



Vidya Jyothi Institute of Technology

An Autonomous Institution

(Accredited by NAAC & NBA, Approved by AICTE New Delhi & Permanently Affiliated to JNTUH) Aziz Nagar Gate, C.B. Post, Hyderabad-500 075

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

R18 – COURSE OUTCOMES

II-B.TECH I SEM

A23011	COMPLEX ANALYSIS AND FOURIER TRANSFORMS
	After the completion of this course, a student must demonstrate the knowledge and ability to
C211.1	Work with the functions of complex variables and evaluation of complex differentiation.
C211.2	Acquire the knowledge of complex power series and integration
C211.3	Apply the knowledge of contour integration to evaluate real integrals in engineering problems and acquire the knowledge of evaluating of conformal mapping and bilinear transformations.
C211.4	Studying of Fourier series and defining it for various types of functions
C211.5	Apply Fourier sine and cosine integral theorems for a given function $f(x)$ evaluate Fourier transforms, sine and cosine transform

A23010	PROFESSIONAL COMMUNICATION
	After the completion of this course, a student must demonstrate the knowledge and ability to
C212.1	Acquire enhanced personality
C212.2	Exhibit appropriate professional etiquette
C212.3	Practice team building with strong communication skills
C212.4	Develop problem solving skills and decision-making
C212.5	Demonstrate effective presentation skills



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A23203	POWER SYSTEMS-I
	After the completion of this course, a student must demonstrate the knowledge and ability to
C213.1	Understand the principle of generation of electric power in thermal, hydro, nuclear and gas powerstations.
C213.2	Apply concepts in distribution systems to solve problems.
C213.3	Interpret the arrangement and operation of AIS and GIS substations.
C213.4	Analyze methods to improve the power factor and voltage control.
C213.5	Evaluate various power tariff methods

A23204	NETWORK ANALYSIS
	After the completion of this course, a student must demonstrate the knowledge and ability to
C214.1	Apply network theorems for the analysis of electrical networks.
C214.2	Obtain the transient and steady-state response of electrical circuits.
C214.3	Apply graph theory to formulate network equations.
C214.4	Analyze two port networks.
C214.5	Evaluate circuits in the sinusoidal steady-state(Three-phase).

A23205	ELECTRO MAGNETIC FIELDS
	After the completion of this course, a student must demonstrate the knowledge and ability to
C215.1	Understand The Basic Laws Of Electromagnetism.
C215.2	Obtain The Electric And Magnetic Fields For Simple Configurations Under Static Conditions.
C215.3	Analyze Time Varying Electric And Magnetic Fields
C215.4	Examine Maxwell's Equations In Different Forms And Different Media.



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C215.5	Apply Electromagnetic Concepts to Electrical Machines
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A23206	ELECTRICAL MACHINES –I
	After the completion of this course, a student must demonstrate the knowledge and ability to
C216.1	Understand the basic laws of electro magnetism.
C216.2	Obtain the electric and magnetic fields' concepts for simple configurations under static conditions.
C216.3	Analyze time varying electric and magnetic fields.
C216.4	Examine Maxwell's equations in different forms and different media.
C216.5	Apply electromagnetic concepts to electrical machines.

A23283	BASIC SIMULATION TOOLS LAB
	After the completion of this course, a student must demonstrate the knowledge and ability to
C217.1	Correlate the data using plots.
C217.2	Verify network theorems.
C217.3	Observe transient response of series circuits.
C217.4	Simulate rectifier circuits.
C217.5	Analyze networks using network theorems

A23284	ELECTRICAL CIRCUITS LAB
	After the completion of this course, a student must demonstrate the knowledge and ability to
C218.1	Evaluate response in a given network by using network theorems.
C218.2	Analyze complex DC and AC linear circuits.
C218.3	Apply concepts of electrical circuits.
C218.4	Evaluate active power and reactive power of electric circuits.



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C218.5	Determine two port network parameters.
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A23MC1	ENVIRONMENTAL SCIENCE
	After the completion of this course, a student must demonstrate the knowledge and ability to
C219.1	Define and explain the structure and functions of ecosystem, values of biodiversity, threats to biodiversity and conservation of biodiversity.
C219.2	Explain the limitations of the resources and impacts of over utilization of natural resources.
C219.3	Explain the sources and effects of environmental pollution and list and identify the available techniques to control the pollution.
C219.4	Explain the global environmental issues like climate change, ozone depletion and can explain the scope of EIA, Environmental Management Plan and environmental audit and list the EIA methods.
C219.5	Mention the salient features of environmental acts and rules and define the sustainable goals along with measures required for the sustainability

II-B.TECH II SEM

A24014	NUMERICAL METHODS AND PARTIAL DIFFERENTIAL EQUATIONS
	After the completion of this course, a student must demonstrate the knowledge and ability to
C221.1	Develop skills in solving engineering problems involving algebraic and transcendental equations.
C221.2	Acquires the knowledge of interpolation in predicting future out comes based on the present knowledge and also to fit different types of curves.
C221.3	To know various types of numerical methods in solving engineering problems.
C221.4	Classify the nature of second and higher order partial differential equations and find the solutions of linear and nonlinear PDE
C221.5	Apply partial differential equations in different engineering problems.



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A24109	FLUID MECHANICS AND HYDRAULIC MACHINES
	After the completion of this course, a student must demonstrate the knowledge and ability to
C222.1	Explain fluid properties, types of fluid flows and formulate one and three dimensional compressible fluid flow problems and solve the same.
C222.2	Apply conservation of mass, energy and momentum laws to fluid flow problems in engineering applications and study the losses in pipes.
C222.3	Compute drag and lift forces using theory of boundary layer and understand the basics of turbo machinery.
C222.4	Analyze practical problems of various turbines used in Industry and hydro power plants.
C222.5	Solve various engineering problems related to centrifugal and reciprocating pumps used in agriculture, domestic and industrial applications.

A24406	ELECTRONICS DEVICES AND CIRCUITS
	After the completion of this course, a student must demonstrate the knowledge and ability to
C223.1	Demonstrate the concepts of semiconductor theory.
C223.2	Interpret the characteristics of different semiconductor devices with its applications.
C223.3	Apply different biasing techniques of transistors for amplification.
C223.4	Analyze transistor amplifiers using small signal model.
C223.5	Analyze FET amplifiers using small signal model.

A24208	ELECTRICAL MACHINES –II
	After the completion of this course, a student must demonstrate the knowledge and ability to
C224.1	Understand the concepts of rotating magnetic fields and the working principle of single phase transformer.
C224.2	Analyze the operation & connection of three phase transformer.



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C224.3	Understand the construction & operation of three phase induction motor.
C224.4	Analyze the performance of three phase induction motor.
C224.5	Understand the construction & operation of single phase induction motor.

A24209	POWER SYSTEMS – II
	After the completion of this course, a student must demonstrate the knowledge and ability to
C225.1	Understand transmission line parameters.
C225.2	Observe the performance of transmission lines.
C225.3	Analyze transient behavior of transmission lines.
C225.4	Evaluate mechanical design of transmission lines.
C225.5	Understand the construction, grading and capacitance of underground cables.

A24210	CONTROL SYSTEMS
	After the completion of this course, a student must demonstrate the knowledge and ability to
C226.1	Understand the fundamentals of classical and modern control systems.
C226.2	Model various electrical and mechanical systems.
C226.3	Analyze time and frequency responses of first and second-order systems.
C226.4	Analyze stability of control systems.
C226.5	Represent linear discrete time system in State space

A24285	ELECTRICAL MACHINES – I LAB
	After the completion of this course, a student must demonstrate the knowledge and ability to
C227.1	Start and control the Different types of DC motors.



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C227.2	Assess the performance of different types of DC machines using different testing methods.
C227.3	Identify different conditions required to be satisfied for self - excitation of DC Generators.
C227.4	Separation losses of DC motor into different components.
C227.5	Analyze the performance of coupled machines.

A24484	ELECTRONIC DEVICES AND CIRCUITS LAB
	After the completion of this course, a student must demonstrate the knowledge and ability to
C228.1	Understand basic concepts of electronic devices and circuits.
C228.2	Analyze the characteristics of electronic devices and circuits.
C228.3	Apply the concepts of electronics devices and circuits to find various parameters.
C228.4	Evaluate the behavior of basic electronic devices.
C228.5	Analyze the characteristics of FET and UJT

A24MC1	GENDER SENSITIZATION
	After the completion of this course, a student must demonstrate the knowledge and ability to
C229.1	Develop awareness about gender discrimination and take measurable steps to counter it.
C229.2	Identify the basic dimensions of biological, sociological, psychological and legal aspects of gender.
C229.3	Acquire knowledge about gendered division of labour in relation to politics and economics.
C229.4	Prepare the students against gender violence
C229.5	Prepare the students to work and live together as equals.



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III B.TECH I SEM

A25016	MANAGERIAL ECONOMICS AND FINANCIAL ACCOUNTS
	After the completion of this course, a student must demonstrate the knowledge and ability to
C311.1	Analyze the scope of managerial economics.
C311.2	Apply managerial tools and techniques to attain optimal decisions.
C311.3	Analyze how production function is carried out to achieve maximum output.
C311.4	Analyze changing business environment in post liberalization scenario.
C311.5	Evaluate and interpret the financial statements to make informed decisions.

A25412	SWITCHING THEORY AND LOGIC DESIGN
	After the completion of this course, a student must demonstrate the knowledge and ability to
C312.1	Manipulate numeric information in different forms, e.g. different bases, signed integers, various codes such as ASCII, gray and BCD.
C312.2	Manipulate simple boolean expressions using the theorems and postulates of boolean algebra and to minimize combinational functions.
C312.3	Design and analyze small combinational circuits and to use standard combinational functions/building blocks to build larger more complex circuits.
C312.4	Design and analyze small sequential circuits and devices and to use standard sequential functions/building blocks to build larger more complex circuits.
C312.5	To develop the state diagrams with the knowledge of Mealy and Moore circuits and algorithmic state machines for binary multipliers.



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A25212	ELECTRICAL MACHINES-III
	After the completion of this course, a student must demonstrate the knowledge and ability to
C313.1	Understand the construction and principle of operation of synchronous machine. Armature reaction , load characteristics, harmonics in generating emf etc.
C313.2	Solve regulation of synchronous generator using various methods.
C313.3	Understand the concept of Parallel operation of alternators, load sharing, change of excitation& prime-mover input.
C313.4	Understand the principle of operation of synchronous motor and working principle of a synchronous condenser in the system, power circle.
C313.5	Understand the use of special machines and their performances.

A25213	POWER ELECTRONICS
	After the completion of this course, a student must demonstrate the knowledge and ability to
C314.1	Understand about various power electronic devices and their commutation procedure.
C314.2	Analyze the operation of various phase-controlled converters.
C314.3	Analyze AC-AC converters and solve the problems.
C314.4	Analyze the operation of DC-DC converters understanding and solve the problems.
C314.5	Analyze the operation of DC-AC converters and understanding the problems.

A25214	ELECTRICAL ENERGY CONSERVATION AND AUDITING
	After the completion of this course, a student must demonstrate the knowledge and ability to
C315.1	Understand the current energy scenario and importance of energy conservation.
C315.2	Apply the concepts of energy management.
C315.3	Evaluate energy efficiency in different electrical systems.



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C315.4	Analyze the energy audit of different energy systems.
C315.5	Analyze the energy audit of different energy systems.
A25215	ELECTRICAL ESTIMATION AND COSTING
	After the completion of this course, a student must demonstrate the knowledge and ability to
C316.1	Generalize estimation and costing aspects of all electrical equipment.
C316.2	Determine the concepts of installation and designs to analyse the cost viability.
C316.3	Evaluate design aspects of wiring system, overhead and underground distribution lines, substations and illuminations.
C316.4	Estimate the cost of various electrical designs and equipment.
C316.5	Analyze overhead and underground transmission and distribution lines.

A25216	NON-CONVENTIONAL ENERGY SOURCES (OPEN ELECTIVE)
	After the completion of this course, a student must demonstrate the knowledge and ability to
C317.1	Realize the importance of renewable energy sources for energy planning.
C317.2	Understand the value of solar energy potential and exploit the solar energy for real world applications.
C317.3	Understand the potential of wind energy, types of wind mills, performance characteristics and Betz criteria.
C317.4	Analyze the potential of both tidal and ocean thermal energies and learn the extraction methods.
C317.5	Know the potential of geothermal, bio-mass energies and learn relevant extraction methods.

A25217	FUNDAMENTALS OF ELECTRICAL POWER GENERATION AND PROTECTION (OPEN ELECTIVE)
	After the completion of this course, a student must demonstrate the knowledge and ability to
C318.1	Understand the operation of Thermal power station through its schematic diagram.
C318.2	Analyze the arrangement of Hydroelectric power station through its components



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C318.3	Sketching the various components of Nuclear power station.
C318.4	Correlating the operation of Gas and Diesel power station through its schematic Diagram.
C318.5	Understand various power system protection components.

A25287	ELECTRICAL MACHINES – II LAB
	After the completion of this course, a student must demonstrate the knowledge and ability to
C319.1	Understand the basic working principle of a transformer; obtain the equivalent circuit parameters, estimate efficiency & regulation at various loads of 1- Φ transformers.
C319.2	Understand load sharing of transformers & conversion of 3- Φ to 2- Φ supply.
C319.3	Determine the equivalent circuit parameters of a single phase induction motor, determine the performance characteristics and efficiency by direct and indirect methods of three phase induction motor.
C319.4	Analyze the regulation of an alternator by various methods at different power factors.
C319.5	Understand synchronous motor performance curves at various power factors and field currents.

A25087	ADVANCED COMMUNICATION SKILLS LAB
	After the completion of this course, a student must demonstrate the knowledge and ability to
C3110.1	Develop sound communication skills in various situations with the help of enriched vocabulary.
C3110.2	Practice reading techniques for a faster and better comprehension.
C3110.3	Exhibit strong writing skills to express ideas effectively.
C3110.4	Demonstrate effective presentation skills.
C3110.5	Use appropriate verbal and non-verbal skills for a successful career.

A25TP1	QUANTITATIVE METHODS & LOGICAL REASONING
	After the completion of this course, a student must demonstrate the knowledge and ability to
C3111.1	Perform well in various competitive exams and placement drives.



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C3111.2	Solve basic and complex mathematical problems in short time.
C3111.3	Become strong in quantitative aptitude and reasoning this can be applied for GRE, GATE, GMAT or CAT exam also
C3111.4	Develop problem solving skills and analytical abilities, which play a great role in corporate and industry setup

III B.TECH II SEM

A26219	ELECTRICAL MEASUREMENTS & INSTRUMENTATION
	After the completion of this course, a student must demonstrate the knowledge and ability to
C321.1	Analyze all the types of measuring instruments and error compensations.
C321.2	Discuss the operation of DC Crompton potentiometer; compare the CT and PT with phasor diagram.
C321.3	Discuss and learn the concepts of power and energy measurement by using wattmeter and energy meter
C321.4	Outline the concept of DC and AC bridges for the measurement of resistance, inductance & capacitance.
C321.5	Analyze the concepts of transducers and cathode ray oscilloscopes.

A26220	COMPUTER METHODS IN POWER SYSTEMS
	After the completion of this course, a student must demonstrate the knowledge and ability to
C322.1	Develop Y-bus and Z-bus matrices.
C322.2	Know the importance of load flow studies and its importance.
C322.3	Understand Per unit system
C322.4	Compare various types of short-circuit faults
C322.5	Understand the power system steady state stability and transient state stability

A26221	POWER SEMICONDUCTOR DRIVES
	After the completion of this course, a student must demonstrate the knowledge and ability to



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C323.1	Understand the concepts of the dynamics of electric drives and speed control of different types of DC drives.
C323.2	Analyze four quadrant operation to control speed of DC drives using dual converters.
C323.3	Examine four quadrant operation to control speed of DC drives using choppers.
C323.4	Discuss speed control of induction motor drives.
C323.5	Study speed control of synchronous motor drives

A26222	SWITCH GEAR AND PROTECTION
	After the completion of this course, a student must demonstrate the knowledge and ability to
C324.1	Know basic working of circuit breaker and classification of circuit breakers.
C324.2	Make out the application of different types of circuits breakers in power systems.
C324.3	Understand Principle of operation of over current, directional, differential and distance relays.
C324.4	Device protection methods for alternators, transformers, bus-bars.
C324.5	Gain concept of neutral grounding and protection Method list from different types of surge.

A26223	INTEGRATED CIRCUIT AND APPLICATIONS
	After the completion of this course, a student must demonstrate the knowledge and ability to
C325.1	Remember the characteristics of different integrated circuits families.
C325.2	Infer the different applications of operational amplifiers under different configurations.
C325.3	Recognize the importance of special function integrated circuits on different engineering applications.
C325.4	Interpret the need for data converters for real time applications.
C325.5	Design and analysis of first order active filter and waveform generators using operational amplifiers.

A26224	ARTIFICIAL INTELLIGENCE TECHNIQUES IN ELECTRICAL ENGINEERING
	After the completion of this course, a student must demonstrate the



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	knowledge and ability to
C326.1	Understanding artificial neural networks.
C326.2	Generalize feed forward neural networks, feedback neural networks and learning techniques.
C326.3	Identify fuzziness involved in various systems and fuzzy set theory.
C326.4	Discover fuzzy logic control for applications in electrical engineering.
C326.5	Interpret genetic algorithm for applications in electrical engineering.

A26225	ENERGY AUDITING AND CONSERVATION (OPEN ELECTIVE)
	After the completion of this course, a student must demonstrate the knowledge and ability to
C327.1	understand energy audit of industries
C327.2	Predict management of energy systems
C327.3	Sequence the methods of improving efficiency of electric motor
C327.4	Analyze the power factor and to design a good illumination system
C327.5	Determine pay back periods for energy saving equipment

A26226	PRINCIPLES OF ELECTRIC POWER UTILIZATION (OPEN ELECTIVE)
	After the completion of this course, a student must demonstrate the knowledge and ability to
C328.1	Understand basic principles of illumination, electric heating and welding, Electric drives and Traction.
C328.2	Determine the lighting requirements for flood lighting, household and industrial needs.
C328.3	Calculate heat developed in induction furnace.
C328.4	Evaluate speed time curves for traction
C328.5	Analyze specific energy consumption of traction systems

A26288	CONTROL SYSTEMS AND SIMULATION LAB
	After the completion of this course, a student must demonstrate the knowledge and ability to



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C329.1	Examine the time response of second order systems, synchros, and truth tables verification by PLC.
C329.2	Design of AC servomotor and DC servomotor to find out their transfer function practically.
C329.3	Design of DC motor, DC generator, and finding out their transfer function practically.
C329.4	Analyze magnetic amplifier characteristics.
C329.5	Explain stability analysis through bode, Nyquist and root locus plots using MATLAB.

A26289	POWER ELECTRONICS & SIMULATION LAB
	After the completion of this course, a student must demonstrate the knowledge and ability to
C3210.1	Examine the characteristics of SCR, MOSFET, & IGBT, and analyze triggering circuits.
C3210.2	Analyze input and output characteristics of AC-DC converters.
C3210.3	Synthesize input and output characteristics of cyclo converters.
C3210.4	Examine input and output characteristics of DC-DC Converters.
C3210.5	Design of converters and inverters using P-Spice software.

A26TP1	PERSONALITY DEVELOPMENT & BEHAVIORAL SKILLS
	After the completion of this course, a student must demonstrate the knowledge and ability to
C3211.1	Practice optimistic attitude for an efficient socially viable and multi-faceted personality.
C3211.2	Demonstrate functions of non-verbal communication in formal context.
C3211.3	Build effective individual & team dynamics for professional accomplishments.
C3211.4	Analyze appropriate strategic Interpersonal Skills for productive workplace relationships.
C3211.5	Correspond in multiple contexts, for varied audiences, across genres and modalities



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IV B.TECH I SEM

A27428	MICROPROCESSORS AND INTERFACING DEVICES
	After the completion of this course, a student must demonstrate the knowledge and ability to
C411.1	Illustrate the internal architecture of 8086 and 8051.
C411.2	Understand and apply the fundamentals of assembly level programming of microprocessors and microcontroller.
C411.3	Explain the use of interrupts with suitable examples.
C411.4	Demonstrate the interfacing of various peripheral devices with the microprocessor 8086.
C411.5	Design electrical circuitry to the Microcontroller I/O ports in order to interface the controller to external devices.

A27227	POWER SYSTEMS OPERATION AND CONTROL
	After the completion of this course, a student must demonstrate the knowledge and ability to
C412.1	Understand economic operation of power systems.
C412.2	Analyze and compute optimal loading of generators for a particular load demand.
C412.3	Develop mathematical models of turbines and governors.
C412.4	Address load frequency control problem.
C412.5	Explain how series and shunt compensation helps in reactive power control.

A27228	ELECTRIC VEHICLES
	After the completion of this course, a student must demonstrate the knowledge and ability to
C413.1	Understand the components of Electric Vehicles and Fundamentals of Electric Vehicles.
C413.2	Explain the types of batteries and principles of operation of batteries.



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C413.3	Pursue the basic principles of Electric motors which can be used in Electric vehicles.
C413.4	Apprehend the transmission of the drive system and the components
C413.5	Understand the concepts of hybrid vehicles and analyze the performance of hybrid vehicles

A27229	SMART GRIDS
	After the completion of this course, a student must demonstrate the knowledge and ability to
C414.1	Report the features of Smart Grid.
C414.2	Outline the smart grid architecture.
C414.3	Optimize Transmission and Distribution systems.
C414.4	Represent operation and importance of PMUs, WAMS.
C414.5	Discover control techniques for micro grid and smart grid

A27230	ELECTRICAL DISTRIBUTION SYSTEMS
	After the completion of this course, a student must demonstrate the knowledge and ability to
C415.1	Distinguish between transmission and distribution systems. Classification of loads and their characteristics.
C415.2	Understand design considerations of distribution feeders and substations.
C415.3	Compute voltage drop and power loss in feeders.
C415.4	Understand protection and coordination of distribution systems.
C415.5	Examine the power factor improvement and voltage control

A27231	INDUSTRIAL ELECTRICAL SYSTEMS
	After the completion of this course, a student must demonstrate the knowledge and ability to
C416.1	Review electrical wiring systems for residential, commercial and industrial consumers, representing the systems with standard symbols
C416.2	Distinguish residential and commercial electrical systems.
C416.3	Identify various illumination schemes.
C416.4	Select industrial load, motor, transformer and other components.
C416.5	Carry out selection of industrial power backscheme.



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A27232	ELECTRIC VEHICLES AND HYBRID VEHICLES(OPEN ELECTIVE)
	After the completion of this course, a student must demonstrate the knowledge and ability to
C417.1	Understand the working of different configurations of electric vehicles, hybrid vehicles and its components.
C417.2	Apply the basic concepts of batteries and Motors in the design of Electric and Hybrid Vehicles.
C417.3	Differentiate the modes of operation of Hybrid Vehicles.
C417.4	Analyze the performance of hybrid vehicles.
C417.5	Design the basic parameters of Electric and Hybrid Electric

A27233	ENERGY STORAGE SYSTEMS(OPEN ELECTIVE)
	After the completion of this course, a student must demonstrate the knowledge and ability to
C418.1	Understand electrical energy storage technologies.
C418.2	Explain the needs for electric energy storage.
C418.3	Analyze the characteristics and features of energy from various sources.
C418.4	Classify various types of energy storage and various devices used for
C418.5	Apply the same concepts to real time solutions like electric vehicles,

A27490	MICROPROCESSORS AND INTERFACING LAB
	After the completion of this course, a student must demonstrate the knowledge and ability to
C419.1	Apply the fundamentals of assembly level programming of
C419.2	Build a program on a microprocessor using instruction set of 8086 and 8051.
C419.3	Evaluate assembly language program for 8086 and 8051 microcontroller to interface peripheral devices for simple
C419.4	Understand the development of prototype using combination of
C419.5	Develop assembly language programs for various applications using

A27290	ELECTRICAL MEASUREMENTS LAB
	After the completion of this course, a student must demonstrate the knowledge and ability to
C4110.1	Calibrate voltmeters, ammeters and single phase energy meter.



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C4110.2	Design the scale of PMMC voltmeter, LPF wattmeter, LVDT and resistance strain gauge.
C4110.3	Calculate resistance, inductance and capacitance using bridges.
C4110.4	Compute 3- Φ reactive power.
C4110.5	Test single phase energy meter and dielectric strength of oil of transformers.

A272P1	MINI PROJECT
	After the completion of this course, a student must demonstrate the knowledge and ability to
C4111.1	Undertake problem identification, formulation and solution.
C4111.2	Know the key stages in the devolvement of the project.
C4111.3	Inculcate software / hardware implementation skills
C4111.4	Understand methodologies and professional way of documentation
C4111.5	Extend / use the idea of mini project for major project.

IV B.TECH II SEM

A28234	UTILIZATION OF ELECTRICAL ENERGY
	After the completion of this course, a student must demonstrate the knowledge and ability to
C421.1	Study illumination methods & solutions for illumination.
C421.2	Acquire knowledge of methods of electrical heating & welding and related problems.
C421.3	Understand various electrical drives, their characteristics & applications.
C421.4	Analyze electric traction movement.
C421.5	Observe the effect of varying acceleration and braking retardation.

A28235	RENEWABLE ENERGY AND ENERGY STORAGE TECHNOLOGIES
	After the completion of this course, a student must demonstrate the knowledge and ability to
C422.1	Discuss the energy scenario and the consequent growth of the power generation from renewable energy sources.



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C422.2	Explain the basic physics of wind and wind generation topologies
C422.3	Describe the basics of solar power generation
C422.4	Express the power electronic interfaces for solar PV generation.
C422.5	Generalize the issues related to the grid-integration of solar and wind energy systems.

A282TS	TECHNICAL SEMINAR
	After the completion of this course, a student must demonstrate the knowledge and ability to
C423.1	Identify promising new direction of various cutting edge technologies in electrical and electronics domain.
C423.2	Do literature survey using library resources, internet, and technical journals for a thrust area.
C423.3	Prepare a technical report and present with the latest tools of presentations.
C423.4	Enhance the skills of self-study and lifelong learning.

A282CV	COMPREHENSIVE VIVA-VOCE
	After the completion of this course, a student must demonstrate the knowledge and ability to
C424.1	Acknowledge the understanding level in various areas of electrical and electronics engineering.
C424.2	Prepare comprehensively to answer question from all the courses studied.
C424.3	Attain oral presentation skills by answering question in precise and concise manner.
C424.4	Preparedness to face interviews both in the academic and industrial sector.
C424.5	Gain self-confidence and inter personal skills.

A282P2	MAJOR PROJECT
	After the completion of this course, a student must demonstrate the knowledge and ability to
C425.1	Develop comprehensive solution to issues identified in previous semester



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	project work.
C425.2	Formulate and develop a design proposal on a problem in area of interest.
C425.3	Apply technical / managerial skills for analysis, design, simulation and modeling of various real time problems in the domain of electrical and electronic engineering.
C425.4	Synthesize the results of detailed analytical studies conducted.
C425.5	Present he or her work in a conference or publish work in a peer reviewed journal