AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER

Department of Electrical Engineering

Course Outcomes(CO)

Second Year – 2019 Course			
Course Code	**Course Name**	**Course Outcomes**	
Semester - I			
(207006)	**Engineering Mathematics-III**	C206.1	**Solve** higher order linear differential equation using appropriate techniques to model and **analyze** electrical circuits.
		C206.2	**Apply** Integral transforms such as Laplace transform, Fourier transform and Z-Transform to solve problems related to signal processing and control systems.
		C206.3	**Apply** Statistical methods like correlation, regression and Probability theory as applicable to **analyze** and interpret experimental data related to energy management, power systems, testing and quality control.
		C206.4	Perform Vector differentiation and integration, **analyze** the vector fields and apply to wave theory and electro-magnetic fields.
		C206.5	**Analyze** Complex functions, conformal mappings, and perform contour integration in the study of electrostatics, signal and image processing.
(203141)	**Power Generation Technologies**	C241.1	**Identify** components and elaborate working principle of conventional power plants
		C241.2	**Recognize** the importance and opportunities of renewable energies
		C241.3	**Calculate and control** power output of wind solar, and hydro power plant.
		C241.4	**Describe** process of grid interconnection of distributed generation and requirements
		C241.5	**Interpret** the environmental and social impact of various generation technologies
(203142)	**Material Science**	C242.1	**Discuss/ Describe** classification,

			properties and characteristics of different electrical engineering materials.
		C242.2	**State** various applications measuring methods for parameters of different classes of electrical engineering materials.
		C242.3	**Solve** simple problems based on dielectric, magnetic and conducting materials.
		C242.4	**Apply** knowledge of Nano-technology to electrical engineering..
		C242.5	**Execute** tests on dielectric, insulating, magnetic, conducting, resistive materials as per IS to decide the quality of thematerials.
		C242.6	**Create** learning resource material ethically to demonstrate self learning leading to lifelong learning skills and usage of ICT/ online technology through collaborative/active learning activities
(203143)	**Analog and Digital Electronics**	C243.1	**Design** logical, sequential and combinational digital circuit using K-Map.
		C243.2	**Demonstrate** different digital memories and programmable logic families.
		C243.3	**Apply and analyze** applications of OPAMP in open and closed loop condition.
		C243.4	**Design** uncontrolled rectifier with given specifications
(203144)	**Electrical Measurements and Instrumentation**	C244.1	**Define** various characteristic and **classify** measuring instruments along with range extension techniques
		C244.2	**Apply** measurement techniques for measurement of resistance, inductance and capacitance
		C244.3	**Describe** construction, working principle of electrodynamo type and induction type instruments for measurement of power
		C244.4	**Describe** construction, working principle of induction type instruments for measurement energy.

		C244.5	Make **use** of CRO for measurement of voltage, current and frequency
		C244.6	**Classify** transducer and **apply** it for measurement of physical parameters in real time
(203150)	**Applications of Mathematics in Electrical Engineering**	C250.1	**Apply** fundamentals of mathematics in solving electrical engineering problem
		C250.2	**Analyze** complex electrical engineering problem using mathematical techniques.
		C250.3	**Implement** program and simulation for problems in electrical engineering.
		C250.4	**Demonstrate** self-lifelong learning skills with applications of mathematics in electrical engineering through software.
(203151)	**Soft Skills**	C251.1	Do SWOC **analysis.**
		C251.2	**Develop** presentation and take part in group discussion.
		C251.3	**Understand** and implement etiquette in workplace and in society at large.
		C251.4	**Work** in team with team spirit.
		C251.5	**Utilize** the techniques for time management and stress management.
(203152)	**Audit Course III**	C252.1	**Differentiate** between types of solar Concentrators
		C252.2	**Apply** software tool for solar concentrator
		C252.3	**Design** different types of Solar collectors and balance of plant
Semester- II			
(203145)	**Power System I**	C245.1	**Recognize** different patterns of load curve and **calculate** associated different factors with it and tariff
		C245.2	**Draft** specifications of electrical equipment in power station
		C245.3	**Design** electrical and mechanical aspects in overhead transmission and underground cables
		C245.4	**Evaluate** the inductance and capacitance of different transmission line configurations
		C245.5	**Analyse** the performance of short and medium transmission

(203146)	**Electrical Machines I**	C246.1	**Understand** equivalent circuit of transformer & **apply** acquired knowledge to determine circuit parameters and performance by conducting test on it.
		C246.2	**Understand** various transformer connections so as to select machines for specific applications.
		C246.3	**Demonstrate** constructional details and operating principles of dc machines.
		C246.4	**Illustrate** different characteristics of dc motors and commutation process.
		C246.5	**Illustrate** constructional details, operating principle of 3 phase induction motor and determine torque & power flow in it.
		C246.6	**Analyze** performance of 3 phase induction motor by drawing circle diagram.
(203147)	**Network Analysis**	C247.1	**Calculate** current/voltage in electrical circuits using simplification techniques, Mesh, Nodal analysis
		C247.2	**Develop t**he problem solving technique for networks by application of network theorems
		C247.3	**Analyze** the response of RLC circuit with electrical supply in transient and stead state.
		C247.4	**Apply** Laplace transform to analyze behaviour of an electrical circuit.
		C247.5	**Derive formula** and solve numerical of two port network and Design of filters
		C247.6	**Apply** knowledge of network theory to find transfer function, poles and zeroes location to perform stability analysis and parallel resonance
(203148)	**Numerical Methods and Computer Programming**	C248.1	**Demonstrate** types of errors in computation and their causes of occurrence.
		C248.2	Formulate ,**Analyze &Calculate** root of algebraic and transcendental equations using various methods
		C248.3	**Apply** numerical methods for

			various mathematical problems such as interpolation, numerical differentiation, integration and ordinary differential equation.
		C248.4	**Solve** linear simultaneous equation using direct and indirect method.
		C248.5	**Develop** algorithms and write computer programs for various numerical methods.
(203149)	**Fundamentals of Microcontroller and Applications**	C249.1	**Describe** the architecture and features of various types of the microcontroller.
		C249.2	**Illustrate** addressing modes and execute programs in assembly language for the microcontroller.
		C249.3	**Write** programs in C language for microcontroller 8051.
		C249.4	**Elaborate interrupt** structure of 8051 and program to handle interrupt and ADC809
		C249.5	**Define** the protocol for serial communication and understand the microcontroller development systems.
		C249.6	**Interface** input output devices and measure electrical parameters with 8051 in real time.
(203152)	**Project Based Learning**	C252.1	**Identify, formulate, and analyze** the simple project problem.
		C252.2	**Apply** knowledge of mathematics, basic sciences, and electrical engineering fundamentals to develop solutions for the project.
		C252.3	**Learn** to work in teams, and to plan and carry out different tasks that are required during a project.
		C252.4	**Understand** their own and their team-mate's strengths and skills.
		C252.5	**Draw information** from a variety of sources and be able to filter and summarize the relevant points.
		C252.6	**Communicate** to different audiences in oral, visual, and written forms.
(203153)	**Audit Course IV**	C253.1	**design** of Solar PV system for small and large installations
		C253.2	**handle** software tools for Solar PV systems