



Excellence in Higher Education
AKSHAYA

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Recognized by UGC and Affiliated to Anna University)

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
COURSE OUTCOMES (REGULATION 2021)

SEMESTER III

Course Code / Course Name: MA3303 / Probability and Complex Functions

CO No.	Course Outcomes (COs)
C201.1	Understand the fundamental concepts of probability with a thorough knowledge of standard distributions that can describe certain real-life phenomenon
C201.2	Understand the basic concepts of One and Two dimensional random variables and apply them to model engineering problems.
C201.3	Develop an understanding of the standard techniques of complex variable theory in particular analytic function and its mapping property.
C201.4	Familiarize the students with complex integration techniques and contour integration techniques which can be used in real integrals.
C201.5	Acquaint the students with differential equations which are significantly used in engineering problems.

Course Code / Course Name: EE3301 / Electromagnetic Fields

CO No.	Course Outcomes (COs)
C202.1	Interpret the concepts of electromagnetic vector fields and various transformation techniques.
C202.2	Outline the concepts of electrostatics, electrical potential, energy density and their applications.
C202.3	Implement the concepts of magneto statics magnetic flux density, scalar and vector potential.
C202.4	Explain different methods of emf generation and Maxwell's equations.
C202.5	Explain the concept of electromagnetic waves and characterizing parameters.

Course Code / Course Name: EE3302 / Digital Logic Circuits

CO No.	Course Outcomes (COs)
C203.1	Apply Boolean algebraic principles and simplifications methodologies pertinent to digital logic circuits for optimizing design efficiency.
C203.2	Create diverse combinational digital circuits employing a variety of logic gates.
C203.3	Examine synchronous sequential circuits through analysis and design methodologies.

C203.4	Analyze asynchronous circuits for stability and hazards; implement designs using programmable logic devices like PROM, PLA, and FPGA.
C203.5	Design RTL circuits using VHDL, covering combinational and sequential logic; create and test digital systems like adders, counters, and multiplexers.

Course Code / Course Name: EC3301 / Electron Devices and Circuits

CO No.	Course Outcomes (COs)
C204.1	Explain the structure and working operation of basic electronic devices.
C204.2	Design and analyze amplifiers.
C204.3	Analyze frequency response of BJT and MOSFET amplifiers
C204.4	Design and analyze feedback amplifiers and oscillator principles.
C204.5	Design and analyze power amplifiers and supply circuits.

Course Code / Course Name: EE3303 / Electrical Machines - I

CO No.	Course Outcomes (COs)
C205.1	Understand the principle of Electromechanical Energy Conversion Process for singly and Multiple excited systems.
C205.2	Understand the construction, operation and characteristics of various DC generators.
C205.3	Analyse the performance of DC machine with different tests.
C205.4	Illustrate the equivalent circuit of single phase transformer and predetermine the Efficiency and regulation.
C205.5	Enumerate the three phase transformer connections and its advantages.

Course Code / Course Name: CS3353 / C Programming and Data Structures

CO No.	Course Outcomes (COs)
C206.1	Develop C programs for any real world/technical application.
C206.2	Apply advanced features of C in solving problems.
C206.3	Implement linear and non-linear data structure operations.
C206.4	Apply to use appropriate linear/non-linear data structure operations for solving a given problem.
C206.5	Acquire knowledge about appropriately use sort and search algorithms for a given application.

Course Code / Course Name: EC3311 / Electronic Devices and Circuits Laboratory

CO No.	Course Outcomes (COs)
C207.1	Examine the characteristics of PN, Zener diodes, and BJTs in CE, CC, and CB configurations, as well as JFETs and UJTs, through experimentation.
C207.2	Investigate the frequency response characteristics of a Common Emitter amplifier and passive filters experimentally.
C207.3	Evaluate the characteristics of RC phase shift, LC oscillators, and FET-based differential amplifiers in a practical setup.
C207.4	Analyze the characteristics of half-wave and full-wave rectifier with and without filters experimentally
C207.5	Calculate the frequency and phase angle using CRO experimentally

Course Code / Course Name: EE3311 / Electrical Machines Laboratory – I

CO No.	Course Outcomes (COs)
C208.1	Understand the open circuit and load characteristics of DC generators.
C208.2	Illustrate the performance of DC machine with various Tests.
C208.3	Understand the characteristics of single phase transformers with various Tests.
C208.4	Understand the construction of dc motor starters and three phase Transformer connections.
C208.5	Predetermine the efficiency, regulation and equivalent circuit parameters of transformers.

Course Code / Course Name: CS3362 / C Programming and Data Structures Laboratory

CO No.	Course Outcomes (COs)
C209.1	Use different constructs of C and develop applications
C209.2	Write functions to implement linear and non-linear data structure operations
C209.3	Suggest and use the appropriate linear / non-linear data structure operations for a given
C209.4	Apply appropriate hash functions that result in a collision free scenario for data storage and Retrieval
C209.5	Implement sorting and searching algorithms for given application

Course Code / Course Name: GE3391 / Professional Development

CO No.	Course Outcomes (COs)
C210.1	Demonstrate the ability to create well-structured and professional documents using MS Word for technical and academic purposes.
C210.2	Utilize MS Excel to perform data operations, analyse trends, and visualize data effectively using tables, charts, and graphs.
C210.3	Record and retrieve data using MS Excel to support data-driven decision-making and information sharing.
C210.4	Create interactive and visually appealing academic presentations using MS PowerPoint, incorporating tables, graphs, media objects, and interlinked elements.
C210.5	Analyse and interpret visual data representations and utilize them for effective communication and decision-making.


Course Code / Course Name: GE3451 / Environmental Sciences and Sustainability

CO No.	Course Outcomes (COs)
C211.1	Understand the functions of the environment, ecosystems, and biodiversity, while emphasizing their conservation and importance for ecological balance.
C211.2	Identify the causes and effects of environmental pollution and natural disasters, and propose preventive measures to address these issues for the betterment of society.
C211.3	Analyse renewable and non-renewable resources and apply sustainable measures to preserve them for future generations through resource optimization.

C211.4	Recognize the different goals of sustainable development and apply them to achieve suitable technological advancements and societal progress.
C211.5	Demonstrate the knowledge of sustainability practices by identifying green materials, understanding energy cycles, and evaluating the role of sustainable urbanization in modern development.

Course Code / Course Name: EE3401 / Transmission and Distribution

CO No.	Course Outcomes (COs)
C212.1	Explain the structure of power systems and compute transmission line parameters for various configurations, considering skin and proximity effects.
C212.2	Analyze transmission line models to evaluate line performance, including the Ferranti effect and corona impact.
C212.3	Perform the mechanical design of transmission lines, grounding systems, and assess the role of insulators in transmission systems.
C212.4	Design underground cables and conduct performance analysis for their effective operation.
C212.5	Evaluate the modelling, performance, and modern advancements in distribution systems.

Course Code / Course Name: EE3402 & Linear Integrated Circuits

CO No.	Course Outcomes (COs)
C213.1	Describe the monolithic IC fabrication process and the fabrication of diodes, capacitors, resistors, FETs, and PV cells.
C213.2	Analyze the characteristics and basic applications of operational amplifiers, including inverting/non-inverting amplifiers, summers, differentiators, integrators, and V/I and I/V converters.
C213.3	Discuss the design and applications of op-amp-based circuits, such as instrumentation amplifiers, log/antilog amplifiers, analog multipliers/dividers, active filters, comparators, and waveform generators.
C213.4	Explain the principles, functional blocks, characteristics, and applications of IC-based timers, PLLs, and analog multipliers.
C213.5	Explore the applications of ICs in instrumentation amplifiers, voltage regulators, SMPS, and function generators.

Course Code / Course Name: EE3403 / Measurements and Instrumentation

CO No.	Course Outcomes (COs)
C214.1	Demonstrate an understanding of the fundamental principles of measurement in engineering.
C214.2	Explain the structural elements and working principles of various measuring instruments.
C214.3	Analyze the significance and applications of bridge circuits in measurement systems.
C214.4	Explore the characteristics and functionality of various transducers through experiments.
C214.5	Apply concepts of digital and virtual instrumentation in experimental setups.

Course Code / Course Name: EE3404 / Microprocessor and Microcontroller

CO No.	Course Outcomes (COs)
C215.1	Develop assembly language programs for microprocessors and microcontrollers.
C215.2	Design peripheral interfacing with microprocessors and microcontrollers.
C215.3	Analyze the microprocessor-based systems for control and monitoring applications.
C215.4	Design microcontroller-based systems for control and monitoring applications.
C215.5	Understand the advanced architectures in the evolving field of microprocessors.

Course Code / Course Name: EE3405 / Electrical Machines - II

CO No.	Course Outcomes (COs)
C216.1	Explain the construction and working principles of synchronous generators.
C216.2	Describe the construction and working principles of synchronous motors.
C216.3	Understand the construction and working principles of three-phase induction motors.
C216.4	Demonstrate knowledge of the starting methods and speed control techniques for induction motors.
C216.5	Understand the basic principles and operation of single-phase induction motors and special electrical machines.

Course Code / Course Name: EE3411 / Electrical Machines Laboratory - II

CO No.	Course Outcomes (COs)
C217.1	Understand EMF and MMF methods in synchronous machines.
C217.2	Analyze the characteristics of V-curves and inverted V-curves for synchronous machines.
C217.3	Conduct tests on alternators to evaluate performance indices using analytical and graphical methods, highlighting the importance of synchronous machines.
C217.4	Perform tests on single and three-phase induction motors to assess their performance indices using standard methods.
C217.5	Demonstrate knowledge of loss separation techniques in electrical machines.

Course Code / Course Name: EE3412 / Linear and Digital Circuits Laboratory

CO No.	Course Outcomes (COs)
C218.1	Understand and implement Boolean functions in digital circuits.
C218.2	Recognize the significance of code conversion in digital systems.
C208.3	Design circuit using digital ICs such as decoders, multiplexers, and registers.
C218.4	Apply operational amplifiers (Op-Amps) in various applications.
C218.5	Design counters using analog ICs like timers and VCOs, as well as digital ICs like flip-flops and counters.

Course Code / Course Name: EE3413 & Microprocessor and Microcontroller Laboratory

CO No.	Course Outcomes (COs)
C219.1	Develop assembly language programs for microprocessors.
C219.2	Develop assembly language programs for microcontrollers.
C219.3	Design and implement peripheral interfacing with microprocessors and microcontrollers.
C219.4	Analyze microprocessor-based systems for control and monitoring applications.
C219.5	Design and simulate microcontroller-based systems for control and monitoring applications.