

**COURSE OUTCOMES**

Course Code / Course Name: MA3303 Probability and Complex Functions

CO No.	Course Outcomes (COs)
C201.1	Explain the concepts of probability and standard distributions in real life phenomenon.
C201.2	Summarize the notions of covariance, correlation and regression in communication engineering
C201.3	Explain the basic concepts of analytic functions and conformal mapping in the complex field.
C201.4	Illustrate the Cauchy's integration, residues and complex contour integration in the basic level of Engineering field.
C201.5	Apply the concept of differentiation in solving differential equation.

Course Code / Course Name: EE3301 Electromagnetic Fields

CO No.	Course Outcomes (COs)
C202.1	Summarize the concepts of electromagnetic vector fields and various transformation techniques
C202.2	Interpret the concepts of electrostatics, electrical potential, energy density and their applications.
C202.3	Make use of the concepts of magneto statics magnetic flux density, scalar and vector potential.
C202.4	Explain the concepts of Faraday's law, induced EMF and Maxwell's equations.
C202.5	Outline the concepts of electromagnetic waves and Pointing vector.

Course Code / Course Name: EE3302 Digital Logic Circuits

CO No.	Course Outcomes (COs)
C203.1	Outline the number systems, Quine McCluskey method for switching function minimization and digital logic families.
C203.2	Solve combinational logic circuits problems.
C203.3	Solve problems on synchronous sequential logic circuits.
C203.4	Solve problems on asynchronous sequential circuits and PLDs
C203.5	Develop a VHDL programs for combinational and sequential logic circuits.

Course Code / Course Name: EC3301 Electron Devices and Circuits

CO No.	Course Outcomes (COs)
C204.1	Explain the basic structure, operation, characteristics and application of PN junction devices
C204.2	Explain the structure and operation of transistors of BJT, FET, UJT and thyristors
C204.3	Illustrate the performance of various configurations of BJT & MOSFET based amplifier
C204.4	Infer the characteristics of cascade & differential amplifier
C204.5	Interpret various feedback amplifier and oscillators

Course Code / Course Name: EE3303 Electrical Machines - I

CO No.	Course Outcomes (COs)
C205.1	Apply the laws governing the electromechanical energy conversion for singly and multiple excited systems
C205.2	Demonstrate the construction, working principle and various performance characteristics of DC generator
C205.3	Explain the working principle, characteristics, starting, speed control and compute parameters of the DC motor by conducting suitable tests
C205.4	Interpret the construction, working principle, equivalent circuit of transformer and predetermine the efficiency and regulation
C205.5	Illustrate the working principle of auto transformer, three phase transformer with different types of connections

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	Apply Linear data structures to solve various computing problems.
C206.4	Solve different computing problems using non-linear data structure and hashing techniques.
C206.5	Apply different sorting, searching techniques to solve real world problems.

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

CO No.	Course Outcomes (COs)
C207.1	Make use of experimental methods to verify the Ohm's and Kirchhoff's Laws
C207.2	Analyze experimentally the load characteristics of electrical machines
C207.3	Analyze the characteristics and applications of basic electronic devices
C207.4	Examine the working of logic gates and combinational circuits
C207.5	Utilize DSO to measure the various parameters

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

CO No.	Course Outcomes (COs)
C208.1	Acquire hands-on experience conducting various tests on alternators and obtaining their performance indices using standard analytical as well as graphical methods to understand the importance of synchronous machines.
C208.2	Experiment with the synchronous motor to determine the characteristics of V and Inverted V curves
C208.3	Acquire hands-on experience conducting various tests on single phase and three induction motors and obtaining their performance indices using standard analytical as well as graphical methods.
C208.4	Select the suitable test for find the separation no load losses in three phase induction motor
C208.5	Classify the various starters that are used to start the induction motors.

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

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

Course Code / Course Name: GE3361 Professional Development

CO No.	Course Outcomes (COs)
C210.1	Illustrate the hard skill and soft skill in employability and career skills.
C210.2	Explain the technical presentation.
C210.3	Show the performance in Interview and group discussions
C210.4	Build professional etiquette
C210.5	Compare the networking proficiency and social protocol.

Course Code / Course Name: GE3451 Environmental Sciences and Sustainability

CO No.	Course Outcomes (COs)
C211.1	Explain the concept of ecosystem, values of biodiversity threats and outline the methods to conserve the biodiversity.
C211.2	Relate the causes and effects of Environmental Pollution and provide technical solution for pollution control.
C211.3	Interpret the types of natural resources available and measures to utilize them sustainably.
C211.4	Summarize the sustainability goals and manage the industrial environment.
C211.5	Infer the sustainable practices and principles of green engineering.

Course Code / Course Name: EE3401 Transmission and Distribution

CO No.	Course Outcomes (COs)
C212.1	Solve the line parameters of the transmission line.
C212.2	Apply the concept on the performance calculation of transmission lines.
C212.3	Apply the concept for the mechanical design of the transmission line.
C212.4	Explain the construction and types of underground cables.
C212.5	Interpret the importance of distribution of the electric power in power system.

Course Code / Course Name: EE3402 Linear Integrated Circuits

CO No.	Course Outcomes (COs)
C213.1	Outline the process in IC fabrication procedure
C213.2	Explain a linear and non linear applications of OP – AMPS
C213.3	Classify the various types of op-amp with its application
C213.4	Explain the functional blocks and the applications of special ICs like timers, PLL circuits.
C213.5	Infer the needs of Instrumentation amplifier and voltage regulators.

Course Code / Course Name: EE3403 Measurements and Instrumentation

CO No.	Course Outcomes (COs)
C214.1	Interpret Basic functional elements of instrumentation.
C214.2	Explain the structural elements of various instruments.
C214.3	Outline the importance of bridge circuits.
C214.4	Illustrate various transducers and their characteristics.
C214.5	Explain the concept of digital instrumentation and virtual instrumentation.

Course Code / Course Name: EE3404 Microprocessor and Microcontroller

CO No.	Course Outcomes (COs)
C215.1	Illustrate the architecture and functionalities of 8085 Microprocessor.
C215.2	Develop the Assembly language program in real time applications using 8085 Microprocessor.
C215.3	Outline the external peripherals interfacing with the 8085 microprocessor
C215.4	Explain the architecture and functionalities of 8051 microcontroller.
C215.5	Explain the RISC based microprocessor architecture.

Course Code / Course Name: EE3405 Electrical Machines - II

CO No.	Course Outcomes (COs)
C216.1	Explain the construction, working principle and performance of a synchronous generator
C216.2	Explain the construction, working principle and performance of a synchronous motor
C216.3	Interpret the construction, working principle, testing and performance of a three phase Induction Motor
C216.4	Acquire knowledge about the starting methods, speed control and breaking of an induction motor
C216.5	Classify the basic principles, construction and working 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	Acquire hands-on experience conducting various tests on alternators and obtaining their performance indices using standard analytical as well as graphical methods to understand the importance of synchronous machines.
C217.2	Experiment with the synchronous motor to determine the characteristics of V and Inverted V curves
C217.3	Acquire hands-on experience conducting various tests on single phase and three induction motors and obtaining their performance indices using standard analytical as well as graphical methods.
C217.4	Select the suitable test for find the separation no load losses in three phase induction motor
C217.5	Classify the various starters that are used to start the induction motors.

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

CO No.	Course Outcomes (COs)
C218.1	Design and implementation of Boolean Functions.
C218.2	Identify and design the code conversion, Parity generator& Encoders and Decoders.
C218.3	Experiment with performance of, counters, multiplexer, comparator 4-bit shift registers& flip flops
C218.4	Construct the basics of linear and non-linear integrated circuits.
C218.5	Design and implement of frequency characteristics 566 IC, Voltage Regulator using IC LM317.



Course Code / Course Name: EE3413 Microprocessor and Microcontroller laboratory

CO No.	Course Outcomes (COs)
C219.1	Outline the arithmetic operations using assembly language program in 8085.
C219.2	Experiment with the different Interfacing Programs like I/O port, traffic light controller, A/D, D/A with 8085 processor.
C219.3	Demonstrate the basic instructions with Programming I/O Port and timer of 8051 Micro controller.
C219.4	Interpret the Interfacing Programs like A/D, D/A with 8051 processor.
C219.5	Develop the application programs for PIC microcontroller

Course Code / Course Name: EE3501 Power System Analysis

CO No.	Course Outcomes (COs)
C301.1	Model the power system under steady state operating condition
C301.2	Apply iterative techniques to calculate the steady state power flow
C301.3	Make use of thevenin's theorem & Bus impedance matrix to calculate symmetrical fault current
C301.4	Acquire state of the power system for the various unsymmetrical fault
C301.5	Identify the stability of the power system using numerical methods

Course Code / Course Name: EE3591 Power Electronics

CO No.	Course Outcomes (COs)
C302.1	Explain the various power semiconductor devices and their switching characteristics
C302.2	Choose different types of AC-DC converters for Real time applications
C302.3	Illustrate the basic topologies, operation & switching of DC-DC converters
C302.4	Infer the different modulation technique & harmonic reduction methods for Inverters
C302.5	Illustrate the working of AC-AC converters & their applications

Course Code / Course Name: EE3503 Control System

CO No.	Course Outcomes (COs)
C303.1	Represent simple systems in transfer function and state variable forms
C303.2	Analyze simple systems in time domain.
C303.3	Analyze simple systems in frequency domain
C303.4	Infer the stability of systems in time and frequency domain
C303.5	Interpret characteristics of the system and find out solution for simple control problems.

Course Code / Course Name: EE3511 Power Electronics Laboratory

CO No.	Course Outcomes (COs)
C308.1	Determine the characteristics of SCR, IGBT, TRIAC, MOSFET and IGBT
C308.2	CO2: Find the transfer characteristics of full converter, semi converter, step up and step down choppers by simulation experimentation.
C308.3	Analyze the voltage waveforms for PWM inverter using various modulation techniques.
C308.4	Design and experimentally verify the performance of basic DC/DC converter topologies used for SMPS
C308.5	Understand the performance of AC voltage controllers by simulation and experimentation

Course Code / Course Name: EE3512 Control and Instrumentation Laboratory

CO No.	Course Outcomes (COs)
C309.1	To model and analyze simple physical systems and simulate the performance in analog and digital platform.
C309.2	To design and implement simple controllers in standard forms.
C309.3	To design compensators based on time and frequency domain specifications.
C309.4	To design a complete closed control loop and evaluate its performance for simple physical systems.
C309.5	To analyze the stability of a physical system in both continuous and discrete domains.

Course Code / Course Name: EE3601 Protection and Switchgear

CO No.	Course Outcomes (COs)
C310.1	Understand and select proper protective scheme and type of earthing.
C310.2	Explain the operating principles of various relays.
C310.3	Suggest suitable protective scheme for the protection of various power system apparatus
C310.4	Analyze the importance of static relays and numerical relays in power system protection.
C310.5	Summarize the merits and demerits and application areas of various circuit breakers.

Course Code / Course Name: EE3602 Power System Operation and Control

CO No.	Course Outcomes (COs)
C311.1	Understand the day – to – day operation of power system
C311.2	Model and analyse the control actions that are implemented to meet the minute-to minute variation of system real power demand.
C311.3	Model and analyze the compensators for reactive power control and various devices used for voltage control.
C311.4	Prepare day ahead and real time economic generation scheduling
C311.5	Understand the necessity of computer control of power systems.

Course Code / Course Name: EE3611 Power System Laboratory

CO No.	Course Outcomes (COs)
C317.1	Model and analyze the performance of the transmission lines.
C317.2	Perform power flow, short circuit, and stability analysis for any power system network.
C317.3	Understand, design, and analyze the load frequency control mechanism.
C317.4	Perform optimal scheduling of generators and compute the state of the power system.
C317.5	Understand, analyze, and apply the relays for power system protection.

Course Code / Course Name: EE3701 High Voltage Engineering

CO No.	Course Outcomes (COs)
C401.1	Explain various overvoltage's and its effects on power systems.
C401.2	Understand the breakdown phenomena in different medium under uniform and non- uniform fields.
C401.3	Explain the methods of generating and measuring High DC, AC, Impulse voltage and currents
C401.4	Suggest and Conduct suitable HV testing of Electrical power apparatus as per Standards
C401.5	Explain the Industrial Applications of Electrostatic Fields.