

Amrutvahini College of Engineering, Sangamner

Department of Electrical Engineering

Records of course outcomes (Cos) of all courses

Course Code	Course Title	Course Outcome Number	Course Outcome
TE Electrical Engineering (Semester-VI)			
	Power System-II	C308.1	Comprehend the ABCD Parameters of Transmission Line and Analyze the Performance of Transmission Line
		C308.2	Recognise the Corona phenomenon, radio interference and analyze the Corona loss and power handling capacity of Line.
		C308.3	Identify the of PU values of different electric power system components and Analyze the transmission line performance by using Z Bus, Y Bus and Load flow analysis methodologies.
		C308.4	Determine the different currents and voltages of line under symmetrical fault condition and relate fault currents to circuit breaker ratings.
		C308.5	Differentiate the various types of unsymmetrical faults in transmission line and Evaluate the Unsymmetrical Fault condition of Line by using Sequence components and sequence networks.
		C308.6	Understand and Analyze the construction, operation and performance of various HVDC plants with its merits and demerits.
	Computer Aided Design of Electrical Machines	C309.1	Analyze heating & cooling curve of transformer, Describe construction of transformer, Explain specification of transformer.
		C309.2	Derive the output equation of transformer, Design of transformer.
		C309.3	Determine the performance parameter of transformer, Develop the flow chart for transformer design.
		C309.4	Design of AC winding, Derive output equation of induction motor, explain ranges of Specific magnetic and electric loading
		C309.5	Design of Rotor of induction motor, Select suitable combination of stator and rotor slot, select length of airgap.
		C309.6	Analyze Performance parameter of induction motor, Calculate short and continuous duty of electrical machine
	Control System Engineering	C310.1	UNDERSTAND & APPLY basic of control system concept in Modelling, Signal flow graph, Block reduction tech. Experimental determination of various plant in laboratory.
		C310.2	USING various standard test signal explain time domain specification in first order & second order system.
		C310.3	ELABORATE types of stability in control system and check stability of system using root locus method & Hurwitz stability.
		C310.4	DIFFERENTIATE time and Frequency domain system and ANALYSIS stability using Polar and Nyquist plot and check stability using software.
		C310.5	ANALYSIS stability using Bode plot and check stability using software.
		C310.6	BASIC concept & DESIGN of PID controller and its application in Control System Engineering

	Elective-II: Electric Mobility	C311.1	Analyse the concepts of Hybrid and Electric vehicles
		C311.2	Describe the different types of energy storage systems
		C311.3	Understand 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
		C311.6	Differentiate between Vehicle to home & Vehicle to grid concepts
	Internship	C312.1	Understand 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.
		C312.6	Identify career goals and personal aspirations.

Course Code	Course Title	Course Outcome Number	Course Outcome
BE Electrical Engineering (Semester-VII)			
	Power System Operation and Control	C401.1	Identify and analyse the dynamics of power system and suggest means to improve stability of system.
		C401.2	Comprehend the effect of reactive power on Power system and suggest the suitable means of reactive power management.
		C401.3	Selection of appropriate FACTS devices
		C401.4	Analyse the generation-load balance in real time operation and its effect on frequency and develop automatic control strategies with mathematical relations
		C401.5	Formulate objective functions for optimization tasks such as unit commitment and Economic load dispatch and get solution using computational techniques.
		C401.6	Evaluate reliability indices of Power system
	Advanced Control System	C402.1	Develop block diagram of PLC and explain the working.
		C402.2	Classify input and output interfacing devices with PLC.
		C402.3	Execute, debug and test the programs developed for digital and analog operations.
		C402.4	Applications of PLC for developing the industrial systems
		C402.5	Develop architecture of SCADA and explain the importance of SCADA in critical infrastructure.
		C402.6	Describe various SCADA protocols along with their architecture and Observe development of various industrial applications using PLC and SCADA.
	403143A: PLC and SCADA	C403.1	To identify importance of PQ Issues
		C403.2	Estimation of PQ Monitoring

		C403.3	Analyse various causes and effect of PQ problems
		C403.4	Analyse PQ parameter and carry out of PQ analysis
		C403.5	Select cost effective mitigation technique for various PQ Problem
		C403.6	Use IEEE standard for harmonic compliance
	Electric and Hybrid Vehicle	C404.1	Review history, Social and environmental importance of Hybrid and Electric vehicles.
		C404.2	Describe the performance and selection of energy storage systems
		C404.3	Analyze battery management system
		C404.4	Distinguish between the performance and architecture of various drive trains.
		C404.5	Describe the different Instrumentation and Control used for electric vehicles
		C404.6	Differentiate between Vehicle to Home, Vehicle to Vehicle and Vehicle to Grid energy systems concepts.
	Project Stage I	C405.1	Recognize the importance of digital control system.
		C405.2	Evaluate pulse transfer function..
		C405.3	Analyze digital controllers.
		C405.4	Convert system in state space format.
		C405.5	Solve state equation and Design observer for system
		C405.6	To investigate stability analysis of control system.