Course Outcomes

CAY : 2023-24	REG : RG22		Year /Sem: II -I

SNO	Course Outcome Statement	Taxonomy
SPECIFIC LEARNING OUTCOMES – **Complex Variables & Transforms**		
C211.1	Find the analytic functions using C-R equations, the image using conformal mapping and bi-linear transformation.	Apply
C211.2	Use Cauchy's theorem, Cauchy's integral formula and Cauchy's residues theorem to evaluate complex integrations and expansion of complex functions using Taylor's and Laurent's series.	Apply
C211.3	Define Laplace and inverse Laplace transforms of various functions and solve ordinary differential equations using Laplace transform.	Apply
C211.4	Determine Fourier series of periodic functions in a given interval and Parseval's formula- Complex form of Fourier series.	Apply
C211.5	Find the Fourier Transform of certain functions.	Understand
C211.6	Solve the difference equations using Z-Transforms.	Apply
SPECIFIC LEARNING OUTCOMES – **Universal Human Values**		
C212.1	Understand the need, concept and content of value-education individual's life and modifies their aspiration for happiness & prosperity	Understand
C212.2	Comprehend the term self-exploration and its application for self-evaluation and devolpment.	Understand
C212.3	Reconstruct the concepts about different values and discriminate between them.	Understand
C212.4	Understand the concept of co-existence & evaluate the program to ensure self regulation.	Understand
C212.5	Identify the holistic perception of harmony at level of self, family, society, nature .	Understand
C212.6	Apply professional ethics in their future profession & contribute for making a value based society	Remember
SPECIFIC LEARNING OUTCOMES – **Electrical Circuit Analysis & Synthesis**		
C213.1	Understand the analysis of three phase balanced and unbalanced circuits and to measure active and reactive powers in three phase circuits.	Analyze

C213.2	Illustrate the locus diagram for series and parallel circuits	Apply
C213.3	Describe the properties and characteristics of network functions and verify the mathematical constraints for their physical realization.	Understand
C213.4	Synthesize passive one-port networks using standard Foster and Causer forms	Analyze
C213.5	To get knowledge about how to determine the transient response of R-L, R-C, R-L-C series circuits for D.C and A.C excitations	Apply
C213.6	Analyze the two-port networks by calculating the two port network parameters.	Analyze

SPECIFIC LEARNING OUTCOMES – **Analog & Digital Electronics**

C214.1	List various types of feedback amplifiers and oscillators	Remember
C214.2	List out the characteristics of Linear and Digital ICs	Understand
C214.3	Analyze the various applications of linear & Digital ICs	Analyze
C214.4	Solve the application-based problems related to linear and digital ICs	Analyze
C214.5	Design the circuits using either linear ICs or Digital ICs from the given specifications.	Create
C214.6	Able to design and implement digital logic circuits	Create

SPECIFIC LEARNING OUTCOMES – **DC Machines & Transformers**

C215.1	Explain the concepts of magnetic circuits and principles of electromagnetic energy conversion.	Understand
C215.2	Explain the construction, operation and armature windings of a DC generator	Understand
C215.3	Explain the operation of a DC motors.	Understand
C215.4	Demonstrate the speed control of DC motors, testing methods and parallel operation of DC machines	Apply
C215.5	Illustrate the single phase transformers circuits	Apply
C215.6	Analyse the three phase transformers circuits.	Analyze

SPECIFIC LEARNING OUTCOMES – **Electrical Power Generating Systems**

C216.1	Explain the operation of thermal power station and understand the importance of various components in it.	Apply
C216.2	Estimate the coal requirement, cost per kWh generation and number of units generated for thermal power station	Apply
C216.3	Explain the operation of hydro and nuclear power station and understand the importance of various components in them .	Understand
C216.4	Estimate the required flow of river water, cost of generation and number of units generated in hydel power generation	Understand
C216.5	Explain different methods of generating electrical energy from solar energy and wind energy	Understand
C216.6	Explain different methods of generating electrical energy from Bio mass	Apply

SPECIFIC LEARNING OUTCOMES – **Electrical Circuits &Simulation**

Lab		
C217.1	Explain Various Resonance Phenomenon Circuits	Apply
C217.2	Understand and Analyze Various Current Locus Diagrams	Analyse
C217.3	Apply Experimentally for finding Two port parameters	Apply
C217.4	Experimentally verify AC and DC circuits.	Apply
C217.5	Analyse Various circuits using DC Excitation	Analyse
C217.6	Analyse Various circuits using AC Excitation	Analyse
SPECIFIC LEARNING OUTCOMES – **Analog & Digital Electronics Lab**		
C218.1	Analyze various amplifier circuits	Analyze
C218.2	Construct multistage amplifiers	Apply
C218.3	Construct OPAMP based analog circuits	Apply
C218.4	Understand working of logic gates	Understand
C218.5	Construct and implement Combinational circuits	Apply
C218.6	Construct and implement Sequential logic circuits	Apply
SPECIFIC LEARNING OUTCOMES – **DC Machines & Transformers Lab**		
C219.1	Explain the concepts of magnetic circuits and principles of electromagnetic energy conversion.	Understand
C219.2	Explain the construction, operation and armature windings of a DC generator	Understand
C219.3	Explain the operation of a DC motors.	Understand
C219.4	Demonstrate the speed control of DC motors, testing methods and parallel operation of DC machines	Apply
C219.5	Illustrate the single phase transformers circuits	Apply
C219.6	Analyse the three phase transformers circuits.	Analyse
SPECIFIC LEARNING OUTCOMES – **Electrical work shop**		
C2110.1	Demonstrate knowledge on different tools, abbreviations and symbols used in Electrical Engineering	Apply
C2110.2	Measure different electrical quantities using measuring instruments	Apply
C2110.3	Demonstrate how to trouble shoot the electrical equipment's (like fan, grinder, Motor, etc.)	Apply
C2110.4	Understand different types of wiring	Understand
C2110.5	Do wiring and Earthing for residential houses	Apply
C2110.6	Identification of color code and Measurement of wire guages using guage meter.	Understand
SPECIFIC LEARNING OUTCOMES – **Environmental Science**		
C2111.1	knowledge about environment , natural resources and different techniques involved in its conservation.	Understand
C2111.2	nformation about different eco-systems and its functions.	Understand
C2111.3	e the types of bio-diversity along with values and conservation methods.	Analyse
C2111.4	knowledge about various environmental pollutions and able to design the environmental friendly process in engineering.	Apply
C2111.5	knowledge about sustainable development concept and practice it in life, society and Industry.	Apply
C2111.6	nd the both impacts of population growth on environment and needed	Understand

measures to protect the environment .	

Coordinator   HoD

Department of Electrical and Electronics Engineering

Course Outcomes

CAY : 2023-24	Reg : R20	SEM : I	Year : III

SNO	Course Outcome Statement	Taxonomy
SPECIFIC LEARNING OUTCOMES – Power Systems Architecture		
C311.1	Remember and understand the concepts of conventional and nonconventional power generating systems	Remember
C311.2	Apply the economic aspects to the power generating systems.	Apply
C311.3	Analyse the transmission lines and obtain the transmission line parameters and constants.	Analyse
C311.4	Design and Develop the schemes to improve the generation and capability of transmission line to meet the day to day power requirements.	Analyse
C311.5	Design of Distribution Feeders, Voltage Drop and power loss in A.C. Distributors.	Analyse
C311.6	Explain different types of Substations, Various arrangements in Substations	Remember
SPECIFIC LEARNING OUTCOMES – Control Systems		
C312.1	Find the transfer function model for physical system and control system components.	Apply
C312.2	Determine the transfer function for a given system using block diagram and signal flow graph methods.	Apply
C312.3	Compute the time response of systems and steady state errors.	Apply
C312.4	Determine the absolute and relative stsbility of a system using RH and Root loci concepts.	Analyse
C312.5	Analyse the stability of the system and design compensation networks.	Analyse
C312.6	Describe the state variable representation of physical system and solve the state equation.	Apply
SPECIFIC LEARNING OUTCOMES – Measurements & Sensors		
C313.1	Understand the operation of different instruments, different types of errors and their compensation and analyze the different operation of extension range ammeters and voltmeters	Understand
C313.2	Understand the concepts of measurement of active and reactive powers using wattmeters, Distinguish between low and high power factor ranges in watt meters and working of different types of power factor meters	Understand
C313.3	Understand the working principles and construction of different types of Energy meters and Distinguish between CTs and PTs, Determination of ration and phase angle errors	Understand
C313.4	Distinguish between DC and AC potentiometers, Design the various voltage and current measuring instruments for the various electric /	Apply

	magnetic field applications and Identify errors in measurements and to mitigate them for desired precision and accuracy	
C313.5	Understand the bridge configurations and their applications for various ranges of resistance measurement, unknown parameters of Inductance, unknown parameters of Capacitance using the bridges, and Identify errors in measurements and to mitigate them for desired precision and accuracy	Evaluate
C313.6	Analyze different characteristics of periodic and a periodic signals using CRO and Know about Digital Instruments and sensors	Analyse

SPECIFIC LEARNING OUTCOMES – Power Electronics Drives

C314.1	Understand the Electrical Drive system and its components and their importance	Understand
C314.2	Understand the dynamics of Electrical drives	Understand
C314.3	Analyze the speed control of DC motor with single phase and three phase controlled rectifiers	Analyze
C314.4	Apply the knowledge of Choppers for speed control of DC Motors.	Apply
C314.5	Understand the speed control of induction motor with variable voltage and frequency control	Understand
C314.6	Understand the speed control of synchronous motor drives Using Inverters	Understand

SPECIFIC LEARNING OUTCOMES – Java Programming

C315.1	understand object oriented concepts and problem solving techniques	Understand
C315.2	obtain knowledge about the principles of inheritance and polymorphism	Apply
C315.3	implement the concept of packages, interfaces, exception handling and concurrency mechanism	Evaluate
C315.4	design the GUIs using applets and swing controls.	Apply
C315.5	Analyze the Java Database Connectivity Architecture Model.	Analyse
C315.6	Understand basic steps in developing JDBC applications.	Evaluate

SPECIFIC LEARNING OUTCOMES – Control Systems Lab

C316.1	Design the controllers/compensators to achieve desired specifications	Apply
C316.2	Understand the effect of location of poles and zeros on transient and steady state behavior of systems	Understand
C316.3	Assess the performance, in terms of time domain specifications, of first and second order systems.	Evaluate
C316.4	Design PID controllers for given control system model	Apply
C316.5	Determine the response of a given control system model	Apply
C316.6	Use MATLAB/SIMULINK software for control system analysis and design	Apply

SPECIFIC LEARNING OUTCOMES – Measurements & Sensors Lab

C317.1	Measure error of PMMC Voltmeters, PMMC Ammeters and Single Phase Energy meter.	Understand
C317.2	Examine the output of turns ratio and ratio error of CT.	Apply
C317.3	Analyze the measuring parameters of Anderson & Schering bridge.	Analyse
C317.4	Accurate determination of resistance, inductance and capacitance using D.C and A.C Bridges.	Apply

C317.5	Acquire hand-on experience on measurement of choke coil.	Understand
C317.6	Measure reactive power in 3-phase circuit using single watt meter	Apply

SPECIFIC LEARNING OUTCOMES – Soft skills

C318.1	Memorize various elements of effective communicative skills	Apply
C318.2	Interpret people at the emotional level through emotional intelligence soft skills	Apply
C318.3	Apply critical thinking skills in problem solving	Analyse
C318.4	Analyze the needs of an organization for team building	Analyse
C318.5	Judge the situation and take necessary decisions as a leader	Analyse
C318.6	Develop social and work- life skills as well as personal and emotional well-being	Analyse

SPECIFIC LEARNING OUTCOMES – Evaluation of Community Service Project

C319.1	Understand the living conditions of the people who are around them	Understand
C319.2	Understand societal consciousness, attitudinal change, sensibility, responsibility and accountability.	Understand
C319.3	Uunderstand the aware of their inner strength and help them to find new /out of box solutions to the social problems.	Understand
C319.4	Understand how to be as socially responsible citizens	Understand
C319.5	Develop activities in the community in coordination with public and government authorities.	Apply
C319.6	Develop a holistic life perspective among the students.	Apply

SPECIFIC LEARNING OUTCOMES – Environmental Science

C3110.1	Gain the knowledge about environment, natural resources and different techniques involved in its conservation.	Understand
C3110.2	Get the information about different eco-systems and its functions.	Understand
C3110.3	Recognize the types of bio-diversity along with values and conservation methods.	Analyse
C3110.4	Gain the knowledge about various environmental pollutions and able to design the environmental friendly process in engineering.	Apply
C3110.5	Gain the knowledge about sustainable development concept and practice it in life, society and Industry.	Apply
C3110.6	Understand the both impacts of population growth on environment and needed measures to protect the environment .	Understand

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GEETHANJALI INSTITUTE OF SCIENCE & TECHNOLOGY::NELLORE

Department of Electrical and Electronics Engineering

Course Outcomes

CAY : 2023-24	Reg : R20	SEM : I	Year : IV

SNO	Course Outcome Statement	Taxonomy
SPECIFIC LEARNING OUTCOMES – Power System Operation and Control		
C411.1	Explain an optimal operation setup of power system which minimizes operation costs and power loss to meet the desired needs.	Apply
C411.2	Illustrate about thermal and hydro power plants operation in meeting the load demand optimally.	Analyze
C411.3	Acquire the knowledge of Turbine Speed Governing System.	Understand
C411.4	Discuss single area load frequency control and two area load frequency control.	Apply
C411.5	Apply the compensating techniques to control power flows, frequency and voltage in power system.	Apply
C411.6	Understand the necessity of deregulation aspects and demand side management problems in the modern power system era.	Understand
SPECIFIC LEARNING OUTCOMES – ELECTRICAL DISTRIBUTION SYSTEM AUTOMATION		
C412.1	Understand basics of distribution systems and substations	Understand
C412.2	Understand about modelling of various loads	Understand
C412.3	Perform distribution load flow solutions	Apply
C412.4	Understand about installation of capacitors at various locations	Understand
C412.5	Evaluate power loss and feeder cost	Apply
C412.6	Know the principles of SCADA, Automation distribution system and management	Understand
SPECIFIC LEARNING OUTCOMES – Electric Vehicle Technologies		
C413.1	Understand the concepts of electric vehicles, hybrid electric vehicles and their impact on environment	Understand
C413.2	Describe different configurations of electric and hybrid electric drive trains	Analyze
C413.3	Explain plug – in hybrid electric vehicle architecture, design and component sizing used in hybrid electric vehicles.	Apply
C413.4	Analyze the drive-train topologies and advanced propulsion techniques	Analyze
C413.5	Analyze hybrid energy storage methodologies	Analyze
C413.6	Analyze suitable power converter topologies for motor control and hybrid energy storage	Analyze
SPECIFIC LEARNING OUTCOMES – Management Science		
C414.1	Explain the basic concepts of management in modern contexts	Understand
C414.2	Discuss the organization structures and principles	Understand

C414.3	Outline the production and marketing aspects	Analyze
C414.4	Explain the roles and responsibilities of Human Resource Manager	Understand
C414.5	Prepare and implement strategies in the modern management	Create
C414.6	Outline the modern management practices	Analyze

SPECIFIC LEARNING OUTCOMES – Software Engineering

C415.1	Illustrate the different software process models and able to categorize the types of soft wares	Apply
C415.2	Use the requirements analysis and specification for software development	Apply
C415.3	Sketch Software Design for product implementation.	Apply
C415.4	Apply Coding guidelines for conventional and object oriented programming.	Apply
C415.5	Apply Testing guidelines for conventional and object oriented programming.	Apply
C415.6	Use various non functional requirements for design and development of product or process.	Apply

SPECIFIC LEARNING OUTCOMES – Cyber Security

C416.1	Describe the cybercrimes and understand the Indian ITA 2000	Understand
C416.2	Illustrate the vulnerabilities in any computing system and find the solutions	Remember
C416.3	Predict the security threats of the future	Apply
C416.4	Demonstrate the protection mechanisms	Analyze
C416.5	Develop Security and privacy implications	Apply
C416.6	Design security solutions for organizations	Analyze

SPECIFIC LEARNING OUTCOMES – Energy Conservation and Audit Laboratory

C417.1	Understand energy conservation policies in India.	Understand
C417.2	Apply the knowledge of energy scenario	Apply
C417.3	Design energy conservation techniques in electrical machines.	Analyze
C417.4	Apply energy conservation techniques in electrical installations, Co-generation and relevant tariff for reducing losses in facilities	Analyze
C417.5	Examine the different energy efficient technologies in electrical system	Analyze
C417.6	Analyze energy audit for electrical system.	Analyze

SPECIFIC LEARNING OUTCOMES – Evaluation of Industry Internship

C418.1	Communicate effectively through report preparation and presentation	Understand
C418.2	Describe the use of advanced tools and techniques available in industry and also industrial safety measures practiced in industry	Apply
C418.3	Develop interpersonal and team skills, confidence of working in industry, awareness about the working environment and self-learning capability	create
C418.4	learn the application of knowledge in real world problems.	Understand

| C418.5 | Get exposure to team-work and leadership quality | Analyse |
| C418.6 | Deal with industry-professionals and ethical issues in the work environment | Apply |

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