GEETHANJALI INSTITUTE OF SCIENCE & TECHNOLOGY::Nellore

Department of Electrical and Electronics Engineering

COURSE OUTCOMES

CAY : 2021-22	Reg : R20	SEM : II	Year : II

SNO	COURSE OUTCOME STATEMENT	Taxonomy
SPECIFIC LEARNING OUTCOMES – Numerical Methods & Probability theory		
C221.1	Use the numerical techniques find solution of algebraic and transcendental Equations.	Apply
C221.2	Determine the interpolating value of the function using Numerical techniques.	Apply
C221.3	Evaluate definite integrals using Newton cotes Formula.	Apply
C221.4	Utilize numerical methods to find numerical solution of ordinary and partial differential equations.	Apply
C221.5	Explain the basic concepts of probability, random variables and solve real time problems using Baye's theorem.	Understand
C221.6	Apply probability distributions like Bionomial, Poisson and Normal distributions to solve statistical problems	Apply
SPECIFIC LEARNING OUTCOMES – Analog Electronic Circuits		
C222.1	List various types of feedback amplifiers, oscillators and large signal amplifiers	Remember
C222.2	Explain the operation of various electronic circuits and linear ICs	Understand
C222.3	Apply various types of electronic circuits to solve engineering problems	Apply
C222.4	Analyze various electronic circuits and regulated power supplies for proper understanding	Analyze
C222.5	Infer choice of transistor configuration in a cascade amplifier	Understand
C222.6	Construct electronic circuits for a given specification	Apply
SPECIFIC LEARNING OUTCOMES – Power Electronics		
C223.1	Articulate the basics of power electronic devices	Understand
C223.2	compare voltages and currents, active and reactive power inputs to converter with and without freewheeling diode for 1Ø and 3Ø converters.	Apply
C223.3	Understand the concepts of various control strategies, types of choppers and analyze their principle operation, waveforms of	Understand

	voltages and currents at different loads.	
C223.4	Understand the construction, working of single phase and three phase voltage inverters with their waveforms.	Understand
C223.5	Understand the concept of AC voltage controllers	Understand
C223.6	Understand the concept of Cyclo Converters	Understand

SPECIFIC LEARNING OUTCOMES – AC Machines

C224.1	Understand the basics of ac machine windings, construction, principle of working, equivalent circuit of induction and synchronous machines	Understand
C224.2	Analyze the phasor diagrams of induction and synchronous machine	Analyze
C224.3	Understand the constructional features, principle involved, equivalent circuit of single phase induction motor and various starting methods and its applications	understand
C224.4	Analyze the parallel operation of alternators, synchronization and load division of synchronous generators	Analyze
C224.5	Apply the concepts to determine V and inverted V curves and power circles of synchronous motor	apply
C224.6	Analyze the various methods of starting in both induction and synchronous machines	Analyze

SPECIFIC LEARNING OUTCOMES – Electro Magnetic Field Theory

C225.1	Acquires the Knowledge to understand basic principles, concepts and fundamental laws of electric fields.	Understand
C225.2	To describe static electric fields, their behavior in different media and associated Maxwell's equations.	Understand
C225.3	Acquires the Knowledge to understand basic principles, concepts and fundamental laws of magnetic fields.	Understand
C225.4	To describe static magnetic fields, their behavior in different media and associated Maxwell's equations.	Understand
C225.5	Acquires the knowledge to understand time- varying fields and interaction between electricity and magnetism.	Understand
C225.6	Acquires the knowledge to calculate the quantities associated with uniform plane wave motion in different media of transmission.	Apply

SPECIFIC LEARNING OUTCOMES – Analog Electronics Laboratory

C226.1	Analyze various amplifier circuits	Analyze
C226.2	Construct multistage amplifiers	Apply
C226.3	Construct OPAMP based analog circuits	Apply
C226.4	Understand working of logic gates	Understand
C226.5	Construct and implement Combinational circuits	Apply
C226.6	Construct and implement Sequential logic circuits	Apply

SPECIFIC LEARNING OUTCOMES – Power Electronics Laboratory

C227.1	Understand the various characteristics of power electronic devices with gate firing circuits and forced commutation techniques.	Understand
C227.2	Analyze the operation of single-phase half & fully-controlled converters and inverters with different types of loads.	Analyze
C227.3	Analyze the operation of DC-DC converters, single-phase AC Voltage controllers,	Analyze
C227.4	Analyze various power electronic converters using PSPICE	Analyze

	software.	
C227.5	Analyze the operation cyclo converters with different loads.	Analyze
C227.6	Analyze the operation DC choppers with different loads.	Analyze
SPECIFIC LEARNING OUTCOMES – AC Machines Laboratory		
C228.1	Analyze load test, no-load and blocked-rotor tests for construction of circle diagram and equivalent circuit determination in a single phase induction motor	Analyze
C228.2	understand and analyze speed control techniques of three phase induction motor	Apply
C228.3	understand to predetermine regulation of a three-phase alternator by synchronous impedance and MMF method	understand
C228.4	understand to predetermine regulation of a three-phase alternator by Zero Power Factor method	understand
C228.5	Determine Xd and Xq salient pole synchronous machine	Apply
C228.6	Evaluate and analyze V and inverted V curves of 3 phase synchronous motor	Evaluate
SPECIFIC LEARNING OUTCOMES – Circuits Simulation & Analysis Using Pspice		
C229.1	Analyse various DC & AC circuits using PSPICE software	Analyse
C229.2	Analyse single-phase half controlled converters	Analyse
C229.3	Analyse single-phase fully controlled converters	Analyse
C229.4	Analyse single-phase Square wave and PWM inverters	Analyse
C229.5	Analyse three-phase Square wave and PWM inverters	Analyse
C229.6	Analyse single-phase AC Voltage controllers with different loads.	Analyse
SPECIFIC LEARNING OUTCOMES – Design Thinking For Innovation		
C2210.1	Understand the concepts related to design thinking	Understand
C2210.2	Understand the fundamentals of Design Thinking and innovation	Understand
C2210.3	Apply the design thinking techniques for solving problems in various sectors	Apply
C2210.4	Analyse to work in a multidisciplinary environment	Analyse
C2210.5	Evaluate the value of creativity	Evaluate
C2210.6	Understand specific problem statements of real time issues	Understand

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COURSE OUTCOMES

CAY : 2022-23	Reg: R20	SEM : II	Year : III

SNO	COURSE OUTCOME STATEMENT	Taxonomy
SPECIFIC LEARNING OUTCOMES – Power System Analysis		
C321.1	Form the Zbus and Ybus of a given power system network	Apply
C321.2	Conduct load flow studies using GS and NR methods	Apply
C321.3	Make Calculations for various types of faults	Apply
C321.4	Determine the transient stability by equal area criterion	Apply
C321.5	Determine steady state stability power limit	Apply
C321.6	Distinguish between different types of buses used in load flow solution.	Understand
SPECIFIC LEARNING OUTCOMES – Digital Computer Platforms		
C322.1	Understand the basic architecture & pin diagram of 8086 microprocessor, 8051 Microcontroller, DSP Processor and FPGA Processors	Understand
C322.2	Apply the concepts to design Assembly language programming to perform a given task.	Apply
C322.3	Understand the Interrupt service routines for all interrupt types	Understand
C322.4	Understand the Real time applications by writing Assembly Language Programs for the Digital Signal Processors	Understand
C322.5	Analyze Xilinx programming for Spartan FPGA boards and use Interrupts for real-time control applications	Analyze
C322.6	Analyze various real time systems by using various controllers	Analyze
SPECIFIC LEARNING OUTCOMES – Digital Signal Processing		
C323.1	Understand the basic concepts of discrete-time signals and systems, classify systems based on their properties.	Understand
C323.2	Determine the frequency response for the given LTI systems using difference equations and also plot its pole-zero.	Apply
C323.3	Analyze discrete-time signals and systems using discrete time Fourier transform(DFT) and Fast Fourier transform(FFT).	Analyze
C323.4	Design and implement digital filters (FIR & IIR) for the given specifications.	Design
C323.5	Compare the digital filters and also realize the various filters for different structures in discrete-time systems.	Evaluate
C323.6	Understand and develop the sampling rate conversion techniques, find the quantization errors in digital signal processing.	Understand
SPECIFIC LEARNING OUTCOMES – HVDC and FACTS		
C324.1	Understand the necessity of HVDC systems as emerging transmission networks	Understand
C324.2	Analyze the Graetz circuit with various conditions.	Analyze
C324.3	Apply various control schemes for the control of power flow in HVDC system.	Apply
C324.4	Understand the Operation of converters and Transformer Connections in HVDC .	Understand

C324.5	Analyze the Operation of various Shunt devices and their control.	Analyze
C324.6	Understand Principle of operation and Characteristics of UPFC and IPFC.	Understand

SPECIFIC LEARNING OUTCOMES – Principles of Operating Systems

C325.1	Describe the fundamental organization of a computer systems	Understand
C325.2	Explain about Operating systems functions	Understand
C325.3	Differentiate between process and thread and classify scheduling Algorithms	Understand
C325.4	Determine Synchronization and deadlock problems	Apply
C325.5	Describe about various memory management schemes	Understand
C325.6	Explain file systems concepts and I/O management	Understand

SPECIFIC LEARNING OUTCOMES – Power Systems Analysis Lab

C326.1	Determination of sequence impedance and sub transient reactance of synchronous machine	Apply
C326.2	Conduct experiments to analyze LG, LL, LLG, LLLG faults	Analyze
C326.3	Estimate the parameters of three winding transformer equivalent circuit	Evaluate
C326.4	Develop MATLAB program for formation of Y and Z buses	Analyze
C326.5	Develop MATLAB programs for gauss-seidel Newton Raphson and fast decoupled load flow studies.	Analyze
C326.6	Develop the SIMULINK model load frequency control problem	Analyze

SPECIFIC LEARNING OUTCOMES – Digital Computing Platforms Lab

C327.1	Understand the basic concepts to write assembly language programming on 8086 Microprocessors.	Understand
C327.2		
C327.3	Analyze various device configurations and Interfacing of various devices with 8086.	Analyze
C327.4	Analyze the parallel and serial communication between two microprocessors using USART.	Analyze
C327.5	Understand the basic concepts to write programming on 8051 Microcontroller	Understand
C327.6	Understand various device configurations and Interfacing of various devices with 8051	Understand

SPECIFIC LEARNING OUTCOMES – Digital Signal Processing Lab

C328.1	Demonstrate DSP and its applications using MATLAB software	Understand
C328.2	Examine the frequency response of discrete-time LTI systems.	Apply
C328.3	Design of IIR, FIR digital filters for the given specifications also observe the frequency response.	Analyze
C328.4	Learn the architecture details of floating point DSPs	Understand
C328.5	Implement DSP algorithms in software using CCS with DSP floating point Processor	Evaluate
C328.6	Analyze the basic signals and also find the discrete Fourier transform (DFT) for discrete-time signals/sequences.	Understand

SPECIFIC LEARNING OUTCOMES – Applications of Soft Computing Tools in Electrical Engineering

329.1	Analyse the transient response of Electrical Network and Power System using equal area criterion.	Analyse
329.2	Apply the concepts to design models of Transformers through MATLAB	Apply
329.3	Analyse various converters through MATLAB.	Analyse
329.4	Analyse Sine-PWM techniques for various inverters through MATLAB	Analyse
329.5	Analyse the faults by using Zbus Matrix	Analyse

329.6	Analyse real time models using MATLAB	Analyse
SPECIFIC LEARNING OUTCOMES – Intellectual Property Rights & Patents		
3210.1	Understand the details of IPR law	Understand
3210.2	Understand the details of Cyber law	Understand
3210.3	Illustrate the copy right law	Remember
3210.4	Discuss about registration process associated with trademarks	Understand
3210.5	Discuss about maintenance and litigations associated with trademarks	Understand
3210.6	Understand the trade secret law	Understand

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COURSE OUTCOMES

CAY : 2022-23	SEM : II	R19	Year : IV

SNO	COURSE OUTCOME STATEMENT	Taxonomy
SPECIFIC LEARNING OUTCOMES – ELECTRICAL DISTRIBUTION SYSTEM AUTOMATION		
C421.1	Understand basics of distribution systems and substations	Understand
C421.2	Understand about modelling of various loads	Understand
C421.3	Perform distribution load flow solutions	Apply
C421.4	Understand about installation of capacitors at various locations	Understand
C421.5	Evaluate power loss and feeder cost	Apply
C421.6	Know the principles of SCADA, Automation distribution system and management	Understand
SPECIFIC LEARNING OUTCOMES – ELECTRONICS INSTRUMENTATION		
C422.1	Understand the different methods for measurement of various electrical quantities.	Understand
C422.2	Compare the various measuring techniques for measuring voltage.	Analyse
C422.3	Use oscilloscope to determine frequency and phase of a sinusoidal signal.	Apply
C422.4	Select specific instruments for specific measurement function.	Analyse
C422.5	Compare different types of bridge circuits.	Analyse
C422.6	Analyze various measuring techniques for both electrical and nonelectrical quantities.	Analyse
SPECIFIC LEARNING OUTCOMES – Project Work		
C423.1	Demonstrate a sound technical knowledge of their selected project topic.	Apply
C423.2	Able to identify the problem, formulate a prospective solution	Understand
C423.3	Design engineering solutions to the given problem using a systems approach.	Create
C423.4	Conduct experiments or simulation and collect observation for the engineering project	Analyse
C423.5	Develop a prototype of the project by distribution of tasks among the team	Create
C423.6	Communicate with engineers and the community at large in written an oral forms	Create

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