by different storage systems
		C325.3	Operate and investigate the performance of selected energy storage solutions while considering the hazards and risks associated with them.
		C325.4	Model electrical energy storage systems when used in conjunction with sustainable energy solutions
		C325.5	Develop innovative and sustainable solutions for storing and using renewable sources of energy sustainably
		C325.6	Assess applications of energy storage systems for utilities
C326	INTRODUCTION TO MECHATRONICS (EE623OE)	**C326.1**	Analyze control engineering systems and signal conditioning.
		C326.2	Identify different sensors, transudes and actuators to monitor and control the behavior of a process or a product.
		C326.3	Apply electro mechanical drives and micro controllers for specific applications.
		C326.4	Develop PLC programs for the given task.
		C326.5	Develop transfer function for Mechatronics systems
		C326.6	Evaluate the performance of Mechatronics systems.
C327	COMPUTER ORGANIZATION (EM611PE)	**C327.1**	Understand the basic Concepts and Design of CPU, ALU and Control Unit
		C327.2	Understand Memory hierarchy and its impact on Computer cost and performance
		C327.3	Understand the advantages of instruction level parallelism and pipelining for high performance processor design
		C327.4	Understand the instruction set, instructions formats and addressing modes of 8086
		C327.5	Solve problems using assembly language programs
		C327.6	Compare different ways of communicating with I/O devices and standard I/O interface
C328	LINEAR SYSTEMS ANALYSIS (EE612PE)	**C328.1**	Analyze electrical network by state variable approach.
		C328.2	Apply Fourier series, Fourier Transforms and Laplace for circuit analysis.
		C328.3	Test the polynomial functions by different methods.
		C328.4	Synthesize RL, RC and LC networks by Foster and Cauer methods.
		C328.5	Expound sampling concepts, Energy and Power density spectrum.
		C328.6	Elucidate Z-Transforms for various classes of signals.
C329	LINEAR AND DIGITAL IC APPLICATIONS (EE613PE)	**C329.1**	Analyze characteristics and various applications of Op-Amp µA 741.
		C329.2	Choose appropriate regulator based on the type of application
		C329.3	Use IC 555 and IC 565 for different analog applications.
		C329.4	Differentiate between various types of data converters.

		C329.5	Design various combinational circuits using digital IC's
		C329.6	Analyze sequential circuits and memories using various digital IC's
C32A	ELECTRICAL AND ELECTRONICS INSTRUMENTATION (EE614PE)	C32A.1	Evaluate the characteristics of signals and their representation
		C32A.2	Analyze the working principle of CRO
		C32A.3	Analyze the working principle of Digital Voltmeters
		C32A.4	Categorize the Signal analyzers based on types and applications
		C32A.5	Analyze the different types of transducers
		C32A.6	Measure nonelectrical quantities with the concept of Transducers
C32B	POWER SYSTEMS LAB (EE604PC)	C32B.1	Evaluate load flow parameters using Numerical Methods.
		C32B.2	Analyze the performance of Transmission lines, relays, CT, PT and Insulator strings.
		C32B.3	Analyze the stability and the sequence impedances of AC Machines.
		C32B.4	Asses the parameters and impact of faults on a power system network.
C32C	POWER ELECTRONICS LAB (EE605PC)	C32C.1	Examine the characteristics of SCR, MOSFET and IGBT
		C32C.2	Analyze different firing techniques to Turn-on and Turn-off of an SCR
		C32C.3	Analyze power electronic converters by varying gate pulses.
		C32C.4	Design Power Electronic converters using simulation tools
C32D	ADVANCED ENGLISH COMMUNICATIONS SKILLS LAB (EN606HSS)	C32D.1	Build sound vocabulary and its proper use contextually.
		C32D.2	Make use of functional English effectively in formal and informal contexts.
		C32D.3	Develop effective speaking skills and Maximize job prospects.
		C32D.4	Plan and make different forms of presentation using various techniques.
IV Year II Sem			
C421	ENTERPRENEUR RESOURCE PLANNING (EE831OE)	C421.1	Make use of evolutionary development of Enterprise Resource Planning.
		C421.2	Apply ERP System options and selection methods for different projects.
		C421.3	Develop Risk Identification Analysis in Managing Projects.
		C421.4	Analyze ERP functions with respect to Sales and Marketing, Accounting and Finance and Customer Relationship Management.
		C421.5	Apply Production Module in ERP.
		C421.6	Examine the future directions of ERP.
C422	MANAGEMENT INFORMATION SYSTEMS (EE832OE)	C422.1	Explore Various Information systems models and types of Information systems
		C422.2	Identify the importance of Security , control and audit in information systems
		C422.3	Illustrate the role of ERP in information systems
		C422.4	Examine various ERP modules in Information systems perspective

		C422.5	Evaluate the benefits of ERP in quality management
		C422.6	Analyze the techniques for ERP implementation and maintenance
C423	ORGANIZATIONAL BEHAVIOUR (EE833OE)	C423.1	Analyze the behavior of individuals and groups in Organizations
		C423.2	Analyze the factors that influence Organizational behavior
		C423.3	Examine the potential effects of organizational level factors on organizational behavior.
		C423.4	Analyze potential effects of important developments in the external environment on Organizational behavior.
		C423.5	Examine the role of globalization and advances in technology on Organizational behavior.
		C423.6	Analyze organizational behavior theories, models and concepts.
C424	ARTIFICIAL NEURAL NETWORKS AND FUZZY SYSTEMS (EE851PE)	C424.1	Interpret biological neuron to a mathematical model
		C424.2	Categorize types of Neuron Activation Functions and ANN Architectures
		C424.3	Emphasize on single and multi layer perception models
		C424.4	Apply general concepts of Associate memory and basic algorithms
		C424.5	Elucidate architecture of Hopfield networks and its learning algorithms
		C424.6	Appraise fuzzy logic theory with respect to Classical set theory
C425	ELECTRICAL DISTRIBUTION SYSTEMS (EE852PE)	C425.1	Assess characteristics and various factors for different types of loads
		C425.2	Classify distribution feeders based on design considerations
		C425.3	Compute the rating of substation under specified constraints related to distribution systems
		C425.4	Categorize various protective devices and their coordination
		C425.5	Estimate the line drop and power factor in distribution systems
		C425.6	Assess the type of capacitor and suitable location for voltage control and it's regulation
C426	WIND, SOLAR AND HYBRID ENERGY SYSTEMS (EE853PE)	C426.1	Ability to distinguish between the sustainable energy sources and fossil energy sources with emphasis on wind and solar power generation systems.
		C426.2	Understand the basic physics of wind and solar power generation
		C426.3	Analyze the wind generator topologies
		C426.4	Differentiate the types of PV panels and their characteristics
		C426.5	Compute Solar Power generation by various technologies
		C426.6	Analyze the power quality issues related to the grid-integration of solar and wind energy systems
C427	HIGH VOLTAGE ENGINEERING (EE854PE)	C427.1	Compute electric field stress using numerical methods.
		C427.2	List the applications of insulating materials.
		C427.3	Examine breakdown mechanisms in different states of matter.
		C427.4	Analyze the circuits used to generate and measure high voltages and currents.
		C427.5	Point out the causes and effects of over voltages.

		C427.6	Categorize high voltage testing of materials and apparatus.
C428	VLSI DESIGN (EE861PE)	C428.1	Summarize the various steps in VLSI fabrication process of different MOS Technologies
		C428.2	Analyze the electrical properties and models of CMOS circuits.
		C428.3	Construct layouts using stick diagrams in accordance with the design rules.
		C428.4	Implement complex digital logic circuits using switch logic and PLDs.
		C428.5	Build different VLSI subsystems using CMOS logic.
		C428.6	Analyze the concepts of testing and fault tolerant systems.
C429	SMART ELECTRIC GRID (EE863PE)	C429.1	Classify various aspects of the smart Grid
		C429.2	Analyze the importance of DC distribution and developing technologies in power systems
		C429.3	Illustrate the concepts of Dynamic Energy systems
		C429.4	Differentiate the trade-off between economics and reliability of an electric power system.
		C429.5	Recite the structure of an electricity market in either regulated or deregulated conditions.
		C429.6	Understand the importance of smart systems in improving energy efficiency of electrical systems
C42A	UTILIZATION OF ELECTRIC POWER (EE863PE)	C42A.1	Assess the electric drives based on their characteristics for industrial applications.
		C42A.2	Categorize the electric heating methods based on nature of charge.
		C42A.3	Assess welding methods based on properties of metals.
		C42A.4	Design lighting schemes for given specifications.
		C42A.5	Evaluate speed time curves for different services.
		C42A.6	Determine specific energy consumption of electric locomotives for a given run
C42B	ELECTRIC AND HYBRID VEHICLES (EE864PE)	C42B.1	Understand the performance of conventional vehicles by mathematical models.
		C42B.2	Illustrate the importance of hybrid and electric vehicles to safeguard environment
		C42B.3	Analyze power flow of hybrid electric drive trains by various topologies
		C42B.4	Evaluate the energy storage technology by sizing various sub systems
		C42B.5	Analyze Performance of DC and AC drives
		C42B.6	Understand energy management strategies of hybrid and battery electric vehicles
C42C	MAJOR PROJECT (EE801PC)	C42C.1	Indentify problem, conduct relevant literature survey and formalize it.
		C42C.2	Analyze & design efficient, cost-effective and eco-friendly solutions using relevant tools(if necessary) and processes.
		C42C.3	Implement the design and demonstrate the functionality of developed model
		C42C.4	Evaluate the results to derive the conclusion and provide scope for future enhancement.

		C42C.5	Exhibit good interpersonal and leadership skills in meeting project deadlines with individual contribution towards progress of the project.