Sri SAIRAM COLLEGE OF ENGINEERING
Anekal, Bengaluru
ISO 9001:2015 certified Institution
Approved by AICTE, New Delhi
Affiliated to Visvesvaraya Technological University
www.sairamce.edu.in

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
2017 SCHEME CO's

Course Code	Course Name	CO Code	CO
17MAT31-EEE	17MAT31 - ENGINEERING MATHEMATICS - 3	CO1	Know the use of periodic signals and Fourier series to analyze circuits and system communication.
		CO2	Explain the general linear system theory for continuous-time signals and digital signal processing using the Fourier transforms and Z-transform.
		CO3	Employ appropriate Numerical methods to solve algebraic and transcendental equations.
		CO4	Apply Greens theorem, Divergence theorem and Stokes theorem in various applications in the field of elector-magnetic and gravitational fields and fluid flow problems.
		CO5	Determine the externals of functionals and solve the simple problems of the calculus of variations.
17EE32	17EE32-ELECTRIC CIRCUIT ANALYSIS	CO1	Understanding the basics concepts, basic laws and methods of analysis of DC and AC network. Reduce the complexity of network using source shifting, source transformation and network reduction using transformation
		CO2	Solve complex electric circuits using network theorems.
		CO3	Discuss resonance in series and parallel circuits. Discuss the importance of initial conditions and their evaluation
		CO4	Synthesize typical waveforms using Laplace transformation.
		CO5	Solve unbalanced three phase systems. Evaluate the performance of two port network
17EE33	17EE33-TRANSFORMERS AND GENERATORS	CO1	Analyze the characteristics and operation of the synchronous generators connected to infinite busbar

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		CO2	Explain the use of polarity and sumpner's tests conducted, auto transformer, tap changing transformer and need of operating transformers in parallel.
		CO3	Explain the use of tertiary winding transformer, armature reaction, commutation, their effects in DC generators, construction, armature reaction and operation of the synchronous generators
		CO4	Explain the construction, operation, performance of single phase and three phase transformers and different connections for the three phase operations, their advantages and applications
		CO5	Explain the performance of Synchronous generators and evaluate the voltage regulation by different methods.
17EE34	17EE34-ANALOG ELECTRONIC CIRCUITS	CO1	Utilize the characteristics of transistor for different applications.
		CO2	Analyze the Transistor Response at High & Low Frequency.
		CO3	Design, analyze and test Feed Back Amplifiers.
		CO4	Design, analyze and test transistor circuitry as amplifiers and oscillators.
		CO5	Distinguish Different types of MOSFETs.
17EE35	17EE35-DIGITAL SYSTEM DESIGN	CO1	Simplify switching equations generated from truth tables.
		CO2	Design combinational logic circuits; adders, Subtractors and comparators.
		CO3	Design synchronous sequential circuits; latches, flip-flops, binary counters and Mod – 6 counters.
		CO4	Design and constructs state diagram of Mealy and Moore synchronous sequential circuit models
		CO5	Describe the structure of HDL module,

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			Comparison between VHDL and Verilog, and concept of data-flow description
17EE36	17EE36-ELECTRICAL & ELECTRONIC MEASUREMENTS	CO1	Understand the characteristics of • Measure resistance, inductance and capacitance using bridges and determine earth resistance
		CO2	Write down in details with application, if applicable, Explain the working of various meters used for measurement of Power & Energy
		CO3	Understand the details of Understand the adjustments, calibration & errors in energy meters
		CO4	Learn in details with examples methods of extending the range of instruments & instrument transformers
		CO5	Deliberate the characteristics of Explain the working of different electronic instruments, display devices and recording mechanisms
17EEL37	17EEL37-ELECTRICAL MACHINES LAB - 1	CO1	Evaluate the performance of transformers from the test data obtained
		CO2	Connect and operate two single phase transformers of different KVA rating in parallel.
		CO3	Connect single phase transformers for three phase operation and phase conversion.
		CO4	Compute the voltage regulation of synchronous generator using the test data obtained in the laboratory
		CO5	Evaluate the performance of synchronous generators from the test data and Assess the performance of synchronous generator connected to infinite bus.
17EEL38	17EEL38-ELECTRONICS LAB	CO1	Use universal gates and ICs for code conversion and arithmetic operations
		CO2	Design and test different diode circuits,

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			frequency response of the amplifier
		CO3	Design and test amplifier and oscillator circuits and analyze their performance.
		CO4	Design & Test the Amplifier circuits for different configuration
		CO5	Design and verify on of different counters.
17KKM39 /49-EEE	17KKM39/49- KANNADA MANASU	CO1	Understand Kannada as administrative Language, Patra Vyavahara & Kannada Grammer.
		CO2	Become Familiar about Da. Ra. Bendre, Dr. Sir. M Vishveshvaraya, Shivarama Karanth & Kuvempu.BGL Swamy.
		CO3	Collected information about poets & Authors like Triveni, Su. Ram Ekkundi, P Lankesh, K.P Poornachandra Tejaswi Gandi story by Besagara halli Ramanna.
		CO4	Analyse the works of Belgiya haadu by Siddalingaiah, Ella hudugiyara kanassu & story Neethu.
		CO5	Understand Parisara Lekhana, Vrutthi shikshanadalli Kannada madyama & Konave gowda.
17KKL39/ 49-EEE	17KKL39/49-KANNADA KALI	CO1	To Read and understand the simple words in Kannada language, meaning in English ,equivalent words in english, grammar, form the sentences in kannada language, dialogue creation, learn about epics.
		CO2	To learn Kannada for Communication ,enquiries, sentence formation, request writing, conversations and meaning in English, adjectives.
		CO3	To learn creating present tense kannada sentences, potential forms, no-past continuous , imperative,understanding and answering.
		CO4	Learn to form Past tense sentences, discussing about a film, describing brindavan garden.

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		CO5	To learn to converse routine activities of a student, grammar, present, past and perfect negations, reflexive, telephonic conversations, and to create some interest on Kannada Language and Literature.
17MAT41-EEE	17MAT41-Engineering Mathematics-IV	CO1	1. Solve first order ordinary differential equation arising in flow problems using single step and multi step numerical methods.
		CO2	2. Solve second order ordinary differential equation arising in flow problems using single step numerical methods and Illustrate problems of potential theory, quantum mechanics and heat conduction by employing notions and properties of Bessel's functions and Legendre's polynomials
		CO3	3. Explain the concepts of analytic functions, residues, poles of complex potentials and describe conformal and Bilinear transformation arising in field theory and signal processing
		CO4	Develop probability distribution of discrete, continuous random variables and joint probability distribution occurring in digital signal processing, information theory and design engineering
		CO5	Demonstrate testing of hypothesis of sampling distributions and illustrate examples of Markov chains related to discrete parameter stochastic process.
17EE42	17EE42-Power Generation and Economics (Core)	CO1	Describe the working of hydroelectric power plant and state functions of major equipment of the power plants.
		CO2	Describe the working of steam, diesel and gas turbine power plants and state functions of major equipment of the power plants.
		CO3	Describe the working of nuclear power

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			plants and state functions of major equipment of the power plants.
		CO4	Classify various substations and explain the importance of grounding.
		CO5	Understand the economic aspects of power system operation and its effects.
17EE43	17EE43-Transmission and Distribution (Core)	CO1	Explain the concepts of various methods of generation of power and understand the importance of HVAC, EHVAC, UHVAC and HVDC transmission
		CO2	Calculate the parameters of the transmission line for different configurations and assess the performance of line Design and analyze overhead transmission system for a given voltage level.
		CO3	Explain the classification of lines, understand corona and methods to reduce it,the use of underground cables, construction ,specifications.
		CO4	Discuss different distribution systems and analyze with different types of loads.
		CO5	Evaluate different types of distribution systems, reliability, probability and the limitations of distribution systems.
17EE44	17EE44-Electric Motors (Core)	CO1	Explain the constructional features of Motors and select a suitable drive for specific application
		CO2	Analyze and assess the performance characteristics of DC motors by conducting suitable tests and control the speed by suitable method.
		CO3	Explain the constructional features of Three Phase and Single phase induction Motors and assess their performance
		CO4	Control the speed of induction motor by a suitable method.
		CO5	Explain the operation of Synchronous motor and special motors

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17EE45	17EE45-Electromagnetic Field Theory (Core)	CO1	Explain the fundamental concepts of vector analysis and the behavior of static electric fields in vacuum of free space
		CO2	Compute energy and potential due to a system of charges, explain the behavior of field across a boundary between two different media
		CO3	Solve Poison's and Laplace equation in different coordinate systems, Evaluate magnetic field quantities for different current distributions
		CO4	Determine forces and torques exerted by magnetic fields on other charges, Study of magnetic materials, inductance
		CO5	Understand the concepts of time varying field produced by changing electric and magnetic fields, Application of Maxwell's equations to study fundamental theory of wave motion
17EE46	17EE46-Operational Amplifiers and Linear Ics (Foundation course)	CO1	Describe the characteristics of ideal and practical operational amplifier and design the applications of op-amp circuit.
		CO2	Design filters using linear ICs and op-amp regulators circuits using specifications
		CO3	Design signal generators and comparator &converter circuits using linear ICs
		CO4	Design ADC and DAC using op-amps; demonstrate the application of Linear ICs as comparators and rectifiers
		CO5	Design and describe the application of PLL using IC 565 &applications of multivibrators using IC 555.
17EEL47	17EEL47-Electrical Machines Laboratory -2	CO1	Test dc machines to determine their characteristics
		CO2	Control the speed of dc motor by armature and field control.
		CO3	Pre-determine the performance characteristics of dc machines by

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			conducting suitable tests.
		CO4	Perform load test on single phase induction motor, three phase induction motor and induction generator to assess its performance.
		CO5	Conduct test on induction motor to pre-determine the performance characteristics and synchronous motor to draw the performance curves.
17EEL48	17EEL48-Op- amp and Linear ICs Laboratory	CO 1	To conduct experiment to determine the characteristic parameters of OP-Amp
		CO 2	To design test the OP-Amp as Amplifier, adder, subtractor, differentiator and integrator
		CO 3	To design test the OP-Amp as Amplifier as voltage comparator and zero crossing detector
		CO 4	To design test the OP-Amp as oscillators and filters
		CO 5	Design and study of Linear IC's as multivibrator power supplies.
17CPH39/ 49	17CPH39/49- Constitution of India, Professional Ethics and Human Rights	CO 1	Learn in details with examples To assimilate and get familiarized with basic information about Indian constitution
		CO 2	Specify in details with examples provide overall legal literacy to the young technograts to manage complex societal issues in the present scenario.
		CO 3	Learn the characteristics of To identify their individual roles and ethical responsibilities towards society.
		CO 4	Specify in depth To understand engineering ethics & responsibilities
		CO 5	Deliberate in details with application, if applicable, To understand engineering ethics & responsibilities, through the learning of these topics students will be able to understand human rights/ values and its implications in their life.