

Seventh Semester		
S. No.	Paper Code	Paper/COs
1	ETEE-401	Electric Drives
	ETEE-401.1	Ascertain the selection of a suitable motor for different types of industrial loads used in electrical drives.
	ETEE-401.2	Illustrate the operation of dc motor drives.
	ETEE-401.3	Compare various speed control schemes used in induction motor drives.
	ETEE-401.4	Design control schemes used for open and closed loop operations in special machine drives.
2	ETEE-403	Advanced Control Systems
	ETEE-403.1	To analyze state space analysis, non linear systems and adaptive systems.
	ETEE-403.2	To analyze various types of system-continuous, discrete, linear and non linear systems.
	ETEE-403.3	To determine stability of non linear system using Lyapunov's methods.
3	ETEE-405	EHV AC and HVDC Transmissions
	ETEE-405.1	Understand the fundamental design aspects of EHVAC transmission lines and various problems related to it.
	ETEE-405.2	Develop an in-depth knowledge of reactive power management in power system and its characteristics.
	ETEE-405.3	Examine the basics of HVDC systems and their comparison with EHVAC systems.
	ETEE-405.4	Perceive the importance of system control and DC link control and classify the various types of filters.
4	ETEL-405	Electrical Machine Design
	ETEL-405.1	Design of various components of dc machine.
	ETEL-405.2	Design of different components of transformer.
	ETEL-405.3	Design of different components of induction motor.
5	ETEE-419	Renewable Energy Resources
	ETEE-419.1	Understand the need for solar energy and its application.
	ETEE-419.2	Analyze the technology for harnessing the wind power and small mini and micro hydro power plant.
	ETEE-419.3	Understand biomass, geothermal, otec, tidal and wave energy, fuel cell and hydrogen energy as an emerging source.
	ETEE-419.4	Analyze importance of grid connectivity and smart grid in providing continuous power.
6	ETEE-451	Electrical Drives Lab
	ETEE-451.1	Apply power electronics application in control of speed of various types of induction motors.
	ETEE-451.2	Use phase controlled converters for control of different parameters of dc motors.
	ETEE-451.3	Analyze the four quadrant operation of dc motor drives.
6	ETEE-451.4	Evaluate the performance characteristics of special purpose machine drives.

7	ES-453	Advanced Control Systems Lab
	ES-453.1	To create and analyze state space model of a given system.
	ES-453.2	Formulate time and frequency response of a given system.
	ES-453.3	Formulate phase plane trajectory for a given Non-linear system.
	ES-453.4	Create and design controller for a practical system in sci-lab.
8	ETEL-455	Electrical Machine Design Lab
	ETEL-455.1	Design of components of dc machines with calculation of performance indices.
	ETEL-455.2	Design a transformer with reduced losses.
	ETEL-455.3	Design the various dimensions of the synchronous motor.
	ETEL-455.4	Design a model of induction motor with different performance parameters.
9	ETEE-457	Seminar
	ETEE-457.1	Gain a comprehensive understanding of the seminar topic, including its principles, theories, and practical applications.
	ETEE-457.2	Develop the ability to critically analyze and evaluate the key concepts and challenges related to the seminar topic.
	ETEE-457.3	Enhance oral and written communication skills to articulate ideas, findings, and insights from the seminar effectively.
	ETEE-457.4	Acquire problem-solving skills relevant to the seminar topic, enabling students to apply their knowledge to real-world scenarios.
10	ETEE-457	Minor Project
	ETEE-457.1	Articulate the problem statement to identify the project objective.
	ETEE-457.2	Identify the engineering system tools, variables and parameters to solve the problem.
	ETEE-457.3	Demonstrate an ability to work in teams.
	ETEE-457.4	Design and develop cost effective solution (application/POC/research based.)
11	ETEE-459	Industrial Training
	ETEE-459.1	Ability to acquire and apply fundamental principle of engineering.
	ETEE-459.2	Analyze the problems related to field application.
	ETEE-459.3	Exposure of latest known-law.
	ETEE-459.4	Awareness of social global and environment responsibility as an engineer.

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12	ETEE-404	Neuro-Fuzzy Systems
	ETEE-404.1	Recognize & understand the concept of artificial neural networks & the learning.
	ETEE-404.2	Understand the concept of fuzzy logic, operation on fuzzy logic sets, linguistic variables & fuzzy rules.
	ETEE-404.3	Apply fuzzy modelling concept & design.
	ETEE-404.4	Understand genetic algorithm concepts & apply for solving the optimization problem.
13	MS-406	Power System Operation and control
	MS-406.1	Describe automatic generation control and speed governor modelling.
	MS-406.2	Illustrate techniques for optimal load dispatch including transmission losses among the generating units.
	MS-406.3	Interpret transmission congestion and deregulation of power systems.
	MS-406.4	Evaluate real time power control and methods of voltage control in power systems.
14	ETHS-402	Human Values and Professional Ethics-II
	ETHS-402.1	Apply Universal Human Values and Professional Ethics to modern technical and professional world to support a harmonious and prosperous life at all the four levels of living.”
	ETHS-402.2	Describe ‘social and value dimensions of technology’ with the viewpoint of ‘Engineers’ Responsibility for Safety’ by discussing and evaluating various case studies.”
	ETHS-402.3	Generate the ability to analyze systematic ethical decisions on environmental as well as professional global issues and to experiment with situations of personal and professional conflicts.
	ETHS-402.4	Build team spirit and demonstrate an ethical work culture and feeling of job satisfaction while proposing an urge to practice ethical codes.
15	ETEE-416	Electrical Energy Conservation
	ETEE-416.1	Apply various energy policy & energy conservation scheme under development of energy system.
	ETEE-416.2	Analysis of energy conservation in electrical installation as per energy conservation.
	ETEE-416.3	Evaluation of performance of energy efficient motors & energy control strategy.
	ETEE-416.4	Apply concept of energy conservation in green building.
16	ETEE-432	Electrical Power Quality
	ETEE-432.1	Understanding different power quality issues and their monitoring.
	ETEE-432.2	Analysis and assessment of voltage sag in transmission system.
	ETEE-432.3	Analyze PQ consideration in industrial power system.
	ETEE-432.4	Evaluate harmonics in electrical power system.
17	ETEE-452	Neuro-Fuzzy Systems Lab
	ETEE-452.1	Create an artificial neural network using neural network tool box in sci-lab.
	ETEE-452.2	implement various learning algorithm in artificial neural sci-lab.
	ETEE-452.3	Evaluate various architecture of neuro-fuzzy network/hybrid learning algorithm in sci-lab.
	ETEE-452.4	Design controller using fuzzy/neural network in sci-lab.

18	ETEE-454	Practical Based on Elective (ELECTRICAL ENERGY CONSERVATION LAB (ETEE-454))
	ETEE-454.1	Understand the LABVIEW software and ELVIS workstation and identify its different tools to execute simple arithmetic & logic operations.
	ETEE-454.2	Analyze the performance and characteristics of electrical & electronic systems.
	ETEE-454.3	Develop an interface between MATLAB & LABVIEW.
	ETEE-454.4	Develop logic design to generate various analog signals using LABVIEW & ELVIS.
19	ETEE-456	Major Project
	ETEE-456.1	Articulate the problem statement to identify the project objective.
	ETEE-456.2	Compare and contrast the alternate solution process to choose the best alternate.
	ETEE-456.3	Justify a reasonable conclusion and communicate the work in a concise way.
	ETEE-456.4	Find the future scope of your researched work.