

Sanghavi College of Engineering
Department of Electrical Engineering

SEM: I

Pattern: 2019

Course: Power System Operation & Control (403141)

Class: BE Electrical Engineering

Course Code	Course Outcome
403141.1	Summarize angle, voltage and frequency stability in the power system control (UN)
403141.2	Illustrate various ways of interchange of power between interconnected utilities (AP).
403141.3	Analyze stability and optimal load dispatch using different techniques (AN).
403141.4	Select appropriate FACTS devices for stable operation of the system (EV).
403141.5	Evaluate the stability of the system and suggest the methods to improve it (EV).

Sanghavi College of Engineering

Department of Electrical Engineering

SEM: I

Course: 403142: Advanced Control System

Class: BE Electrical Engineering

Course Code	Course Outcome
303142.1	Explain compensation networks, common nonlinearities, the concept of state, sampling and reconstruction, and concepts of advanced controls (Understanding)
303142.2	Determine transfer function from state model (Applying)
303142.3	Test controllability and observability properties of the system (Evaluating)
303142.4	Design compensators, state feedback controls, and observers for the system (Creating)

Sanghavi College of Engineering

Department of Electrical Engineering

SEM: I

Course: Electrical & Hybrid Vehicle(403144B)

Class: BE Electrical Engineering

Course Code	Course Outcome
403144B.1	Analyze the Life Cycle Assessment of Li-ion battery
403144B.2	Describe the different types of Li-ion charging methods
403144B.3	Comprehend the knowledge of drivetrain hybridization
403144B.4	Evaluate EV motor sizing
403144B.5	Classify Battery Recycling methods

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Department of Electrical Engineering

SEM: I

Course: MOOCs (403146)

Class: BE Electrical Engineering

Course Code	Course Outcome
403146.1	Enables the students to directly engage and learn from the best faculty in the country in order to strengthen the fundamentals.
403146.2	Explore new areas of interest in a relevant field.
403146.3	Enable self learning initiative in learners
403146.4	Develop critical thinking to solve complex problems in engineering, science and humanities.
403146.5	Improve communication skills by interacting with peers and course teachers.

Sanghavi College of Engineering

Department of Electrical Engineering

SEM: I

Course: PLC and SCADA (403143A)

Class: BE Electrical Engineering

Course Code	Course Outcome
403143A.1	Develop and explain the working of a PLC with the help of a block diagram.
403143A.2	Classify input and output interfacing devices with PLC.
403143A.3	Design PLC based application by proper selection criteria, developing GUI and ladder program.
403143A.4	Execute, debug, and test the programs developed for digital and analog operations.
403143A.5	Develop the architecture of SCADA and explain the importance of SCADA in critical infrastructure.
403143A.6	Describe the SCADA protocols and digital control systems, along with their architecture for automation.

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Department of Electrical Engineering

SEM: I

Course: Power Quality management (403143B)

Class: BE Electrical Engineering

Course Code	Course Outcome
403143B.1	Understand power quality and attribute of power quality
403143B.2	Describe voltage flicker and mitigation of it
403143B.3	Analyze the effect of power system events on voltage sag and its characteristics
403143B.4	Identify the sources of harmonics and harmonics produced
403143B.5	Select proper method for harmonic mitigation along with methods of power quality monitoring
403143B.6	Carry out power quality monitoring using power quality analyzers.

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Department of Electrical Engineering

SEM: I

Course: Project 1 (403145)

Class: BE Electrical Engineering

Course Code	Course Outcome
403145.1	Define the project problem statement and identify the scope of the project
403145.2	Search the appropriate research papers, standards and e-resources and write a literature survey.
403145.3	Identify tools, techniques, methods, concepts, measuring devices, and instruments required for the project to define the methodology of the project.
403145.4	Justify the selection of electrical, electronic and mechanical components for the project prototyping
403145.5	Simulate or develop a system for software or hardware verification.
403145.6	Write a project report with proper interpretation of results.

Sanghavi College of Engineering

Department of Electrical Engineering

SEM: II

Course: Advanced Electrical Drives and Control (403149)

Class: BE Electrical Engineering

Course Code	Course Outcome
403149.1	Explain motor load dynamics and multi quadrant operation of drives.
403149.2	Analyze operation of converter fed and chopper fed DC drives.
403149.3	Apply different braking methods of D.C. and induction motor drive.
403149.4	Elaborate vector control for induction motor and BLDC drives.
403149.5	Elaborate synchronous motor, reluctance motor drive
403149.6	Differentiate between classes and duty cycles of motors and select suitable drives in various industrial applications.

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Department of Electrical Engineering

SEM: I

Course: Illumination Engineering(403151D)

Class: BE Electrical Engineering

Course Code	Course Outcome
403151D.1	Define and reproduce various terms in illumination
403151D.2	Identify various parameters for illumination system design
403151D.3	Design indoor and outdoor lighting systems
403151D.4	Enlist state of the art illumination systems
403151D.5	Study design of modern electrical schemes
403151D.6	Learn modern electrical trends in illumination

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Department of Electrical Engineering

SEM: II

Course: Project Stage II (403152)

Class: BE Electrical Engineering

Course Code	Course Outcome
403152.1	Identify tools, techniques, methods, concepts, measuring devices, and instruments required for the project to define the methodology of the project
403152.2	Justify the selection of electrical, electronic and mechanical components for the project prototyping
403152.3	Select the appropriate testing method for system performance evaluation
403152.4	Interpret results obtained by simulation, and hardware implementation and decide on further action or write a conclusion
403152.5	Write a project report and research paper on the project work

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SEM: II

Course: Smart Grid (203150C)

Class: BE Electrical Engineering

Course Code	Course Outcome
403150C.1	Apply the knowledge to differentiate between Conventional and Smart Grid
403150C.2	Describe importance of Supercapacitors.
403150C.3	Identify the need of Smart metering.
403150C.4	Apply the communication technology in smart grid.
403150C.5	Comprehend the issues of micro grid.

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SEM: II

Course: Switchgear and Protection (403148)

Class: BE Electrical Engineering

Course Code	Course Outcome
403148.1	Understand the fundamentals of protective relaying
403148.2	Demonstrate the arc interruption and analyze the RRRV in circuit breakers
403148.3	Demonstrate the construction and working principle of air brake circuit breakers, SF6 circuit breakers, and a vacuum circuit breaker.
403148.4	Explain the characteristics of static and digital relays and their applications in power systems
403148.5	Apply the differential protection scheme to large transformers, alternators, and induction motors.
403148.6	Apply distance protection, three stepped protection for transmission line.