Electrical Engineering Department

Course Outcomes (COs)

T.E. Electrical Engineering (2019 Course)

Course Code: 303141

Name of Course: Industrial and Technology Management

C301.1	Differentiate between different types of business organizations and discuss the fundamentals of economics and management.
C301.2	Explain the importance of technology management and quality management.
C301.3	Interpret the importance of IPR and role of Human Resource Management.
C301.4	Distinguish the importance of Quality and its significance.
C301.5	Describe the characteristics of marketing & its types and overview of financial Management.
C301.6	Critique the qualities of a good leader and road map to Entrepreneurship.

Course Code: 303142

Name of Course: Power Electronics

C302.1	Analysis of dynamic and static characteristics of SCR,TRIAC using different triggering circuit
C302.2	Analysis of chopper circuit with different loading
C302.3	Analysis of single phase full and half controlled converter (AC-DC) using R,RL load
C302.4	Analysis of three phase full and half controlled converter (AC-DC) using R,RL load
C302.5	Analysis of single phase DC-AC transistor based converter
C302.6	Analysis of Three phase DC-AC transistor based converter

Course Code: 303143

Name of Course: Electrical Machines II

C303.1	Understand the construction & working principle of three phase synchronous machines
C303.2	Estimate and critique the voltage regulation of alternator by direct loading, EMF, MMF and Potier method.
C303.3	Analysis of the characteristics of 3- phases synchronous motor by varying excitation at constant mechanical load.
C303.4	Interpret the three-phase induction motor as an induction generator & performance characteristics BLDC, stepper motors.
C303.5	Analyze the performance of series motor on Ac & DC supply.
C303.6	Evaluate the equivalent circuit & performance of single-phase induction motor by testing

Course Code: 303144

Name of Course: Electrical Installation, Design & Condition Based Maintenance	
C304.1	Classify different types of distribution supply system and determine economics of distribution system. Compare and classify various substations, bus-bars and Earthing systems.
C304.2	Enlist the various equipment's used in substation & analysis of substation Earthing as per IEEE std 80-2013
C304.3	Demonstrate the single line diagram of substation and earthing system
C304.4	Analyze and test different condition monitoring methods.
C304.5	Design estimation and costing of residential and commercial installations
C304.6	Testing and evaluation of various electrical safety measures.

Course Code: 303145A	
Name of Course: Advanced Microcontroller and Embedded System	
C305.1	Explain architecture of PIC 18F458 microcontroller, its instructions and the addressing modes.
C305.2	Use Ports and timers for peripheral interfacing and delay generation.
C305.3	Use CCP module for different applications like compare, capture and PWM.
C305.4	Explain interrupt structure for internal and external interrupts.
C305.5	Use ADC for parameter measurement and LCD interfacing
C305.6	Make use of Serial Communication and various serial communication protocols.

Course Code: 303145B	
Name of Course: Digital Signal Processing	
C306.1	Analyze discrete time signals and systems.
C306.2	Construct frequency response of LTI system using Fourier Transform.
C306.3	Analyze the DT signals with Z transform, DTFT and DFT
C306.4	Design and realize IIR and FIR filters.
C306.5	Apply concepts of DSP in applications of electrical engineering.

Course Code: 303146	
Name of Course: Seminar and Technical communication	
C307.1	Relate with the current technologies and innovations in Electrical engineering.
C307.2	Improve presentation and documentation skill
C307.3	Apply theoretical knowledge to actual industrial applications and research activity.
C307.4	Communicate effectively in terms of writing and speech

Course Code: 303148	
Name of Course: Power System-II	
C308.1	Analyze the performance of long transmission lines using ABCD parameters.
C308.2	Compute the performance of EHVAC lines.
C308.3	Analyze the load flow of a give power system using the professional software.
C308.4	Analyze the symmetrical faults in power systems.

C308.5	Analyze LG, LL, LLG fault in the given power systems.
C308.6	Outline the given HVDC system.

Course Code: 303149	
Name of Course: Computer Aided Design of Electric Machines	
C309.1	Calculation of temperature rise, methods of cooling of transformer and consider IS 2026 in transformer design.
C309.2	Design the overall dimensions of the transformer for a given specifications
C309.3	Analyze the performance parameters of transformer.
C309.4	Design overall dimensions of three phase Induction motor.
C309.5	Analyze the performance parameters of three phase Induction motor for a given specifications
C309.6	Implement and develop computer aided design of transformer and induction motor.

Course Code: 303150	
Name of Course: Control System Engineering	
C310.1	Construct mathematical model of Electrical and Mechanical system using differential equations and transfer function and develop analogy between Electrical and Mechanical systems.
C310.2	Determine time response of systems for a given input and perform analysis of first and second order systems using time domain specifications.
C310.3	Investigate closed loop stability of system in s-plane using Routh Hurwitz stability criteria and root locus.
C310.4	Draw the Bode & Nyquist plot for a given system and determine the phase & Gain margin (for 4&5)
C310.5	Design PID controller for a given plant to meet desired time domain specifications

Course Code: 303151	
Name of Course: Electric Mobility	
C311.1	Analyse the concepts of Hybrid and Electric vehicles.
C311.2	Describe the different types of energy storage systems
C311.3	Comprehend the knowledge of the battery charging and management systems.
C311.4	Classify the different mode of operation for hybrid vehicle.
C311.5	Apply the different Charging standards used for electric vehicles.

Course Code: 303152	
Name of Course: Internship	
C312.1	Illustrate the working culture and environment of the industry and get familiar with various departments and practices in the industry.
C312.2	Operate various meters, measuring instruments, tools used in industry efficiently and develop technical competence.
C312.3	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.
C312.4	Create a professional network and learn about ethical, safety measures, and legal practices.
C312.5	Appreciate the responsibility of a professional towards society and the environment.