



METHODIST COLLEGE OF ENGINEERING AND TECHNOLOGY

Department of Electrical and Electronics Engineering

Course Outcomes

AY: 2018-19

IV Semester

| Course Code | Course Name | Course Outcomes | Taxonomy |
|--------------------|-------------------------|--|-----------------|
| PC401EE | ELECTRICAL CIRCUITS -II | Apply Fourier series representation to electrical networks | Apply |
| | | Evaluate of Laplace transform of common time functions and electrical networks | Evaluate |
| | | Explain given electrical circuits in terms of ABCD, Z, Y & h- Parameter model and solve the circuits | Evaluate |
| | | Analyse the Electrical Circuits with the concept of Network topology | Analyze |
| | | Classify different types of network functions | Understand |
| | | Synthesize the RL and RC circuits | Create |
| PC402EE | ELECTRICAL MACHINES-I | Identify different parts of a DC machine & understands its operation | Understand |
| | | Operation of the transformers in the energy conversion process. | Analyze |
| | | Carry out different testing methods to predetermine the efficiency of DC machines | Create |
| | | Understand different excitation and starting methods of DC machines | Evaluate |
| | | Apply different voltage and speed control methods a DC machines | Apply |
| | | Identify different parts of a DC machine & understands its operation | Understand |
| PC403EE | POWER SYSTEMS-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 |

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| PC404EE | POWER ELECTRONICS | Identify and examine different power semiconductor switching devices and to draw its characteristics. | Analyze |
| | | Illustrate the various power switching devices, characteristics and applications. | Understand |
| | | Design different types of power electronic converters, choppers, AC voltage controller and Cyclo-Converter. | Create |
| | | Determine and identify the characteristic points of power electronics devices. | Evaluate |
| | | Find the performance of power electronic devices. | Remember |
| BS401MT | MATHEMATICS-IV | Solve non linear equations, system of linear equations and ordinary differential equations numerically. | Apply |
| | | Evaluate certain types of improper integrals. | Evaluate |
| | | Find Fourier transforms, Fourier Sine, Cosine Transforms, Fourier Integrals of functions | Remember |
| | | Solve problems of F, Z-transforms | Apply |
| | | Apply various probability distributions to solve practical problems, to estimate unknown parameters of populations and apply the tests of hypotheses. | Apply |
| | | Perform a regression analysis and to compute and interpret the coefficient of correlation. | Understand |
| HS401BM | MANAGERIAL ECONOMICS & ACCOUNTANCY | Understand the responsibility of a manager and fundamental concepts of Managerial Economics. | Understand |
| | | Understand demand analysis and determinants of demand. | Understand |
| | | Analyze production & markets and compute the future sales level. | Analyse |
| | | Understand the features, merits, uses & limitations of Pay back , ARR, NPV, PI & IRR methods of capital budgeting. | Understand |
| | | Understand the Principles of accounting and prepare Journal, Ledger, Trial balance, manufacturing | Understand |
| | | Understand the responsibility of a manager and fundamental concepts of Managerial Economics. | Understand |
| PC452EE | CAED 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 | understand |

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| | | appliances | |
| | | To acquire knowledge on various Electrical Engineering software | Evaluate |

Coordinator

Head of the Department



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VI Semester

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|-------------|--------------------------------------|--|------------|
| PC601EE | ELECTRICAL MACHINES-III | Identify different parts and operation of induction motors and specify their functions | Understand |
| | | Understand the characteristics and carry out different testing methods of induction motors | Understand |
| | | Identify different parts and operation of Synchronous generator | Apply |
| | | Understand the necessity and working of parallel operation of synchronous generator and operation of synchronous motor | Apply |
| | | Identify types of single phase motors and special motors | Understand |
| | | Identify different parts and operation of induction motors and specify their functions | Understand |
| PC602EE | MICROPROCESSORS AND MICROCONTROLLERS | 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 |
| PC603EE | SWITCHGEAR AND PROTECTION | Understand the operations of various types of circuit breakers and their ratings. | Understand |
| | | Understand the unit protection and over voltage protection of different apparatus in power system | Understand |
| | | Explain the working of different types of switchgear equipments like circuit breakers and relays | Apply |
| | | Elucidate various protection schemes of various power system components like alternators, transformers and bus-bars | Apply |
| | | To get the thorough knowledge on concept of | Analyze |

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| | | earthing and grounding. | |
| | | Understand the operations of various types of circuit breakers and their ratings. | Understand |
| PC604EE | RENEWABLE ENERGY TECHNOLOGIES | Understand Knowledge of working principle of various energy systems | Remember |
| | | Capable to carry out basic design of renewable energy system | Apply |
| | | Analyze the environmental and cost economics of renewable energy sources in comparison with fossil fuels | Analyze |
| | | Explain the concepts of Non-renewable and renewable energy systems | Applying |
| | | Outline utilization of renewable energy sources for both domestic and industrial applications | Understand |
| | | Knowledge of working principle of various energy systems | Understand |
| PE602EE | ELECTRIC DISTRIBUTION SYSTEM | 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 |
| | | Compute voltage drop , power loss calculations & justify placement of capacitor in distribution system | Analyze |
| | | Formulate Distribution automation like SCADA & Automatic meter reading(AMR) | Formulate |
| | | Justify the placement of feeders | Evaluate |
| OE 601 ME | INDUSTRIAL ROBOTICS | Understand the mechanical structure of industrial robots, operational workspace, various types of grippers, design considerations. | Understand |
| | | Compare the various types of grippers, sensors and Analyze the best and economical sensors for specific applications. | Analyze |

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| | | Analyze forward and inverse kinematics problems for serial and parallel robots. | Apply |
| | | Understand the techniques of robot vision, various programming languages and apply these techniques to build robots. | Apply |
| | | Understand about RGV and AGV , safety considerations and economic analysis of robots | Understand |
| | | Categorize an industrial robot for a given purpose economically. | Analyze |
| PC651EE | ELECTRICAL MACHINES-II LAB | Verify the theory and working of electrical machines through laboratory experimental work. | Understand |
| | | Make circuit diagram connections to perform experiments, measure, analyze the observed data to come to a conclusion. | Evaluate |
| | | Organize reports based on performed experiments with effective demonstration of diagrams and characteristics/graphs. | Analyze |
| | | Determine the different parameters of a three-phase alternator and its regulation | Understand |
| | | Determine the different parameters of a three-phase synchronous motor as well as its 'V' and 'inverted V' curves | Analyze |
| | | Compare the performance characteristics of different electrical machines. | Create |
| PC653EE | 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 |
| PC652EE | DSP LAB | Compute and write MATLAB code to generate basic waves | Apply |

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| | | Compute and write MATLAB code to apply sampling theorem, to obtain convolution and compute DFT and FFT | Apply |
| | | Compute and write MATLAB code to design FIR and IIR filters | Create |
| | | Compute and write MATLAB code to obtain convolution of sequences | Apply |
| | | Compute and write MATLAB code to perform basic operations on basic waves | Apply |
| | | Compute and write MATLAB code to obtain Impulse response | Apply |
| SI671EE | SUMMER INTERNSHIPS | Design a small and simple product in hardware or software | Create |
| | | Complete the task or realize a prespecified target, with limited scope, rather than taking up a complex task and leave it | Apply |
| | | Learn to find alternate viable solutions for a given problem and evaluate these alternatives with reference to prespecified criteria | Evaluate |
| | | Implement the selected solution and document the same | Create |
| | | Integrate different aspects of learning with reference to real life problems. | Understand |
| | | Enhance the confidence of the students while communicating with industry engineers | Understand |

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|-------------|---|--|------------|
| PE451EE | UTILIZATION OF ELECTRICAL ENGINEERING | Design major utilization loads, choose suitable drive with regard to efficiency and safety | Understand |
| | | Describe different heating methods for a particular application. | Understand |
| | | Apply modern trends in electric welding processes | Analyze |
| | | Understand illumination concepts for efficient and economic lightning in industries streets and offices. | Analyze |
| | | Analyze electric traction motors with wide range of speed control | Analyze |
| | | Design major utilization loads, choose suitable drive with regard to efficiency and safety | Apply |
| PE471EE | RENEWABLE ENERGY SOURCES | List and Compare the various forms of non conventional energy resources and availability of all sources | Understand |
| | | Explain the solar energy applications and calculations of solar energy | Understand |
| | | Analyze how wind energy can be tapped from the nature and it's calculations | Analyze |
| | | Outline the Geothermal & Biomass, its mechanism of production of energy and its applications | Understand |
| | | Illustrate the concepts of Wave, Tidal energy & OTEC | Understand |
| | | Analyze the environmental aspects of renewable energy resources. | Analyze |
| ME 472 | INDUSTRIAL ADMINISTRATION & FINANACIAL MANAGEMENT | Understand types of various business organizations, organization structures, and functions of management and the importance of plant layouts. | Understand |
| | | Understand and Apply the concept of Work Study (method study and time study) techniques for calculation of standard time in a plant, and the concept of performance rating factors & types of | Apply |

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| | | ratings. | |
| | | Evaluate whether the quality of a product or process in a plant. | Evaluate |
| | | Understand and Apply the optimization techniques like Linear Programming, Assignment and Project management & Material Management techniques for optimum utilization of the resources. | Apply |
| | | Know the different terminology used in Financial Management, understand and apply break even analysis and different techniques of capital budgeting involved in running an industrial organization. | Apply |
| | | Understand the concepts of Quality control, process control, material control, Production Planning control and by use of control charts | Understand |
| CE452 | DISASTER MITIGATION MANAGEMENT | Attain knowledge on various types, stages, phases in disaster with international & national policies & programmes with reference to the disaster reduction | Understand |
| | | Understand various types of natural disaster, their occurrence, Effects, Mitigation and Management Systems in India | Understand |
| | | Understand different types of manmade disasters, their occurrence, Effects, Mitigation and Management Systems in India | Understand |
| | | Explain the utility of geographic information systems (GIS), Remote sensing technology in all phases of disaster mitigation and management | Understand |
| | | Understand on the concepts of risk, vulnerability, warning and forecasting methods in disaster management | Understand |
| | | Understand the role of education and training in disaster prevention. | Understand |
| EE481 | DIGITAL SIGNAL PROCESSING LAB | Compute and write MATLAB code to generate basic waves | Apply |
| | | Compute and write MATLAB code to apply sampling theorem, to obtain convolution and compute DFT and FFT | Apply |

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| | | | |
| | | Compute and write MATLAB code to design FIR and IIR filters | Create |
| | | Compute and write MATLAB code to obtain convolution of sequences | Apply |
| | | Compute and write MATLAB code to perform basic operations on basic waves | Apply |
| | | Compute and write MATLAB code to obtain Impulse response | Apply |
| EE 482 | PROJECTS | 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 |
| EE 483 | SEMINARS | Demonstrate the ability to synthesize and apply the knowledge and skills acquired in the academic program to real-world problems | Understand |
| | | Evaluate different solutions based on economic and technical feasibility for the needs of society | Evaluate |
| | | Effectively communicate the selected technology topics to excel in the career chosen. | Create |
| | | Demonstrate effective written and oral communication skills | Understand |
| | | Explore the industry practices | Evaluate |
| | | Enhance practical and professional skills. | Evaluate |

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