



GEETHANJALI INSTITUTE OF SCIENCE & TECHNOLOGY::Nellore

Department of Electrical and Electronics Engineering

Course Outcomes

CAY : 2018-19		SEM : I		Year : II	
SNO	Course Outcome Statement			Taxonomy	
SPECIFIC LEARNING OUTCOMES – Mathematics –III					
C211.1	Apply techniques to solve linear system of equations.			Apply	
C211.2	Evaluate the Eigen values and Eigen vectors of the square matrices and discuss the nature of quadratic forms.			Evaluate	
C211.3	Evaluate the root of algebraic and transcendental Equations.			Evaluate	
C211.4	Calculate the interpolating polynomial.			Apply	
C211.5	Calculate the best fit of curves from the given data.			Apply	
C211.6	Solve differential equations using numerical methods.			Apply	
SPECIFIC LEARNING OUTCOMES – Electrical Circuits – II					
C212.1	Analyse the transient response of series and parallel RL, RC, RLC circuits for DC and AC excitations			Analyse	
C212.2	Analyse three phase balanced and unbalanced circuits and determine line voltages, line currents, phase voltages and phase currents.			Analyse	
C212.3	Apply Fourier transforms to electrical circuits excited by non-sinusoidal sources			Evaluate	
C212.4	Analysis of electrical networks, duality and dual networks			Analyse	
C212.5	Design different types of filters and study their characteristics.			Create	
C212.6	Analyse and Simulate D.C. Circuits			Evaluate	
SPECIFIC LEARNING OUTCOMES – Electrical Machines – I					
C213.1	Explain the principles of electromechanical energy conversion.			Understand	
C213.2	Describe the performance of DC Generators.			Understand	
C213.3	Compute the load shared by each generator when several generators operate In parallel			Apply	
C213.4	Describe the performance of DC Motors.			Understand	
C213.5	Identify suitable method and conditions for obtaining the required speed of DC motor.			Remember	
C213.6	Calculate the losses and efficiency of DC generators and motors.			Apply	
SPECIFIC LEARNING OUTCOMES – Control Systems Engineering					
C214.1	Evaluate the transfer function model for physical systems and control system components			Evaluate	
C214.2	Determine the transfer function for a given system using block diagram and signal flow graph methods			Apply	

C214.3	Compute the time response of systems and steady state errors	Apply
C214.4	Determine the absolute and relative stability of a system using RH and root loci concepts.	Apply
C214.5	Analyse the stability of the system and design compensation networks	Analyse
C214.6	Describe the state variable representation of physical system and solve the state equation	Understand
SPECIFIC LEARNING OUTCOMES – Electronic Devices & Circuits		
C215.1	Understand the operation of various semiconductor diodes	Understand
C215.2	Analyze and design various rectifier circuits.	Analyse
C215.3	Design rectifier circuits with and without filters.	Create
C215.4	Evaluate frequency response to understand behavior of Electronics circuits.	Evaluate
C215.5	Design and analyze the DC bias circuitry of BJT and FET	create
C215.6	Analyze and design amplifier circuits and oscillators employing BJT, FET devices.	Analyse
SPECIFIC LEARNING OUTCOMES – Data Structures		
C216.1	Describe the concepts of arrays, pointers and linked lists	understand
C216.2	Explain the concepts of Stacks and Queues	understand
C216.3	Use to design algorithms in trees and graphs	Apply
C216.4	Analyse different Sorting techniques	Analyse
C216.5	Explain different Searching techniques	understand
C216.6	Design to analyze algorithms and algorithm correctness	Create
SPECIFIC LEARNING OUTCOMES – Electric Circuits Simulation Laboratory		
C217.1	Explain electric circuit concepts by interpreting the simulation results.	Understand
C217.2	Design and analyze electrical circuits experimentally using simulation tools.	Create
C217.3	Apply network theorems to electrical circuits to simplify the circuits.	Apply
C217.4	Design RL, RC and RLC circuits for specified transient response.	Create
C217.5	Design RLC series circuit for specified frequency response.	Create
C217.6	Analyse three phase balanced and unbalanced circuits.	Analyse
SPECIFIC LEARNING OUTCOMES – Electronic Devices & Circuits Laboratory		
C218.1	Use of RPS and CRO	Understand

C218.2	Analyse working Operation of various electronic Components	Analyse
C218.3	Set up a bias point in a transistor	Create
C218.4	Construct and evaluate the performance of simple electronic circuits	Create
C218.5	Evaluate the frequency Response of BJT,FET Amplifiers for Voltage Amplification	Evaluate
C218.6	Design DC power Supply circuits	Create

CAY : 2018-19		SEM : I	Year : III-I
SNO	Course Outcome Statement	Taxmony	
SPECIFIC LEARNING OUTCOMES – Electrical Measurements			
C311.1	Use wattmeters, pf meters, and energy meters in a given circuit	Apply	
C311.2	Calculate and Extend the range of ammeters and voltmeters	Analyze	
C311.3	Measure active power, reactive power, power factor, and energy in both 1-phase and 3-phase circuits	Evaluate	
C311.4	Determine the resistance values of various ranges, L and C values using appropriate bridges	Apply	
C311.5	Analyse the different characteristic features of periodic, and a periodic signals using CRO	Analyse	
C311.6	Use CTs and PTs for measurement of very large currents and high voltages	Apply	
SPECIFIC LEARNING OUTCOMES – Linear & Digital IC Applications			
C312.1	Explain the basic building blocks of Linear Integrated Circuits and its Characteristics.	Understand	
C312.2	Analyze the Linear, Non-Linear and specialized applications of Operational Amplifiers	Analyze	
C312.3	Analyze the operation Of ADC, DAC ,Waveform Generators And their design.	Analyze	
C312.4	Describe Digital Logic families and their applications.	Understand	
C312.5	Analyze various Combinational And Sequential Circuit Designs.	Analyze	
C312.6	Design various Combinational And Sequential Circuits .	apply	
SPECIFIC LEARNING OUTCOMES – Electrical Power Transmission Systems			
C313.1	Compute the transmission line parameters	Apply	
C313.2	Model a given transmission line	Create	
C313.3	Estimate the performance of a given transmission line	Evaluate	
C313.4	Analyse the effect of over voltages on transmission lines	Analyse	
C313.5	Explain the construction, types and grading of underground cables and analyze cable performance	Understand	
C313.6	Calculate sag /tension of transmission line and performance of line insulators	Apply	

SPECIFIC LEARNING OUTCOMES – Power Electronics		
C314.1	Understand the basics of power electronic devices	Understand
C314.2	Express the construction and control of rectifiers	Apply
C314.3	Evaluate power electronics converters in power control application	Evaluate
C314.4	Express the design and control of inverters	Analyse
C314.5	Ability to model chopper circuits	Apply
C314.6	Ability to design AC voltage controller and cyclo converter	Evaluate
SPECIFIC LEARNING OUTCOMES – Electrical Machines – III		
C315.1	Understand the working principle of synchronous machines	Understand
C315.2	Predetermine the regulation of synchronous generator using different methods	Apply
C315.3	Determine how several alternators running in parallel share the load on the system	Apply
C315.4	Analyze the performance characteristics of synchronous motor	Analyse
C315.5	Make necessary calculations for power factor improvement using synchronous condenser	Evaluate
C315.6	Choose specific single phase motor and special motor for a given application	Analyse
SPECIFIC LEARNING OUTCOMES – Digital Circuits and Systems		
C316.1	Describe the numeric information in different forms.	Understand
C316.2	Describe the simple Boolean expressions using the theorems and postulates of Boolean algebra and to minimize combinational functions.	Understand
C316.3	Design of small combinational circuits to build larger more complex circuits.	Create
C316.4	Analyse the small combinational circuits to build larger more complex circuits.	Analyse
C316.5	Design of small sequential circuits to build larger more complex circuits.	Create
C316.6	Analyse the small sequential circuits to build larger more complex circuits.	Analyse
SPECIFIC LEARNING OUTCOMES – Electrical Machines Laboratory – II Laboratory		
C317.1	Analyze characteristics of transformers with different loads.	Analyse
C317.2	Predetermine the efficiency of the transformer and fix the rating of transformers by identifying the equivalent circuit parameters.	Apply
C317.3	Determine the voltage regulation on testing alternators with the different load.	Apply
C317.4	Determine the efficiency with performance characteristics of slip ring induction motor by brake test.	Apply
C317.5	Predetermine the efficiency of the single phase and three phase squirrel cage induction Motor with the no load and blocked rotor test.	Apply
C317.6	Analyze the performance characteristics of Synchronous motors	Analyse

	with different excitation.	
SPECIFIC LEARNING OUTCOMES – Electrical Measurements Laboratory		
C318.1	Calibrate various electrical measuring/recording instruments	Evaluate
C318.2	Determine ratio error and phase angle error of CT	Apply
C318.3	Accurately determine the values of inductance and capacitance using a.c bridges	Understand
C318.4	Accurately determine the values of very low resistances	Apply
C318.5	Analysis based on comparing true and actual value of potentiometer and power factor meter.	Analyse
C318.6	Measure reactive power in 3-phase circuit using single wattmeter	Evaluate

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SPECIFIC LEARNING OUTCOMES – Electrical Distribution Systems		
C411.1	Analyse the classification of distribution systems	Analyse
C411.2	Analyse the technical aspects and design considerations in DC and AC distribution systems and their comparison	Analyse
C411.3	Evaluate voltage drop and line loss calculations and voltage regulating equipment to improve the power factor and voltage profile.	Evaluate
C411.4	Analyse Technical issues of substations such as location, ratings and bus bar arrangements	Analyse
C411.5	Determine the causes of low power factor and methods to improve power factor	Apply
C411.6	Contrast principles in Distribution automation	Apply
SPECIFIC LEARNING OUTCOMES – Digital Signal Processing		
C412.1	Classify various types of discrete time signals and systems	UNDERSTAND
C412.2	Use discrete Fourier Transforms (DFT) to a processing system to give the desired output.	APPLY
C412.3	Determine FFT algorithms in rapid frequency-domain analysis.	APPLY
C412.4	Analyse IIR and FIR filters using different structures	Analyse
C412.5	Design digital filters to meet specific magnitude and phase requirements	Create
C412.6	Illustrate multirate DSP techniques for various applications of	APPLY

	DSP by sampling rate conversion.	
SPECIFIC LEARNING OUTCOMES – Power System Operation and Control		
C413.1	Design an optimal operation setup of power system which minimizes operation costs and meet desired needs.	Create
C413.2	To allow students to illustrate about thermal and hydro power plants operation in meeting the load demand optimally.	Analyze
C413.3	Ability to discuss single area load frequency control and two area load frequency control.	Understand
C413.4	Apply the techniques to control power flows, frequency and voltage	Apply
C413.5	Differentiate pricing mechanism of electric energy and trading of power under deregulated environment.	Understand
C413.6	Assess the significance of power system restructuring and learn the Security Analysis, Contingency Analysis.	Evaluate
SPECIFIC LEARNING OUTCOMES – Utilization of Electrical Energy		
C414.1	Examine the laws of illumination and their application for various lighting schemes.	Apply
C414.2	Analyse the Principles and methods of electric heating and welding.	Analyse
C414.3	Describe the Systems of electric traction and study of traction equipment.	Understand
C414.4	Explain mechanics of Train movement and associated calculations.	Understand
C414.5	Ability to choose the better equipment with consideration of economic aspects.	Evaluate
C414.6	Evaluate the losses and efficiency of the electrical equipments used in various industries	Evaluate
SPECIFIC LEARNING OUTCOMES – Energy Auditing & Demand Side Management		
C415.1	Understand global energy scenario and energy auditing concepts	Understand
C415.2	Carry out energy audit in motor and power factor improvement techniques to convert it as energy efficient motors.	Apply
C415.3	Determine efficient lighting system with the lighting energy audit.	Apply
C415.4	Choose specific energy instruments for energy auditing.	Analyze
C415.5	Select the suitable techniques of demand side management for energy conservation awareness program.	Analyze
C415.6	Evaluate the techno economic feasibility of the energy conservation technique adopted.	Evaluate
SPECIFIC LEARNING OUTCOMES – Power Quality		
C416.1	Address power quality issues to ensure meeting of standards	Understand
C416.2	Apply the concepts of compensation for sags and swells using voltage regulating devices	Apply

C416.3	Assess harmonic distortion and its mitigation	Evaluate
C416.4	Evaluate All Parameters Of Electrical Circuits.	Evaluate
C416.5	Explain the power measurement data according to standards	Understand
C416.6	<i>Evaluate the Power quality</i> with the suitable tool for reliable electrical distribution system.	Evaluate
SPECIFIC LEARNING OUTCOMES – Digital Signal Processing Laboratory		
C417.1	Experiment concepts of DSP and its applications using MATLAB Software	Analyze
C417.2	Express about the basic signal generation	Understand
C417.3	Examine Fourier Transform Concepts	Apply
C417.4	Design FIR filters	Create
C417.5	Design IIR filters.	Create
C417.6	Demonstrate their abilities towards DSP processor based implementation of DSP systems.	Apply
SPECIFIC LEARNING OUTCOMES – Power Systems & Simulation Laboratory		
C418.1	Determination of sequence impedance and sub transient reactances of synchronous machine	Apply
C418.2	Conduct experiments to analyze LG, LL, LLG, LLLG faults	Analyse
C418.3	Estimate the parameters of three winding transformer equivalent circuit	Evaluate
C418.4	Develop MATLAB program for formation of Y and Z buses	Create
C418.5	Develop MATLAB programs for gauss-seidel and fast decoupled load flow studies.	Create
C418.6	Develop the SIMULINK model for single area load frequency control problem	Create