

Shree Mahavir Education Society's
Sanghavi College of Engineering, Nashik
Department of Electrical Engineering
Course Outcomes

Third Year (2019 Pattern) : Semester-I

Course code	Course Name	Course Outcomes(Cos)
303141	Industrial and Technology Management	<p>CO1: Differentiate between different types of business organizations and discuss the fundamentals of economics and management.</p> <p>CO2: Explain the importance of technology management and quality management.</p> <p>CO3: Explain the importance of IPR and role of Human Resource Management.</p> <p>CO4: Understand the importance of Quality and its significance.</p> <p>CO5: Describe the characteristics of marketing & its types and overview of financial Management.</p> <p>CO6: Discuss the qualities of a good leader and road map to Entrepreneurship</p>
303142	Power Electronics	<p>CO1: Develop characteristics of different power electronic switching devices.</p> <p>CO2: Reproduce working principle of power electronic converters for different types of loads.</p> <p>CO3: Choose the appropriate converter for different applications.</p>
303143	Electrical Machines-II	<p>CO1: Learn construction, working principle of three phase Synchronous Machines, Induction Motors, A.C. Series Motor and Special Purpose Motors.</p> <p>CO2: Understand characteristics of three phase Synchronous Machines, Induction Motors, A.C. Series Motor and Special Purpose Motors.</p> <p>CO3: Select the above machines in Power System, industrial, household & Military Engineering applications.</p> <p>CO4: Testing of machines to evaluate the performance through experimentation.</p>
303144	Electrical Installation, Design and Condition Based Maintenance	<p>CO1: Classify different types of distribution supply system and determine economics of distribution system. compare and classify various substations, bus-bars and Earthing systems.</p> <p>CO2: Demonstrate the importance and necessity of maintenance.</p> <p>CO3: Analyse and test different condition monitoring methods.</p> <p>CO4: Carry out estimation and costing of internal wiring for</p>

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303144	Electrical Installation, Design and Condition Based Maintenance	residential and commercial installations. CO5: Apply electrical safety procedures.
303145A	Elective-I: Advanced Microcontroller and Embedded System	CO1: Explain architecture of PIC 18F458 microcontroller, its instructions and the addressing modes. CO2: Use Ports and timers for peripheral interfacing and delay generation. CO3: Interface special and generate events using CCP module. CO4: Effectively use interrupt structure in internal and External interrupt mode. CO5: Effectively use ADC for parameter measurement and also understand LCD interfacing. CO6: Use Serial Communication and various serial communication protocols.
303145B	Elective-I: Digital Signal Processing	CO1: Analyse discrete time signals and systems. CO2: Construct frequency response of LTI system using Fourier Transform. CO3: Design and realize IIR and FIR filters. CO4: Apply concepts of DSP in applications of electrical engineering
303146	Seminar	CO1: Relate with the current technologies and innovations in Electrical engineering. CO2: Improve presentation and documentation skill CO3: Apply theoretical knowledge to actual industrial applications and research activity. CO4: Communicate effectively.
303147A	Audit Course V: Energy Storage System	CO1: Explain and differentiate various types of energy storage for suitable applications CO2: Understand battery recycling techniques
303147B	Audit Course V: Start-up and Disruptive Innovations	CO1: Describe role of incubation for Startup and recent national policy. CO2: Identify various types of Startups. CO3: Explain impacts of disruptive innovation and Differentiate between disruptive innovation and disruptive technology

Third Year (2019 Pattern) : Semester-II

303148	Power System-II	CO1: Solve problems involving modelling, design and performance evaluation of HVDC and EHVAC power transmission lines. CO2: Calculate per unit values and develop Y bus for solution power flow equations in power transmission networks
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303148	Power System-II	CO3: Calculate currents and voltages in a faulted power system under both symmetrical and asymmetrical faults, and relate fault currents to circuit breaker ratings.
303149	Computer Aided Design of Electrical Machines	CO1: Summarize temperature rise, methods of cooling of transformer and consider IS 2026 in transformer design. CO2: Design the overall dimensions of the transformer. CO3: Analyze the performance parameters of transformer. CO4: Design overall dimensions of three phase Induction motor CO5: Analyze the performance parameters of three phase Induction motor. CO6: Implement and develop computer aided design of transformer and induction motor
303150	Control System Engineering	CO1: Construct mathematical model of Electrical and Mechanical system using differential equations and transfer function and develop analogy between Electrical and Mechanical systems. CO2: Determine time response of systems for a given input and perform analysis of first and second order systems using time domain specifications. CO3: Investigate closed loop stability of system in s-plane using Routh Hurwitz stability criteria and root locus. CO4: Analyze the systems in frequency domain and investigate stability using Nyquist plot and Bode plot CO5: Design PID controller for a given plant to meet desired time domain specifications
303151A	Elective II: IoT and Its Applications in Electrical Engineering	CO1: Build circuits for signal acquisition and conditioning CO2: Experiment with sensors and actuators and choose the right sensor for application CO3: Determine the performance of IoT based automated process CO4: Design and develop IoT based applications
303151B	Elective-II: Electric Mobility	CO1: Analyze the concepts of Hybrid and Electric vehicles. CO2: Describe the different types of energy storage systems CO3: Comprehend the knowledge of the battery charging and management systems. CO4: Classify the different mode of operation for hybrid vehicle. CO5: Apply the different Charging standards used for electric vehicles. CO6: Differentiate between Vehicle to home & Vehicle to grid concepts.

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303151C	Elective-II: Cybernetics Engineering	<p>CO1: Define cybernetics in terms of control and how is it used in controlling technical, biological, and other processes.</p> <p>CO2: Understand various matrix operations.</p> <p>CO3: Describe different types of control system configurations and their applications.</p> <p>CO4: Carry out mathematical modeling and simulation of simple processes.</p> <p>CO5: Appreciate the essential requirements for computers and computer equipment that are intended to operate in dedicated applications and industrial environments.</p> <p>CO6: Know intelligent optimization techniques.</p>
303151D	Elective-II Energy Management	<p>CO1: Describe BEE Energy policies, Energy ACT.</p> <p>CO2: List and apply demand side management measures for managing utility systems.</p> <p>CO3: Explore and use simple data analytic tools.</p> <p>CO4: Use various energy measurement and audit instruments.</p> <p>CO5: Evaluate economic feasibility of energy conservation projects.</p> <p>CO6: Identify appropriate energy conservation methods for electric and thermal utilities.</p>
303152	Internship	<p>CO1: Understand the working culture and environment of the Industry and get familiar with various departments and practices in the industry.</p> <p>CO2: Operate various meters, measuring instruments, tools used in industry efficiently and develop technical competence.</p> <p>CO3: Apply internship learning in other course completions and final year project management, i.e. topic finalization, project planning, hardware development, result interpretations, report writing, etc.</p> <p>CO4: Create a professional network and learn about ethical, safety measures, and legal practices.</p> <p>CO5: Appreciate the responsibility of a professional towards society and the environment.</p> <p>CO6: Identify career goals and personal aspirations.</p>
303153A	Audit Course VI: Ethical Practices for Engineers	<p>CO1: Understand for their professional responsibilities as Engineers.</p> <p>CO2: Recognize and think through ethically significant problem situations that are common in Engineering.</p> <p>CO3: Evaluate the existing ethical standards for Engineering Practice</p>

Course code	Course Name	Course Outcomes(Cos)
303153B	Audit Course VI: Project Management	CO1; Elaborate importance of project management and its process. CO2: Learn about the role of high performance teams and leadership in project management.