2.6.1

COURSE OUTCOMES

Electrical & Electronics Engineering

Course Outcome (CO)
2019 Scheme (Even Semester)

	EET402 Electrical System Design and Estimation
CO1	Explain the rules and regulations in the design of components for medium and high voltage installations.
CO2	Design lighting schemes for indoor and outdoor applications.
CO3	Design low/medium voltage domestic and industrial electrical installations.
CO4	Design, testing and commissioning of 11 kV transformer substation.
CO5	Design electrical installations in high rise buildings.
	EET444 Electrical Machine Design
CO1	Identify the general design considerations of electrical machines.
CO2	Design armature and field system of DC machines.
CO3	Design core, yoke, windings and cooling systems of transformers.
CO4	Design stator and rotor of induction machines.
CO5	Design stator and rotor of synchronous machines.
CO6	Apply software tools in electrical machine design.
	EET426 Special Electric Machines
CO1	Analyse the performance of different types of permanent magnet motors.
CO2	Analyse the performance of different types of permanent magnet motors.
CO3	Analyse the performance of different types of reluctance motors.
CO4	Explain the construction and principle of operation of servo motors, single phase motors and linear motors
CO5	Analyse the performance of linear induction motors.
	EET418 Electric and Hybrid Vehicles
CO1	Explain the basic concepts of Conventional, Electric, Hybrid EV and AutonomousVehicles
CO2	Describe different configurations of electric and hybrid electric drive trains
CO3	Discuss the propulsion unit for electric and hybrid vehicles
CO4	Compare various energy storage and EV charging systems
CO5	Select drive systems and various communication protocols for EV
	EET302 Linear Control Systems
CO1	Describe the role of various control blocks and components in feedback systems
CO2	Analyse the time domain responses of the linear systems.
CO3	Apply Root locus technique to assess the performance of linear systems
CO4	Analyse the stability of the given LTI systems.
CO5	Analyse the frequency domain response of the given LTI systems.
CO6	Design compensators using time domain and frequency domain techniques.
	EET 304 Power Systems II
CO1	Apply the per unit scheme for any power system network and compute the fault levels.
CO2	Analyse the voltage profile of any given power system network using iterative methods.
CO3	Analysethe steady state and transient stability of power system networks
CO4	Model the control scheme of power systems.
CO5	Schedule optimal generation scheme.
	EET 306 Power Electronics
CO1	Explain the operation of modern power semiconductor devices and its characteristics
CO2	Analyse the working of controlled rectifiers.
CO3	Explain the working of AC voltage controllers, inverters and PWM techniques.
CO4	Compare the performance of different dc-dc converters.
CO5	Describe basic drive schemes for ac and dc motors.
	EET 312 Biomedical Instrumentation
CO1	To study about various biometrics and instruments
CO2	To understand the different types of bioelectric potentials
CO3	To learn the different measuring techniques and recording methods
CO4	To study about various computed, imaging, ultrasonic measuring methods
CO5	To familiarize different testing methods
	EET 202 DC Machines and Transformers
CO1	Acquire knowledge about constructional details of DC machines
CO2	Describe the performance characteristics of DC generators
CO3	Describe the principle of operation of DC motors and select appropriate motor types for different applications
CO4	Acquire knowledge in testing of DC machines to assess its performance
CO5	Describe the constructional details and modes of operation of single phase and three phase transformers
CO6	Analyse the performance of transformers under various conditions
	EET 204 Electromagnetic Theory
CO1	Apply vector analysis and coordinate systems to solve static electric and magneticfield problems.
CO2	Apply Gauss Law, Coulomb's law and Poisson's equation to determine electrostatic field parameters
CO3	Determine magnetic fields from current distributions by applying Biot-Savart's law and Amperes Circuital law
CO4	Apply Maxwell Equations for the solution of timevarying fields
CO5	Analyse electromagnetic wave propagation in different media.
	EET 206 Digital Electronics
CO1	Identify various number systems, binary codes and formulate digital functions using Boolean algebra.
CO2	Design and implement combinational logiccircuits.
CO3	Design and implement sequential logic circuits
CO4	Compare the operation of various analog to digital and digital to analog conversion circuits.
CO5	Explain the basic concepts of programmable logic devices and VHDL.
	EST 130 Basics Of Electrical Engineering
CO1	Apply fundamental concepts and circuit laws to solve simple DC electric circuits
CO2	Develop and solve models of magnetic circuits
CO3	Apply the fundamental laws of electrical engineering to solve simple ac circuits in steady state

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2019 Scheme (Odd Semester)

EET 401 Advanced Control Systems

CO1	Develop the state variable representation of physical systems
CO2	Analyse the performance of linear and nonlinear systems using state variable approach
CO3	Design state feedback controller for a given system
CO4	Explain the characteristics of nonlinear systems
CO5	Apply the tools like describing function approach or phase plane approach for assessing the performance of nonlinear systems
CO6	Apply Lyapunov method for the stability analysis of physical systems.

EET 413 Electric Drives

CO1	Describe the transient and steady state aspects electric drives
CO2	Apply the appropriate configuration of controlled rectifiers for the speed control of DC motors
CO3	Analyse the operation of chopper-fed DC motor drive in various quadrants
CO4	Illustrate the various speed control techniques of induction motors
CO5	Examine the vector control of induction motor drives
CO6	Distinguish different speed control methods of synchronous motor drives

EET 301 Power Systems I

CO1	Identify the power generating system appropriate for a given area.
CO2	Evaluate the electrical performance of any transmission line.
CO3	Compute various physical characteristics of underground and overhead transmission systems.
CO4	Select appropriate switchgear for protection schemes
CO5	Design a simple electrical distribution system as per the standards.

EET 303 Microprocessors and Microcontrollers

CO1	Describe the architecture and timing diagram of 8085 microprocessor.
CO2	Develop assembly language programs in 8085 microprocessor.
CO3	Identify the different ways of interfacing memory and I/O with 8085 microprocessor.
CO4	Understand the architecture of 8051 microcontroller and embedded systems.
CO5	Develop assembly level and embedded C programs in 8051 microcontroller.

EET 305 Signals and Systems

CO1	Explain the basic operations on signals and systems.
CO2	Apply Fourier Series and Fourier Transform concepts for continuous time signals.
	Analyse the continuous time systems with Laplace Transform.
	Analyse the discrete time system using Z Transform
CO3	Apply Fourier Series and Fourier Transform concepts for Discrete time domain
CO4	Describe the concept of stability of continuous time systems and sampled data systems.

EET 307 Synchronous and Induction Machines

CO1	Analyse the performance of different types of alternators.
CO2	Analyse the performance of a synchronous motor
CO3	Analyse the performance of different types of induction motors.
CO4	Describe operating principle of induction machine as generator.
CO5	Explain the types of single phase induction motors and their working principle.

EET 201 Circuits and Networks

CO1	Apply circuit theorems to simplify and solve complex DC and AC electric networks.
CO2	Analyse dynamic DC and AC circuits and develop the complete response to excitations
CO3	Solve dynamic circuits by applying transformation to s-domain.
CO4	Analyse three-phase networks in Y and Δ configurations
CO5	Solve series /parallel resonant circuits.
CO6	Develop the representation of two-port networks using network parameters and analyse.

EET 203 Measurements and Instrumentation

CO1	Identify and analysethe factors affecting performance of measuring system
CO2	Choose appropriate instruments for the measurement of voltage, current in ac and dc measurements
CO3	Explain the operating principle of power and energy measurement
CO4	Outline the principles of operation of Magnetic measurement systems
CO5	Describe the operating principle of DC and AC bridges, transducersbased systems.
CO6	Understand the operating principles of basic building blocks of digital systems, recording and display units

EET 205 Analog Electronics

CO1	Design biasing scheme for transistor circuits.
CO2	Model BJT and FET amplifier circuits.
	Identify a power amplifier with appropriate specifications for electronic circuit applications.
CO3	Describe the operation of oscillator circuits using BJT.
CO4	Explain the basic concepts of Operational amplifier(OPAMP)
CO5	Design and developvarious OPAMP application circuits.

EST 130 Basics Of Electrical Engineering

CO1	Apply fundamental concepts and circuit laws to solve simple DC electric circuits
CO2	Develop and solve models of magnetic circuits
CO3	Apply the fundamental laws of electrical engineering to solve simple ac circuits in steady state

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