Sanghavi College of Engineering

Department of Electrical Engineering

SEM: I **Pattern:** 2019

Course: Engineering Mathematics -III (207006)

Class: SE Electrical Engineering

Course Code	Course Outcome
207006.1	Solve higher order liner differential equation using appropriate techniques to model and analyze electrical circuits.
207006.2	Apply Integral transforms such as Laplace transform, Fourier transform and Z- transform to solve problems related signal processing and control systems .
207006.3	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.
207006.4	Perform vector differentiation and integration , analyze the vector fields and apply to wave theory and electro-magnetic fields .
207006.5	Analyze complex functions,conformal mappings and contour integration in the study of electrostatistics , signal and image processing

Sanghavi College of Engineering

Department of Electrical Engineering

SEM: I

Course: Applications of Mathematics in Electrical Engineering (203150)

Class: SE Electrical Engineering

Course Code	Course Outcome
203150.1	Apply fundamentals of mathematics in solving electrical engineering problem
203150.2	Analyze complex electrical engineering problem using mathematical techniques.
203150.3	Implement program and simulation for problems in electrical engineering.
203150.4	Demonstrate self lifelong learning skills with applications of mathematics in electrical engineering through software.

Sanghavi College of Engineering

Department of Electrical Engineering

SEM: I

Course: Soft Skill (203151)

Class: SE Electrical Engineering

Course Code	Course Outcome
203151.1	Do SWOT Analysis
203151.2	Develop presentation and take part in group discssion
203151.3	Understands and implement ettiqutte in workplace and in society at large
203151.4	Work in team with teamspirit
203151.5	Utilize the technique for time management and stress management

Sanghavi College of Engineering

Department of Electrical Engineering

SEM: I

Course: Analog And Digital Electronics (203143)

Class: SE Electrical Engineering

Course Code	Course Outcome
203143.1	Design logical, sequential and combinational digital circuit using K-Map
203143.2	Demonstrate different digital memories and programmable logic families
203143.3	Apply and analyze applications of OPAMP in open and closed loop condition
203143.4	Design uncontrolled rectifier with given specifications

Sanghavi College of Engineering

Department of Electrical Engineering

SEM: I

Course: Electrical Measurement and Instrumentation (203144)

Class: SE Electrical Engineering

Course Code	Course Outcome
203144.1	Define various characteristic and classify measuring instruments along with range extension techniques.
203144.2	Apply measurement techniques for measurement of resistance, inductance and capacitance
203144.3	Demonstrate construction, working principle of electrodynamo type and induction type instruments for measurement of power and energy.
203144.4	Make use of CRO for measurement of voltage, current and frequency.
203144.5	Classify transducer and apply it for measurement of physical parameters in real time.

Sanghavi College of Engineering

Department of Electrical Engineering

SEM: I Material Science: 203142

Course: 2019

Class: SE Electrical Engineering

Course Code	Course Outcome
203142.1	Discuss classification, properties and characteristics of different electrical engineering materials.
203142.2	State various applications measuring methods for parameters of different classes of electrical engineering materials.
203142.3	Solve simple problems based on dielectric, magnetic and conducting materials.
203142.4	Apply knowledge of Nano-technology to electrical engineering.
203142.5	Execute tests on dielectric, insulating, magnetic, conducting, resistive materials as per IS to decide the quality of the materials.
203142.6	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.

Sanghavi College of Engineering

Department of Electrical Engineering

Unitwise CO Mapping

SEM: I

Course: Power Generation Technologies(203141)

Class: SE Electrical Engineering

Course Code	Course Outcome
203141.1	Identify components and elaborate working principle of conventional power plants.
203141.2	Recognize the importance and opportunities of renewable energies
203141.3	Calculate and control power output of wind solar, and hydro power plant
203141.4	Describe process of grid interconnection of distributed generation and requirements
203141.5	Interpret the environmental and social impact of various generation technologies

Sanghavi College of Engineering

Department of Electrical Engineering

Unitwise CO Mapping

SEM: II

Course: Electrical Machine -I (203146)

Class: SE Electrical Engineering

Course Code	Course Outcome
203146.1	Evaluate performance parameters of transformer with experimentation and demonstrate construction along with specifications as per standards
203146.2	Distinguish between various types of transformer connections as per vector groups with application and to perform parallel operation of single/three phase transformers.
203146.3	Select and draft specifications of DC machines and Induction motors for various applications along with speed control methods.
203146.4	Justify the need of starters in electrical machines with merits and demerits.
203146.5	Test and evaluate performance of DC machines and Induction motors as per IS standard.

Sanghavi College of Engineering

Department of Electrical Engineering

Unitwise CO Mapping

SEM: II

Course: Fundamental of Microcontroller and Applications (203149)

Class: SE Electrical Engineering

Course Code	Course Outcome
203149.1	Describe the architecture and features of various types of the microcontroller
203149.2	Illustrate addressing modes and execute programs in assembly language for the microcontroller.
203149.3	Write programs in C language for microcontroller 8051
203149.4	Elaborate interrupt structure of 8051 and program to handle interrupt and ADC809
203149.5	Define the protocol for serial communication and understand the microcontroller development systems
203149.6	Interface input output devices and measure electrical parameters with 8051 in real time

Sanghavi College of Engineering

Department of Electrical Engineering

SEM: II

Course: Network Analysis (203147)

Class: SE Electrical Engineering

Course Code	Course Outcome
203147.1	Calculate current/voltage in electrical circuits using simplification techniques, Mesh, Nodal analysis and network theorems
203147.2	Analyze the response of RLC circuit with electrical supply in transient and stead state
203147.3	Apply Laplace transform to analyze behaviour of an electrical circuit.
203147.4	Derive formula and solve numerical of two port network and Design of filters
203147.5	Apply knowledge of network theory to find transfer function, poles and zeroes location to perform stability analysis and parallel resonance

Sanghavi College of Engineering

Department of Electrical Engineering

SEM: II

Course: Numerical methods and Computer Programming (203148)

Class: BE Electrical Engineering

Course Code	Course Outcome
203148.1	Demonstrate types of errors in computation and their causes of occurrence.
203148.2	Calculate root of algebraic and transcendental equations using various methods.
203148.3	Apply numerical methods for various mathematical problems such as interpolation, numerical differentiation, integration and ordinary differential equation.
203148.4	Solve linear simultaneous equation using direct and indirect method.
203148.5	Develop algorithms and write computer programs for various numerical methods.
203148.6	Solve Ordinary differential equations easily

Sanghavi College of Engineering

Department of Electrical Engineering

SEM: II

Course: Power System-I (203145)

Class: SE Electrical Engineering

Course Code	Course Outcome
203145.1	Recognize different patterns of load curve and calculate associated different factors with it and tariff.
203145.2	Draft specifications of electrical equipment in power station.
203145.3	Design electrical and mechanical aspects in overhead transmission and underground cables.
203145.4	Evaluate the inductance and capacitance of different transmission line configurations.
203145.5	Analyse the performance of short and medium transmission lines

Sanghavi College of Engineering

Department of Electrical Engineering

SEM: I

Course: Project Based Learning (203152)

Class: SE Electrical Engineering

Course Code	Course Outcome
203152.1	Identify, formulate, and analyze the simple project problem.
203152.2	Apply knowledge of mathematics, basic sciences, and electrical engineering fundamentals to develop solutions for the project.
203152.3	Learn to work in teams, and to plan and carry out different tasks that are required during a project.
203152.4	Understand their own and their team-mate's strengths and skills.
203152.5	Draw information from a variety of sources and be able to filter and summarize the relevant points.
203152.6	Communicate to different audiences in oral, visual, and written forms.