Department of Electrical and Electronics Engineering

AIT, CHIKKAMAGALURU

PO details

PO Number	Title
PO 1	Engineering knowledge
PO 2	Problem analysis
PO 3	Design/development of solutions
PO 4	Conduct investigations of complex problems
PO 5	Modern tool usage
PO 6	The engineer and society
PO 7	Environment and sustainability
PO 8	Ethics
PO 9	Individual and team work
PO 10	Communication
PO 11	Project management and finance
PO 12	Life-long learning

PSO details

PSO Number	Title
PSO 1	To design, operate & maintain a smart distributed generation system at the least economical and ecological cost
PSO 2	To acquire the technical skills for generation, transmission & auditing of energy with financial constraints and enhance proficiency in solving problems of power industry

PEO details

- Graduates of the Program will acquire Professional and Academic excellence in the field of Electrical and Electronics Engineering and Associated fields.

- Graduates of the Program will apply their Knowledge in the Operation, Control and Maintenance of Power sector and related industries.
- Graduates of the Program will acquire Multi-disciplinary Knowledge and Skills to Development of solutions for Societal and Industrial needs.

Course Outcomes

Semester 1 / 2

BASIC ELECTRICAL ENGINEERING - 21ELE13 / 21ELE23

Course outcomes:

1) **CO1:** Analyse basic DC and AC electric circuits.
2) **CO2:** Explain the working principles of transformers and electrical machines.
3) **CO3:** Explain the concepts of electric power transmission and distribution of power.
4) **CO4:** Understand the wiring methods, electricity billing, and working principles of circuit protective devices and personal safety measures.

BASIC ELECTRICAL ENGINEERING LABORATORY - 21ELE17 / 21ELE27

Course outcomes:

CO1: verify KCL and KVL and maximum power transfer theorem for DC circuits.
CO2: compare power factors of different types of lamps.
CO3: demonstrate the measurement of the impedance of an electrical circuit and power consumed by a 3-phase load.
CO4: analyze two-way and three-way control of lamps.
CO5: explain the effects of open and short circuits in simple circuits.
CO6: interpret the suitability of earth resistance measured.

Semester 3

TRANSFORM CALCULUS, FOURIER SERIES AND NUMERICAL TECHNIQUES - 18MAT31

Course Outcomes:

- CO1: Use Laplace transform and inverse Laplace transform in solving differential/ integral equation arising in network analysis, control systems and other fields of engineering.

- CO2: Demonstrate Fourier series to study the behaviour of periodic functions and their applications in system communications, digital signal processing and field theory.

· CO3: Make use of Fourier transform and Z-transform to illustrate discrete/continuous function arising in wave and heat propagation, signals and systems.

· CO4: Solve first and second order ordinary differential equations arising in engineering problems using single step and multistep numerical methods.

· CO5:Determine the externals of functionals using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis

ELECTRIC CIRCUIT ANALYSIS - 18EE32

Course Outcomes:

· Understand the basic concepts, basic laws and methods of analysis of DC and AC networks and reduce the complexity of network using source shifting, source transformation and network reduction using transformations.

· Solve complex electric circuits using network theorems.

· Discuss resonance in series and parallel circuits and also the importance of initial conditions and their evaluation.

· Synthesize typical waveforms using Laplace transformation.

· Solve unbalanced three phase systems and also evaluate the performance of two port networks

TRANSFORMERS AND GENERATORS – 18EE33

Course Outcomes:

·Understand the construction and operation of 1-phase, 3-Phase transformers and Autotransformer.

·Analyze the performance of transformers by polarity test, Sumpner's Test, phase conversion, 3-phase connection, and parallel operation.

·Understand the construction and working of AC and DC Generators.

·Analyze the performance of the AC Generators on infinite bus and parallel operation.

·Determine the regulation of AC Generator by Slip test, EMF, MMF, and ZPF Methods

ANALOG ELECTRONIC CIRCUITS – 18EE34

Course Outcomes:

- Obtain the output characteristics of clipper and clamper circuits.
- Design and compare biasing circuits for transistor amplifiers & explain the transistor switching.
- Explain the concept of feedback, its types and design of feedback circuits
- Design and analyze the power amplifier circuits and oscillators for different frequencies.
- Design and analysis of FET and MOSFET amplifiers

DIGITAL SYSTEM DESIGN – 18EE35

Course Outcomes:

- Develop simplified switching equation using Karnaugh Maps and QuineMcClusky techniques.
- Design Multiplexer, Encoder, Decoder, Adder, Subtractors and Comparator as digital combinational control circuits.
- Design flip flops, counters, shift registers as sequential control circuits.
- Develop Mealy/Moore Models and state diagrams for the given clocked sequential circuits.
- Explain the functioning of Read only and Read/Write Memories, Programmable ROM, EPROM and Flash memory.

ELECTRICAL AND ELECTRONIC MEASUREMENTS – 18EE36

Course Outcomes:

- Measure resistance, inductance and capacitance using bridges and determine earth resistance.
- Explain the working of various meters used for measurement of Power, Energy & understand the adjustments, calibration & errors in energy meters.
- Understand methods of extending the range of instruments & instrument transformers.
- Explain the working of different electronic instruments.
- Explain the working of different display and recording devices.

ELECTRICAL MACHINES LABORATORY-1 – 18EEL37

Course Outcomes:

· Evaluate the performance of transformers from the test data obtained.

· Connect and operate two single phase transformers of different KVA rating in parallel.

· Connect single phase transformers for three phase operation and phase conversion.

· Compute the voltage regulation of synchronous generator using the test data obtained in the laboratory.

· Evaluate the performance of synchronous generators from the test data and assess the performance of synchronous generator connected to infinite bus

ELECTRONICS LABORATORY – 18EEL38

Course Outcomes:

· Design and test rectifier circuits with and without capacitor filters.

· Determine h-parameter models of transistor for all modes.

· Design and test BJT and FET amplifier and oscillator circuits.

· Realize Boolean expressions, adders and subtractors using gates.

· Design and test Ring counter/Johnson counter, Sequence generator and 3 bit counters.

CONSTITUTION OF INDIA, PROFESSIONAL ETHICS AND CYBER LAW (CPC) - 18CPC39/49

Course Outcomes:

CO 1: Have constitutional knowledge and legal literacy.
CO 2: Understand Engineering and Professional ethics and responsibilities of Engineers.
CO 3: Understand the the cybercrimes and cyber laws for cyber safety measures

ADDITIONAL MATHEMATICS – I – 18MATDIP31

Course outcomes:

· CO1: Apply concepts of complex numbers and vector algebra to analyze the problems arising in related area.
· CO2: Use derivatives and partial derivatives to calculate rate of change of multivariate functions.
· CO3: Analyze position, velocity and acceleration in two and three dimensions of vector valued functions.
· CO4: Learn techniques of integration including the evaluation of double and triple integrals.
· CO5: Identify and solve first order ordinary differential equations

Semester 4

COMPLEX ANALYSIS, PROBABILITY AND STATISTICAL METHODS(M-4) - 18MAT41

Course Outcomes:
· Use the concepts of analytic function and complex potentials to solve the problems arising in electromagnetic field theory.
· Utilize conformal transformation and complex integral arising in aerofoil theory, fluid flow visualization and image processing.
· Apply discrete and continuous probability distributions in analyzing the probability models arising in engineering field.
· Make use of the correlation and regression analysis to fit a suitable mathematical model for the statistical data.
· Construct joint probability distributions and demonstrate the validity of testing the hypothesis.

POWER GENERATION AND ECONOMICS – 18EE42

Course Outcomes:
· Describe the working of hydroelectric, steam, nuclear power plants and state functions of major equipment of the power plants.
· Classify various substations and explain the functions of major equipments in substations.
· Explain the types of grounding and its importance.
· Infer the economic aspects of power system operation and its effects.
· Explain the importance of power factor improvement

TRANSMISSION AND DISTRIBUTION – 18EE43

Course Outcomes:
· Explain transmission and distribution scheme, identify the importance of different transmission systems and types of insulators.
· Analyze and compute the parameters of the transmission line for different configurations.
· Assess the performance of overhead lines.
· Interpret corona, explain the use of underground cables.
· Classify different types of distribution systems; examine its quality & reliability

ELECTRIC MOTORS – 18EE44

Course Outcomes:

· Explain the construction, operation and classification of DC Motor, AC motor and Special purpose motors.
· Describe the performance characteristics & applications of Electric motors.
· Demonstrate and explain the methods of testing of DC machines and determine losses and efficiency.
· Control the speed of DC motor and induction motor.
· Explain the starting methods, equivalent circuit and phasor diagrams, torque angle, effect of change in excitation and change in load, hunting and damping of synchronous motors.

ELECTROMAGNETIC FIELD THEORY – 18EE45

Course Outcomes:

· Use different coordinate systems , Coulomb's Law and Gauss Law for the evaluation of electric fields produced by different charge configurations.
· Calculate the energy and potential due to a system of charges & Explain the behavior of electric field across a boundary conditions.
· Explain the Poisson's, Laplace equations and behavior of steady magnetic fields.
· Explain the behavior of magnetic fields and magnetic materials.
· Assess time varying fields and propagation of waves in different media.

OPERATIONAL AMPLIFIERS AND LINEAR ICs – 18EE46

Course Outcomes:

· Describe the characteristics of ideal and practical operational amplifier.
· Design filters and signal generators using linear ICs.
· Demonstrate the application of Linear ICs as comparators and rectifiers.
· Analyze voltage regulators for given specification using op-amp and IC voltage regulators.
· Summarize the basics of PLL and Timer

ELECTRICAL MACHINES LABORATORY – 2 – 18EEL47

Course Outcomes:

· Test DC machines to determine their characteristics and also to control the speed of DC motor.
. Pre-determine the performance characteristics of DC machines by conducting suitable tests.
· Perform load test on single phase and three phase induction motor to assess its performance.
· Conduct test on induction motor to pre-determine the performance characteristics.
· Conduct test on synchronous motor to draw the performance curves.

OP- AMP AND LINEAR ICS LABORATORY – 18EEL48

Course Outcomes:

· To conduct experiment to determine the characteristic parameters of OP-Amp
· To design test the OP-Amp as Amplifier, adder, subtractor, differentiator and integrator.
· To design test the OP-Amp as oscillators and filters.

· Design and study of Linear IC's as multivibrator power supplies.

Semester 5

MANAGEMENT AND ENTREPRENEURSHIP – 18EE51

Course Outcomes:

· Explain the field of management, task of the manager, planning and steps in decision making.
· Discuss the structure of organization, importance of staffing, leadership styles, modes of communication, techniques of coordination and importance of managerial control in business.
· Explain the concepts of entrepreneurship and a businessman's social responsibilities towards different groups.
· Show an understanding of role of SSI's in the development of country and state/central level institutions/agencies supporting business enterprises.
· Discuss the concepts of project management, capital budgeting, project feasibility studies, need for project report and new control techniques.

MICROCONTROLLER – 18EE52

Course Outcomes:

· Outline the 8051 architecture, registers, internal memory organization, addressing modes.
· Discuss 8051 addressing modes, instruction set of 8051, accessing data and I/O port programming.
· Develop 8051C programs for time delay, I/O operations, I/O bit manipulation, logic and arithmetic operations, data conversion and timer/counter programming.
· Summarize the basics of serial communication and interrupts, also develop 8051 programs for serial data communication and interrupt programming.
· Program 8051 to work with external devices for ADC, DAC, Stepper motor control, DC motor control, Elevator control.

POWER ELECTRONICS – 18EE53

Course Outcomes:

· To give an overview of applications power electronics, different types of power semiconductor devices, their switching characteristics, power diode characteristics, types, their operation and the effects of power diodes on RL circuits.
· To explain the techniques for design and analysis of single phase diode rectifier circuits.
· To explain different power transistors, their steady state and switching characteristics and limitations.
· To explain different types of Thyristors, their gate characteristics and gate control requirements.
· To explain the design, analysis techniques, performance parameters and characteristics of controlled rectifiers, DC- DC, DC - AC converters and Voltage controllers.

SIGNALS AND SYSTEMS – 18EE54

Course Outcomes:

· Explain the generation of signals, behavior of system and the basic operations that can be performed on signals and properties of systems.

· Apply convolution in both continuous and discrete domain for the analysis of systems given impulse response of a system.

· Solve the continuous time and discrete time systems by various methods and their representation by block diagram.

· Perform Fourier analysis for continuous and discrete time, linear time invariant systems.

· Apply Z-transform and properties of Z transform for the analysis of discrete time systems.

ELECTRICAL MACHINE DESIGN – 18EE55

Course Outcomes:

·Identify and list, limitations, modern trends in design, manufacturing of electrical machines and properties of materials used in the electrical machines.

·Derive the output equation of DC machine, discuss selection of specific loadings and magnetic circuits of DC machines, design the field windings of DC machine, and design stator and rotor circuits of a DC machine.

· Derive the output equations of transformer, discuss selection of specific loadings, estimate the number of cooling tubes, no load current and leakage reactance of core type transformer.

· Develop the output equation of induction motor, discuss selection of specific loadings and magnetic circuits of induction motor, design stator and rotor circuits of a induction motor.

·Formulate the output equation of alternator, design the field windings of Synchronous machine, discuss short circuit ratio and its effects on performance of synchronous machines, design salient pole and non-salient pole alternators for given specifications.

HIGH VOLTAGE ENGINEERING – 18EE56

Course Outcomes:

· Explain conduction and breakdown phenomenon in gases, liquid dielectrics and breakdown phenomenon in solid dielectrics.

· Summarize generation of high voltages and currents

· Outline measurement techniques for high voltages and currents.

· Summarize overvoltage phenomenon and insulation coordination in electric power systems.

· Explain non-destructive testing of materials and electric apparatus, high-voltage testing of electric apparatus

MICROCONTROLLER LABORATORY - 18EEL57

Course Outcomes:

· Write assembly language programs for data transfer, arithmetic, Boolean and logical instructions and code conversions.

· Write ALP using subroutines for generation of delays, counters, configuration of SFRs for serial communication and timers.

· Perform interfacing of stepper motor and dc motor for controlling the speed, elevator, LCD, external ADC and temperature control.
· Generate different waveforms using DAC interface.
· Work with a small team to carryout experiments using microcontroller concepts and prepare reports that present lab work.

POWER ELECTRONICS LABORATORY – 18EEL58

Course Outcomes:
· Obtain static characteristics of semiconductor devices to discuss their performance.
· Trigger the SCR by different methods
· Verify the performance of single phase controlled full wave rectifier and AC voltage controller with R and RL loads.
· Control the speed of a DC motor, universal motor and stepper motors.
· Verify the performance of single phase full bridge inverter connected to resistive load.

ENVIRONMENTAL STUDIES – 18CIV59

Course Outcomes:
· CO1: Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale,
· CO2: Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment.
· CO3: Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components.
· CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues

Semester- 6

CONTROL SYSTEMS - 18EE61

Course Outcomes:

• Analyze and model electrical and mechanical system using analogous.
• Formulate transfer functions using block diagram and signal flow graphs.
• Analyze the stability of control system, ability to determine transient and steady state time response.
• Illustrate the performance of a given system in time and frequency domains, stability analysis using Root locus and Bode plots.
• Discuss stability analysis using Nyquist plots, Design controller and compensator for a given specification

POWER SYSTEM ANALYSIS – 1 - 18EE62

Course Outcomes:

- Model the power system components & construct per unit impedance diagram of power system.
- Analyze three phase symmetrical faults on power system.
- Compute unbalanced phasors in terms of sequence components and vice versa, also develop sequence networks.
- Analyze various unsymmetrical faults on power system.
- Examine dynamics of synchronous machine and determine the power system stability.

DIGITAL SIGNAL PROCESSING - 18EE63

Course Outcomes:

- Apply DFT and IDFT to perform linear filtering techniques on given sequences to determine the output.
- Apply fast and efficient algorithms for computing DFT and inverse DFT of a given sequence
- Design and realize infinite impulse response Butterworth and Chebyshev digital filters using impulse invariant and bilinear transformation techniques.
- Develop a digital IIR filter by direct, cascade, parallel, ladder and FIR filter by direct, cascade and linear phase methods of realization. • Design and realize FIR filters by use of window function and frequency sampling method.

RENEWABLE ENERGY RESOURCES - 18EE653

Course outcomes:

- Discuss causes of energy scarcity and its solution, energy resources and availability of renewable energy.
- Outline energy from sun, energy reaching the Earth's surface and solar thermal energy applications.
- Discuss types of solar collectors, their configurations, solar cell system, its characteristics and their applications.
- Explain generation of energy from hydrogen, wind, geothermal system, solid waste and agriculture refuse.
- Discuss production of energy from biomass, biogas.
- Summarize tidal energy resources, sea wave energy and ocean thermal energy.

CONTROL SYSTEM LABORATORY - 18EEL66

Course Outcomes:

• Utilize software package and discrete components in assessing the time and frequency domain response of a given second order system.
• Design, analyze and simulate Lead, Lag and Lag – Lead compensators for given specifications.
• Determine the performance characteristics of ac and DC servomotors and synchro-transmitter receiver pair used in control systems.
• Simulate the DC position and feedback control system to study the effect of P, PI, PD and PID controller and Lead compensator on the step response of the system.
• Develop a script files to plot Root locus, Bode plot and Nyquist plot to study the stability of

DIGITAL SIGNAL PROCESSING LABORATORY - 18EEL67

Course Outcomes:

• Explain physical interpretation of sampling theorem in time and frequency domains.
• Evaluate the impulse response of a system.
• Perform convolution of given sequences to evaluate the response of a system.
• Compute DFT and IDFT of a given sequence using the basic definition and/or fast methods.
• Provide a solution for a given difference equation. • Design and implement IIR and FIR filters.

MINI PROJECT - 18EEMP68

Course outcomes:

- Present the mini-project and be able to defend it.
- Make links across different areas of knowledge and to generate, develop and evaluate ideas and information so as
- to apply these skills to the project task. Habituated to critical thinking and use problem solving skills.
- Communicate effectively and to present ideas clearly and coherently in both the written and oral forms.
- Work in a team to achieve common goal.
- Learn on their own, reflect on their learning and take appropriate actions to improve it. ■•

INTERNSHIP - 18EEI85

Course outcomes:

Gain practical experience within industry in which the internship is done.

- Acquire knowledge of the industry in which the internship is done.
- Apply knowledge and skills learntto classroom work.
- Develop a greater understanding about career options while more clearly defining personal career goals.
- Experience the activities and functions of professionals.
- Develop and refine oral and written communication skills.
- Identify areas for future knowledge and skill development.
- Expand intellectual capacity, credibility, judgment, intuition. .
- Acquire the knowledge of administration, marketing, finance and economics. ■•

Semester- 7

POWER SYSTEM ANALYSIS – 2 - 18EE71

Course Outcomes

· Formulate network matrices and models for solving load flow problems.
· Perform steady state power flow analysis of power systems using numerical iterative techniques.
· Solve issues of economic load dispatch and unit commitment problems.
· Analyze short circuit faults in power system networks using bus impedance matrix.
· Apply Point by Point method and Runge Kutta Method to solve Swing Equation.

POWER SYSTEM PROTECTION - 18EE72

Course Outcomes

· Discuss performance of protective relays, components of protection scheme and relay terminology over current protection.
· Explain the working of distance relays and the effects of arc resistance, power swings, line length and source impedance on performance of distance relays.
· Discuss pilot protection, construction, operating principles and performance of differential relays and discuss protection of generators, motors, transformer and Bus Zone Protection.
· Explain the construction and operation of different types of circuit breakers.
· Outline features of fuse, causes of over voltages and its protection, also modern trends in Power System Protection.

ELECTRIC VEHICLES - 18EE752

Course outcomes:

• Explain the roadway fundamentals, laws of motion, vehicle mechanics and propulsion system design.
• Explain the working of electric vehicles and hybrid electric vehicles in recent trends.

- Model batteries, Fuel cells, PEMFC and super capacitors.
- Analyze DC and AC drive topologies used for electric vehicle application.
- Develop the electric propulsion unit and its control for application of electric vehicles.

POWER SYSTEM LABORATORY - 18EEL76

Course Outcomes:

· Develop a program in suitable package to assess the performance of medium and long transmission lines.
· Develop a program in suitable package to obtain the power angle characteristics of salient and non-salient pole alternator.
· Develop a program in suitable package to assess the transient stability under three phase fault at different locations in a of radial power systems.
· Develop programs in suitable package to formulate bus admittance and bus impedance matrices of interconnected power systems.
· Use suitable package to solve power flow problem for simple power systems.
· Use suitable package to study unsymmetrical faults at different locations in radial power systems
· Use of suitable package to study optimal generation scheduling problems for thermal power plants.

RELAY AND HIGH VOLTAGE LABORATORY - 18EEL77

Course Outcomes:

· Verify the characteristics of over current, over voltage, under voltage and negative sequence relay both electromagnetic and static type.
· Verify the characteristics of microprocessor based over current, over voltage, under voltage relays and distance relay.
· Show knowledge of protecting generator, motor and feeders.
· Analyze the spark over characteristics for both uniform and non-uniform configurations using High
A and DC voltages.
· Measure high AC and DC voltages and breakdown strength of transformer oil.
· Draw electric field and measure the capacitance of different electrode configuration models.
· Show knowledge of generating standard lightning impulse voltage to determine efficiency, energy of impulse generator and 50% probability flashover voltage for air insulation.

PROJECT PHASE – I - 18EEP78

Course Outcomes:

- Demonstrate a sound technical knowledge of their selected project topic.
- Undertake problem identification, formulation and solution.
- Design engineering solutions to complex problems utilizing a systems approach.
- Communicate with engineers and the community at large in written an oral forms.

Semester- 8

POWER SYSTEM OPERATION AND CONTROL - 18EE81

Course Outcomes :

- Describe various levels of controls in power systems, architecture and configuration of SCADA.
- Develop and analyze mathematical models of Automatic Load Frequency Control.
- Develop mathematical model of Automatic Generation Control in Interconnected Power system
- Discuss the Control of Voltage , Reactive Power and Voltage collapse.
- Explain security, contingency analysis, state estimation of power systems.

ELECTRICAL ESTIMATION AND COSTING - 18EE822

Course Outcomes:

- Discuss wiring methods, cables used, design of lighting points and sub-circuits, internal wiring, wiring accessories and fittings, fuses and types.
- Discuss estimation of service mains and power circuits.
- Discuss estimation of overhead transmission and distribution system its components.
- Discuss types of substation, main components and estimation of substation.

PROJECT WORK PHASE -II - 18EEP83

Course outcomes:

Present the project and be able to defend it.

Make links across different areas of knowledge and to generate, develop and evaluate ideas and information so as to apply these skills to the project task.

Habituated to critical thinking and use problem solving skills

Communicate effectively and to present ideas clearly and coherently in both the written and oral forms.

Work in a team to achieve common goal.

Learn on their own, reflect on their learning and take appropriate actions to improve it.

TECHNICAL SEMINAR - 18EES84

Course outcomes:

Attain, use and develop knowledge in the field of engineering and other disciplines through independent learning and collaborative study.

Identify, understand and discuss current, real-time issues.

Improve oral and written communication skills.

Explore an appreciation of the self in relation to its larger diverse social and academic contexts.

Apply principles of ethics and respect in interaction with others.

INTERNSHIP - 18EEI85

Course Outcomes:

- Gain practical experience within industry in which the internship is done.
- Acquire knowledge of the industry in which the internship is done.
- Apply knowledge and skills learned to classroom work.
- Develop a greater understanding about career options while more clearly defining personal career goals. - Experience the activities and functions of professionals.
- Develop and refine oral and written communication skills.

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Semester 1 / 2

BASIC ELECTRICAL ENGINEERING - 18ELE13 / 18ELE23

Course outcomes:

- Analyse D.C and A.C circuits.
- Explain the principle of operation andconstruction of single phase transformers.
- Explain the principle of operation andconstruction of DC machines and synchronous machines.
- Explain the principle of operation and construction of three phase induction motors.
- Discuss concepts of electrical wiring, circuit protecting devices and earthing

BASIC ELECTRICAL ENGINEERING LABORATORY - 18ELE17 / 18ELE27

Course outcomes:

- Identify the common electrical components and measuring instruments used for conducting experiments in the electrical laboratory.
- Compare powerfactor of lamps.
- Determine impedance of an electrical circuit and power consumed in a 3 phase load.
- Understand two way and three way control of lamps.

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CO Attainment

Department Name : Electrical & Electronics Engineering (EE)															
Semester : 3 - Section : A - CourseCode : 18EE35					Subject : Digital System Design										
Course Outcomes	Internal Assessment (IA)		Other Assessment (Other Assessment)		University Exam		Direct Attainment		Feedback		Indirect Attainment		Total Attainment	
	Attainment(out of 3)	Attainment(out of 100)	Attainment(out of 3)	Attainment(out of 100)	Attainment(out of 3)	Attainment(out of 100)	Attainment(out of 3)	Attainment(out of 100)	Attainment(out of 3)	Attainment(out of 100)	Attainment(out of 3)	Attainment(out of 100)	Attainment(out of 3)	Attainment(out of 100)
18EE35.1	2.22	73.94	3	100	0.57	18.87	1.67	55.82	0	0	0	0	1.34	44.66
18EE35.2	2.6	86.59	3	100	0.57	18.87	1.85	61.51	0	0	0	0	1.48	49.21
18EE35.3	1.96	65.42	3	100	0.57	18.87	1.56	51.99	0	0	0	0	1.25	41.59
18EE35.4	1.11	37.04	3	100	0.57	18.87	1.18	39.21	0	0	0	0	0.94	31.37
18EE35.5	0	0	3	100	0.57	18.87	2.03	67.55	0	0	0	0	1.62	54.04
18EE35.6	0	0	0	0	0.57	18.87	0.23	7.55	0	0	0	0	0.18	6.04
18EE35.7	0	0	0	0	0.57	18.87	0.23	7.55	0	0	0	0	0.18	6.04

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PO Attainment

Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
CO 1	1.67	1.67	1.12	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO 2	1.85	1.85	1.23	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO 3	1.56	1.56	1.04	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO 4	1.18	1.18	0.78	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO 5	2.03	2.03	1.35	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO 6	0.23	0.23	0.15	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Subject: Digital System Design
Subject Code: 18EE35
Sem:3

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