



Methodist College of Engineering and Technology

Department of Electrical and Electronics Engineering

Course Outcomes

AY: 2020-21

III Semester

Course Code	Course Name	Course Outcomes	Taxonomy
PC221EE	Electrical Circuit Analysis	Analyze and obtain the steady state response of electrical circuit.	Analyze
		Analyze the behavior of magnetic circuits.	Analyze
		Apply network theorems for the analysis of electrical circuits.	Apply
		Analyze solution of first and second order RL, RC and RLC networks.	Analyze
		Apply Laplace transforms for electrical circuits for analysis.	Apply
		Analyze the behaviour of two port networks.	Analyze
BS206BZ	Biology for Engineers	Recall the diversity in the living world	Remember
		Differentiate between microorganisms, plants, animals and the human system.	Understand
		Classify the organism for its employment in real time design and planning applications.	Evaluate
		Use of the knowledge of organism their systems and utilize to simulate, design and in planning applications.	Create
		Utilise the knowledge to analyze, distinguish and draw inference about the functioning of the living systems.	Analyze
		Able to apply this fundamental knowledge in projects related to human society.	Apply
ES211CE	Engineering Mechanics	Apply the fundamental concepts of forces, equilibrium conditions for static loads.	Apply
		Determine the Centroid and moment of inertia for cross various sections.	Evaluate
		Analyse the forces in the members of a truss using method of joints and method of sections	Analyze
		Explain the concept of friction for single and connected bodies.	Understand
		Apply the basic concepts of dynamics, their behaviour, analysis and motion bodies	Apply
		Solve problems involving work energy principles and impulse momentum theory.	Apply

PC222EE	Electromagnetic Fields	Understand the vector calculus for electromagnetism.	Understand
		Apply the electric fields for simple configurations under static conditions	Apply
		Analyze and apply the static magnetic fields.	Analyze
		Analyze the Electrical Circuits with the concept of Network topology	Analyze
		Understand Maxwell's equation in different forms and different media	Understand
		Understand the propagation of EM wave	Understand
ES213ME	Energy Sciences Engineering	Understand the basics of various sources of energy	Understand
		Demonstrate and understand the working of different power plants of conventional energy sources	Understand
		Analyze the working principles in generating of power using solar and wind sources	Analyze
		Analyze the power generation using the ocean energy and geothermal sources	Analyze
		Analyze Waste recovery systems and energy storage systems	Analyze
		Examine the pollution control methods , BEE standards, future needs and challenges, Estimation of cost in power production	Analyze
PC223EC	Analog Electronics	Interpret the characteristics and apply diode models to analyse various applications of diodes	Analyze
		Discriminate the bjt configurations to recognize the appropriate transistor configuration for any Given application and design the biasing circuits with good stability.	Understand
		Analyze and compare feedback amplifiers.	Realize
		Distinguish various classes of power amplifiers.	Analyze
		Analyse the operation of opamp and its applications.	Understand
		Examine the operation of opamp and its functions.	Apply

HS203MP	Industrial Psychology	Understanding to Apply the Psychology Concepts , theory in Industrial perspective	Apply
		Understanding the role played of psychological factors like Motivation, Human needs , Incentives , Job satisfaction , Counselling etc . , and their application in Industry	Understand
		Understand and Evaluate Consumer behaviour towards production enhancement	Evaluate
		Evaluate the present work methods and analyze their deficiencies and identify corrective methods	Analyze
		Identify the consequences of disturbing work environment due to factors like Noise , Illumination , Atmospheric conditions , work efficiency, fatigue etc. and discuss to mitigate them.	Apply
		To Examine a Holistic and Humane approach and apprise workers in Industry	Analyze
PC252EE	Computer Aided Electrical Drawing Lab	Identify and draw different components of electrical systems	Apply
		Draw different control and wiring diagrams	Create
		Draw winding diagrams of electrical machines	create
		To understand the terminology of electric circuit and electrical components	understand
		Familiarize with electrical machines, apparatus and appliances	understand
		To acquire knowledge on various Electrical Engineering software	Evaluate
PC253EC	Analog Electronics Lab	Describe and analyze different types of diodes, their operations and characteristics	Analyze
		Calculate ripple factor, efficiency and % regulation of rectifier circuits	Design
		Analyse feedback amplifiers and op-amp oscillator circuits	Realize
		Design single, and multi-stage amplifier, wave shaping and controller circuits	Design
		Understand the characteristics of electronics devices	Understand

		Design of p, pi and pid controllers using op-amps	Design
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V Semester

Course Code	Course Name	Course Outcomes	Taxonomy
PC236EE	Power System-I	Explain to the power /Energy demand in the form of graph Base Load and Peak Load	Understand
		Formulate A.C and D.C distribution networks for necessary variable calculation	Create
		Make use of Understand and acquire knowledge about various power generation.	Apply
		Discuss to Ability of various power sources for generation of power Merit/Demerits	Create
		Analyze to Supports sag and tension and String efficiency.	Analyze
		Modeling and calculating of transmission line parameters and power system components for a specified system and application	Analyze
PC235EE	Electrical Machines-II	Summarize the construction, working principle and performance of Transformers, 1-phase and 3-phase Induction Motors	Understand
		Determine the construction, working principle, performance, starting and speed control of 1-phase and 3-phase Induction Motors.	Evaluate
		Identify the construction, working principle and performance of Transformers and Induction motors.	Apply
		Examine the rating, testing and applications of single phase, three phase transformers.	Analyze
		Adapt the knowledge of Rotating magnetic field theory, Double field revolving theory	Create
		Find the equivalent circuit diagram of transformer, three-phase induction motor and single-phase induction motor	Remember
PC237EE	Linear Control Systems	Understand the concept of the terms control systems, feedback, Mathematical modeling of Electrical and Mechanical systems.	Understand
		Explain the time domain and frequency response analysis of control systems.	Evaluate

		Apply the knowledge of various analytical techniques used to determine the stability of control systems.	Apply
		Understand the importance of design of compensators	Create
		Demonstrate controllability and observability of modern control systems.	Understand
		Understand and develop the state space representation of control systems.	Apply
PC238EE	Microprocessors & Microcontrollers	Adapt the knowledge of Architecture of 8085 and 8051, writing assembly language programming for different applications.	Create
		Explain types of microcontrollers and their applications.	Understand
		Develop a program to run on 8085 microprocessor based systems.	Apply
		Define the techniques for faster execution of instructions, improve speed of operations and enhance performance of microprocessors.	Remember
		Interpret the difference between Microprocessors and Microcontrollers.	Analyze
		Simplify and design system using memory chips and peripheral chips for 8-bit 8085 microprocessor.	Create
PC239EE	Signals & Systems	Classify and analyze the continuous time signals and discrete time signals and systems..	Understand
		Generate discrete time signals through sampling process and reconstruct them.	Apply
		Determine the responses of continuous and discrete-time systems which are represented by differential equations and difference equations	Understand
		Analyze continuous time systems with the help of Laplace transform and discrete time system with Z-transform	Analyze
		Apply convolution, correlation operations on continuous and discrete time signals	Apply
		Analyze the continuous and discrete-time systems in frequency domain with the help of Fourier series and Fourier Transform.	Analyze
PE101EE	Electrical Distribution System	Understand the concept of different factors used in design of distribution systems	Understand
		Analyze load characteristics, rate structure & types of Distribution Transformers	Analyze

		Analyze and Solve Sub-Transmission lines and Various substation Bus schemes with multiple feeders.	Analyze
		Analyze the design considerations of Distribution systems	Analyze
		Solve voltage drop , power loss calculations & justify placement of capacitor in distribution system	Apply
		Design the optimal locations and ratings of shunt capacitors and Formulate Distribution automation like SCADA	Create
PE 103EE	Introduction to Electric Vehicle	Understand the basics of electric and hybrid electric vehicles, their architecture, technologies and fundamental	Understand
		Know about different energy storage technologies used for hybrid electric vehicles and their control.	Understand
		Choose a suitable drive scheme for developing an electric hybrid vehicle depending on resources	Create
		Design the components and their sizing and the power electronics devices used in hybrid electric vehicle	Create
		Understand the maintenance of the electrical vehicle.	Understand
		Understand the basic components of the EV and their design.	Understand
PE265EE	Power Electronics Lab	Classify and design different triggering circuits of SCR and MOSFET.	Create
		Analyze different commutation circuits of SCR	Analyze
		Explain and make use of controlled rectifiers to control the speed of DC motors	Apply
		Explain the applications of cyclo-converters and AC voltage controllers	Apply
		Analyze Chopper circuits	Analyze
		Design and Simulate different power electronics circuits using MATLAB software	Create
PE263EE	Electrical Circuits Lab	Evaluate the time response and frequency response character sties of R,L, C Series and parallel circuits	Evaluate
		Simplify the complicated circuits using Thevenin's, Norton's and Superposition theorems.	Analyze
		Examine various parameters of a two-port network.	Analyze

		Develop code to obtain transient analysis of electrical circuits using spice	Apply
		Evaluate the three phase power of balanced loads	Evaluate
		Analyze the networks from a given transfer function	Analyze
PE264EE	Control Systems Lab	Understand Performance of P, PI and PID Controllers.	Understand
		Develop PLC programs for certain applications.	Apply
		Make use of the knowledge of Data acquisition system and Industrial process control in real world.	Apply
		Develop transfer function of various control system plants practically by conducting the experiments.	Apply
		Design and Simulate the Programming and control system concepts using MATLAB.	Create
		Design of lag and lead compensation by using Networks.	Create

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VII Semester

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PC701EE	Power System Operation and Control	Solve load flow by appropriate modeling of the given power system and formulation of Y bus.	Apply
		Evaluate generation mix for economic operation with and without transmission losses.	Evaluate
		Explain load frequency control and estimate the frequency deviation through modeling.	Understand
		Analyse and describe different types of power system stability and establish SSSL.	Analyse
		Identify various methods of voltage control and study the reactive power compensation.	Apply
		Design the railway steel bridges and bridge bearings	Create
PC702EE	Electric Drives and Static Control	Define Steady state analysis and to control speed torque characteristics and closed loop operation of DC motors.	Remember
		Examine the characteristics of different DC Motors.	Analyse
		Classify single quadrant, four quadrant operations and braking methods of Dc Drives.	Understand
		Construct and evaluate the different types of slip power recovery schemes, Scherbius and Kramer drives.	Apply and Evaluate
		Apply different topologies to Power electronic drives.	Apply
		Modify Power electronic circuits according to real time applications.	Create
PC703EE	Electric Machine Design	Classify electrical engineering materials	Understand
		Choose the materials to be used in an electrical equipment	Apply
		Examine the effect of various parameters on performance of electrical machines and Compare.	Evaluate
		Create a basic dimensional design of an electrical machine , given salient parameters.	Create
		Apply principles for a magnetic and a heating	Evaluate

		circuit to assess MMF and heat flow	
		Classify use of software for developing computerized design of machines	Create
OE775ME	Entrepreneurship	Explain the economic growth and relate the types of enterprises in the Industrial Environment.	Understand
		Identify the characteristics of entrepreneurs, environmental influence and source of ideas	Apply
		Analyze the market, finance and technology for project formulation,.	Analyze
		Evaluate the projects using CPM, PERT techniques and assess the tax burden.	Evaluate
		Explain the leadership and motivational models for entrepreneurship development.	Understand
		Explain the Time Management and its various approaches for Entrepreneurship development..	Understand
OE781CE	Road Safety Engineering	Demonstrate about road accidents and its study objectives. Prepare accident investigation reports and database based on data collected.	Understand
		Apply design principles for roadway geometrics improvement with various types of traffic safety appurtenances/tools	Apply
		Explain the road safety design operations, counter measures & characteristics to manage traffic including incident management	Understand
		Illustrate the concept of Road Safety Auditing its principles, procedures and code of good practice and checklists	Understand
		Explain about design and working principles of road signs and traffic signals	Understand
		Describe applications of ITS in effectively managing the traffic incidents.	Understand
PC751EE	Electrical Simulation Lab	Compose (Write) MATLAB code using some basic commands.	Create
		Develop MATLAB code for analyzing power system network by obtaining line parameters, Z, Y matrices, and Economics of power systems	Apply
		Simulate the concepts of Electrical Circuits, to design a led, lag, led and lag compensator and obtain the characteristics by Control Systems and interpret data.	Create
		Demonstrate (Determine) the knowledge of programming environment, compiling,	Evaluate

		debugging, linking and executing variety of programs in MATLAB.	
		Demonstrate ability to develop Simulink models for various electrical systems.	Apply
		Validate simulated results from programs/Simulink models with theoretical calculations.	Apply
PC752EE	Microprocessor and Microcontroller Lab	Adapt the knowledge of Architecture of 8086 and 8051, writing assembly language programming for different applications.	Create
		Explain types of microcontrollers and their applications.	Understand
		Develop a write programs to run on 8086 microprocessor based systems.	Apply
		Define the techniques for faster execution of instructions, improve speed of operations and enhance performance of microprocessors.	Remember
		Interpret the difference between Microprocessors and Microcontrollers.	Evaluate
		Simplify and design system using memory chips and peripheral chips for 16-bit 8086 microprocessor.	Create
PW761EE	Project Work-I	Rephrase the basic concepts of electrical engineering and discover the implementation	Analyse
		Develop the design and analysis of a particular problem in project	Apply
		Formulate the programming and interpret the project	Create
		Develop the hardware	Create
		Perceive the practical knowledge within the chosen area of technology for project development	Evaluate
		Evaluate different solutions based on economic and technical feasibility	Create
PW762EE	Summer Internship	Select the task or realize a prespecified target, with limited scope, rather than taking up a complex task and leave it.	Remember
		Outline the alternate viable solutions for a given problem and evaluate these alternatives with reference to pre-specified criteria.	Understand
		Choose the selected solution and document the same.	Apply

		Examine with industrial experts to familiarize the work culture and ethics of the industry.	Analyse
		Determine and enhance the confidence while communicating with industry engineers.	Evaluate
		Design/develop a small and simple product in hardware or software.	Create

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