



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, Affiliated to Anna University, Chennai, India)

Kaikkurichi, Pudukkottai – 622 303

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

REGULATION 2017

COURSE OUTCOMES (CO)

I SEMESTER

HS8151 COMMUNICATIVE ENGLISH

Students will be able to

CO1	Develop vocabulary of a general kind by developing their reading skills.
CO2	Explain their opinions in English and Participate effectively in informal conversations; introduce themselves and their friends.
CO3	Comprehend conversations and short talks delivered in English.
CO4	Write short essays of a general kind and personal letters and emails in English.
CO5	Develop their speaking skills and speak fluently in real contexts.
CO6	Discuss about the general kind in magazines and Newspapers.

MA8151 ENGINEERING MATHEMATICS-I

Students will be able to

CO1	Apply the limit definition and rules of differentiation to differentiate functions
CO2	Apply differentiation to solve maxima and minima problems.
CO3	Evaluate integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus.
CO4	Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables.
CO5	Evaluate integrals using techniques of integration, such as substitution, partial fractions and integration by parts.
CO6	Apply various techniques in solving differential equations.

PH8151 ENGINEERING PHYSICS

Students will be able to

CO1	Explain the basics of properties of matter and its applications.
CO2	Describe the characteristics of laser light and their application in semiconductor laser
CO3	Discuss the principle behind the propagation of light through an optical fiber and its application in sensors
CO4	Summarize the different modes of heat transfer.
CO5	Relate the quantum concepts in electron microscopes.
CO6	Describe the unit cell characteristics and the growth of crystals.

CY8151 ENGINEERING CHEMISTRY

Students will be able to

CO1	Summarize the water related problems in boilers and their treatment techniques.
CO2	Discuss the applications of adsorption in the field of water and air pollution abatement.
CO3	Discuss the types of catalysis and the mechanism of enzyme catalysis.
CO4	Apply phase rule in the alloying and the behaviour of one component and two component systems using phase diagram.
CO5	Explain various types of fuels, their manufacturing processes and calculation of calorific theoretically.



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COURSE OUTCOMES (CO)

CO6	Summarize the principles and generation of energy in batteries, nuclear reactors, solar cells, wind mills and fuelcells.
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GE8151 PROBLEM SOLVING AND PYTHON PROGRAMMING

Students will be able to

CO1	Explain the basics of fundamentals of computing.
CO2	Describe the basics of algorithmic problem solving.
CO3	Solve problems using Python conditionals and loops.
CO4	Define Python functions and use function calls to solve Problems.
CO5	Apply Python data structures - lists, tuples and dictionaries to represent complex data.
CO6	Explain the importance of Read and write data from/to files in Python programs.

GE8152 ENGINEERING GRAPHICS

Students will be able to

CO1	Familiarize with the fundamentals and standards of Engineering graphics.
CO2	Perform freehand sketching of basic geometrical constructions and multiple views of objects.
CO3	Project orthographic projections of lines and plane surfaces.
CO4	Draw projections and solids and development of surfaces.
CO5	Visualize and to project isometric sections of simple solids.
CO6	Visualize and to project perspective sections of simple solids.

GE8161 PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY

Students will be able to

CO1	Develop algorithmic solutions to simple computational problems.
CO2	Design and execute simple Python programs.
CO3	Solve programs in Python using conditionals and loops for solving problems.
CO4	Apply functions to decompose a Python program.
CO5	Analyze compound data using Python data structures.
CO6	Utilize Python packages in developing software applications.

BS8161 PHYSICS AND CHEMISTRY LABORATORY

Students will be able to

CO1	Determine the Modulus of elasticity of materials and Coefficient of Viscosity of liquids.
CO2	Determine the Thermal Conductivity of bad conductor using Lee's disc method.
CO3	Determine of wavelength and particle size using Laser and Determination of acceptance angle in an optical fiber.
CO4	Calculate water quality parameters such as hardness, alkalinity of the given water sample.
CO5	Estimate the amount of the given acids using pH titrations.
CO6	Determine the amount of iron content in the given substance using potentiometric titration and Determine the amount of chloride content in the given water sample.



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COURSE OUTCOMES (CO)

II SEMESTER

HS8251 TECHNICAL ENGLISH

Students will be able to

CO1	Apply strategies in reading and comprehending engineering and technology text.
CO2	Use convincing job applications.
CO3	Apply speaking skill to make technical presentations.
CO4	Use the formats for effective report writing.
CO5	Apply speaking skill to participate in group discussions.
CO6	Apply the active listening skills to comprehend lectures and technical talks.

MA8251 ENGINEERING MATHEMATICS-II

Students will be able to

CO1	Explain about the Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.
CO2	Apply Gradient, divergence and curl of a vector point function and related identities.
CO3	Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.
CO4	Evaluate the problems based on Analytic functions, conformal mapping and complex integration.
CO5	Explain about the Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.
CO6	Evaluate the linear second order differential equations with constant coefficients.

PH8253 PHYSICS FOR ELECTRONICS ENGINEERING

Students will be able to

CO1	Gain knowledge on classical and quantum electron theories, and energy band structures.
CO2	Acquire knowledge on basics of semiconductor physics and its applications in various devices.
CO3	Get knowledge on magnetic properties.
CO4	Establish knowledge on dielectric properties of materials.
CO5	Explain the necessary understanding on the functioning of optical materials for optoelectronics.
CO6	Comprehend the basics of quantum structures and their applications in spintronics and carbon electronics.

BE8252 BASIC CIVIL AND MECHANICAL ENGINEERING

Students will be able to

CO1	Appreciate the Civil and Mechanical Engineering components of Projects.
CO2	Explain the usage of construction material and proper selection of construction



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COURSE OUTCOMES (CO)

	materials.
CO3	Measure distances and area by surveying.
CO4	Identify the components used in power plant cycle.
CO5	Demonstrate working principles of petrol and diesel engine.
CO6	Elaborate the components of refrigeration and Air conditioning cycle.

EE8251 CIRCUIT THEORY

Students will be able to

CO1	Discuss the different laws of Electric circuits and analysis of AC & DC circuits.
CO2	Solve the AC and DC circuits using various network theorems and reduction techniques.
CO3	Solve the Series and Parallel resonance circuits, analyze the performance of single & double tuned circuits.
CO4	Explain the resonance phenomenon in different coupled tuned circuits.
CO5	Discuss the transient response of DC circuits and the characterization of different parameter sets.
CO6	Summarize the three phase circuits with help of voltage and current phasor diagrams.

GE8291 ENVIRONMENTAL SCIENCE AND ENGINEERING

Students will be able to

CO1	Summarize the values, threats, conservation of biodiversity and ecosystems.
CO2	Describe the sources, effects, control measures of different types of pollution, and solid waste management.
CO3	Associate the effects of exploitation of Natural resources on environment.
CO4	Summarize the water conservation methods and various environmental acts for environmental sustainability.
CO5	Explain the effect of Human population and role of IT in environment and human health.
CO6	Discuss scientific, technological, economic and social solutions to environmental problems.

GE8261 ENGINEERING PRACTICES LABORATORY

Students will be able to

CO1	Fabricate carpentry components and pipe connections including plumbing works.
CO2	Use welding equipments to join the structures.
CO3	Carry out the basic machining operations.
CO4	Make the models using sheet metal works.
CO5	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundry and fittings.
CO6	Carry out basic home electrical works and appliances.



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COURSE OUTCOMES (CO)

EE8261 ELECTRIC CIRCUITS LABORATORY

Students will be able to

CO1	Analysis of various circuit theorems and concepts in engineering applications.
CO2	Review of various simulation tools and demonstrate with various circuits.
CO3	Exhibit ethical Principles in engineering Practices.
CO4	Perform task an individual and or team member to manage the task in time.
CO5	Express the Engineering activities with effective Presentation and report.
CO6	Interpret the findings with appropriate technological /research citation.

III SEMESTER

MA8353 TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS

Students will be able to

CO1	Discuss the basic concepts of PDE for solving standard partial differential equations.
CO2	Demonstrates the Fourier series analysis which is central to many applications in engineering.
CO3	Explain the Fourier series techniques in solving heat flow problems used in various situations.
CO4	Develop an understanding of the Fourier transform techniques used in wide variety of situations.
CO5	Comprehend the effective mathematical tools for the solutions of partial differential equations that model several physical processes.
CO6	Describe Z transform techniques for discrete time systems.

EE8351 DIGITAL LOGIC CIRCUITS

Students will be able to

CO1	Comprehend various number systems and simplify the logical expressions using Boolean functions.
CO2	Explain about the combinational circuits.
CO3	Design various synchronous sequential circuits.
CO4	Develop the asynchronous sequential circuits.
CO5	Describe about PLDs and FPGA.
CO6	Demonstrate the digital simulation for development of application oriented logic circuits.

EE8391 ELECTROMAGNETIC THEORY

Students will be able to

CO1	Comprehend the basic mathematical concepts related to electromagnetic vector field.
CO2	Discuss the basic concepts about electrostatic fields, electrical potential, energy density and their applications.
CO3	Explain the magneto static fields, magnetic flux density, vector potential and its applications.



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COURSE OUTCOMES (CO)

CO4	Describe the different methods of emf generation and Maxwell's equations.
CO5	Demonstrate the basic concepts of electromagnetic waves and characterizing parameter.
CO6	Illustrate and compute Electromagnetic fields and apply them for design and analysis of electrical equipment and systems.

EE8301 ELECTRICALMACHINES-I

Students will be able to

CO1	Analyze the magnetic circuits.
CO2	Acquire the knowledge in constructional details of transformers.
CO3	Comprehend the concepts of electromechanical energy conversion.
CO4	Gain the knowledge in working principles of DC Generator.
CO5	Infer the knowledge in working principles of DC Motor.
CO6	Summarize the knowledge in various losses taking place in D.C. Machines.

EE8353 ELECTRON DEVICES AND CIRCUITS

Students will be able to

CO1	Comprehend the structure of basic electronic devices.
CO2	Explain about the active and passive circuit elements.
CO3	Describe the operation and applications of transistor like BJT and FET.
CO4	Illustrate the characteristics of amplifier gain and frequency response.
CO5	Demonstrate the required functionality of positive and negative feedback systems.
CO6	Discuss the design and analysis of oscillators.

ME8792 POWER PLANT ENGINEERING

Students will be able to

CO1	Explain the layout, construction and working of the components inside a thermal power plant.
CO2	Describe about the layout, construction and working of the components inside a Diesel, Gas and Combined cycle power plants.
CO3	Demonstrate the layout, construction and working of the components inside nuclear power plants.
CO4	Illustrate the layout, construction and working of the components inside Renewableenergy power plants.
CO5	Discuss the applications of power plants.
CO6	Explain about power plant economics and environmental hazards and estimate the costs of electrical energy production.

EC8311 ELECTRONICS LABORATORY

Students will be able to

CO1	Describe about the characteristics of Semiconductor diode and Zener diode and NPN Transistor.
CO2	Discuss the characteristics of JFET and UJT and draw the equivalent circuit and generation of saw tooth waveforms.



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COURSE OUTCOMES (CO)

CO3	Demonstrate about the characteristics of photo diode & photo transistor, light activated relay circuit.
CO4	Design the RC phase shift and LC oscillators.
CO5	Explain about the Single Phase half-wave and full wave rectifiers and passive filters.
CO6	Structure the Differential amplifiers using FET and CRO.

EE8311 ELECTRICAL MACHINES LABORATORY-I

Students will be able to

CO1	Comprehend the open circuit and load characteristics of DC shunt and compound generator.
CO2	Explain about the load test on types of DC motor.
CO3	Demonstrate about the Swinburne's test and speed control of DC shunt motor.
CO4	Determine the performance of DC motor – generator set using Hopkinson's test.
CO5	Experiment the load test and open circuit and short circuit test on single-phase transformer and three phase transformers and its losses.
CO6	Describe the starters and 3-phase transformers connections.

IV SEMESTER

MA8491 NUMERICAL METHODS

Students will be able to

CO1	Comprehend the basic concepts of solving algebraic and transcendental equations.
CO2	Discuss the numerical techniques of interpolation in various intervals in real life situations.
CO3	Explain the numerical techniques of differentiation.
CO4	Develop an understanding of the integration which plays an important role in engineering and technology disciplines.
CO5	Carry out the various techniques and methods of solving ordinary differential equations.
CO6	Describe about the various techniques and methods of solving various types of partial differential equations.

EE8401 ELECTRICAL MACHINES-II

Students will be able to

CO1	Construe the construction and working principle of Synchronous generator.
CO2	Interpret the MMF curves and armature windings.
CO3	Acquire knowledge on Synchronous motor.
CO4	Infer the construction and working principle of Three phase Induction Motor.
CO5	Construe the construction and working principle of Special Machines.
CO6	Predetermine the performance characteristics of Synchronous Machines.

EE8402 TRANSMISSION AND DISTRIBUTION

Students will be able to

CO1	Explain the importance and the functioning of transmission line parameters.
CO2	Describe the concepts of Lines and Insulators.
CO3	Discuss about the performance of Transmission lines.
CO4	Demonstrate the importance of distribution of the electric power in power system.



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CO5	Illustrate the basic concepts of Underground Cabilities.
CO6	Implement the function of different components used in Transmission and Distribution levels of power system and modelling of these components.

EE8403 MEASUREMENTS AND INSTRUMENTATION

Students will be able to

CO1	Describe the Basic functional elements of instrumentation.
CO2	Comprehend the Fundamentals of electrical and electronic instruments.
CO3	Discuss various measurement techniques.
CO4	Demonstrate on Various storage and display devices.
CO5	Explain the concepts of Various transducers and the data acquisition systems.
CO6	Design and analyze electrical and electronic Instruments and understand the operational features of display Devices and Data Acquisition System.

EE8451 LINEAR INTEGRATED CIRCUITS AND APPLICATIONS

Students will be able to

CO1	Explain about the concept of IC fabrication procedure.
CO2	Analyze the characteristics of Op-Amp.
CO3	Describe the importance of Signal analysis using Op-amp based circuits.
CO4	Illustrate the Functional blocks and the applications of special ICs like Timers, PLL circuits,regulator Circuits.
CO5	Demonstrate and acquire knowledge on the Applications of Op-amp.
CO6	Design and analyse the linear integrated circuits and their Fabrication and Application.

IC8451 CONTROL SYSTEMS

Students will be able to

CO1	Develop various representations of system based on the knowledge of Mathematics Science and Engineering fundamentals.
CO2	Discuss the time domain and frequency domain analysis of various models of linear system.
CO3	Illustrate the characteristics of the system to develop mathematical model.
CO4	Design appropriate compensator for the given specifications.
CO5	Explain the solution for complex control problem.
CO6	Describe the use of PID controller in closed loop system.

EE8411 ELECTRICAL MACHINES LABORATORY-II

Students will be able to

CO1	Describe and analyze EMF and MMF methods.
CO2	Analyze the characteristics of V and Inverted V curves.
CO3	Demonstrate about the importance of Synchronous machines.
CO4	Explain the load test on single and three-phase induction motor.
CO5	Discuss the importance of Induction Machines.
CO6	Comprehend on the separation of losses on induction motor.



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COURSE OUTCOMES (CO)

EE8461 LINEAR AND DIGITAL INTEGRATED CIRCUITS LABORATORY

Students will be able to

CO1	Experiment, test and characterize the circuit behavior with digital and analog ICs.
CO2	Comprehend and implement Boolean Functions.
CO3	Demonstrate the importance of code conversion.
CO4	Design and implement 4-bit shift registers.
CO5	Explain about the Application of Op-Amp.
CO6	Implement and design counters using specific counter IC.

EE8412 TECHNICAL SEMINAR

Students will be able to

CO1	Explain about the advanced industrial engineering developments.
CO2	Discuss about the various teaching aids such as overhead projectors, power point presentation and demonstrative models.
CO3	Identify and compare technical and practical issues related to the area of seminar.
CO4	Describe the preparation of a well organized report employing the elements of technical writing and critical thinking.
CO5	Discuss on the presentation of technical reports effectively.
CO6	Explain the methodology of attending the placement interviews with confidence.

EE8551 MICROPROCESSOR AND MICROCONTROLLER

Students will be able to

CO1	Explain the Addressing modes & instruction set of 8085 & 8051.
CO2	Comprehend the need & use of Interrupt structure 8085& 8051.
CO3	Discuss the importance of Interfacing.
CO4	Demonstrate the architecture of Microprocessor and Microcontroller.
CO5	Compute the assembly language programme.
CO6	Develop the Microprocessor and Microcontroller based applications.

V SEMESTER

EE8501 POWER SYSTEM ANALYSIS

Students will be able to

CO1	Design the power system under steady state operating condition.
CO2	Explain and apply iterative techniques for power flow analysis.
CO3	Describe and carry out short circuit studies on power system.
CO4	Design and analyze stability problems in power system.
CO5	Discuss on the concepts of Fault analysis.
CO6	Analyze and describe the various power system components and carry out power flow, short circuit and stability studies.



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COURSE OUTCOMES (CO)

EE8591 DIGITAL SIGNAL PROCESSING

Students will be able to

CO1	Explain the importance of Fourier transform, digital filters and DSP processors.
CO2	Describe on Signals and systems & their mathematical representation.
CO3	Discuss and analyze the discrete time systems.
CO4	Comprehend the importance of distribution of the electric power in power system.
CO5	Demonstrate the types of filters and their design for digital implementation.
CO6	Illustrate on the programmability of digital signal processor & quantization effects.

EE8552 POWER ELECTRONICS

Students will be able to

CO1	Discuss about the different types of power semiconductor devices and their switching.
CO2	Explain about Operation, characteristics and performance parameters of controlled rectifiers.
CO3	Describe about Operation, switching techniques and basics topologies of DC-DC switching regulators.
CO4	Comprehend about Operation of AC voltage controller and various configurations.
CO5	Demonstrate the different modulation techniques of pulse width modulated inverters and to comprehend harmonic reduction methods.
CO6	Illustrate the converters for real time applications.

CS8392 OBJECT ORIENTED PROGRAMMING

Students will be able to

CO1	Develop Java programs using OOP principles.
CO2	Compute Java programs with the concept's inheritance and interfaces.
CO3	Design the Java applications using exceptions and I/O streams.
CO4	Describe on the Various storage and display devices.
CO5	Explain the Java applications with threads and generics classes.
CO6	Execute Interactive Java programs using swings.

OMD551 BASICS OF BIOMEDICAL INSTRUMENTATION

Students will be able to

CO1	Explain the physiology of biomedical system.
CO2	Measure biomedical and physiological information.
CO3	Discuss the application of Electronics in diagnostics and therapeutic area.
CO4	Develop understanding of patient monitoring systems.
CO5	Get exposure to human body parameter measurement.
CO6	Study various transducers.

EE8551 CONTROL AND INSTRUMENTATION LABORATORY

Students will be able to

CO1	Explain the control theory and apply them to electrical engineering problems.
CO2	Analyse the various types of converters.
CO3	Design the various types of compensators.



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COURSE OUTCOMES (CO)

CO4	Illustrate the basic concepts of bridge networks.
CO5	Demonstrate the basics of signal conditioning circuits.
CO6	Develop the various simulation packages.

HS8581 PROFESSIONAL COMMUNICATION

Students will be able to

CO1	Explain about the corporate etiquette -organizing and managing professional events and will comprehend how reading will enhances their communicative competency.
CO2	Discuss about the making of effective communication and presentations.
CO3	Describe adequate soft skills required for the workplace.
CO4	Build good relation with Business correspondence.
CO5	Develop all around personalities with a mature outlook to function effectively in different circumstances.
CO6	Construct their confidence and help the attend interviews successfully.

CS8383 OBJECT ORIENTED PROGRAMMING LABORATORY

Students will be able to

CO1	Discuss about the software development skills using java programming for real-world applications.
CO2	Develop and compute Java programs for simple applications that make use of classes, packages and interfaces.
CO3	Design and implement Java programs with arraylist, exception handling.
CO4	Explain and execute Java programs with file processing and multithreading.
CO5	Describe about the one vent-driven programming paradigm of Java.
CO6	Design applications using generic programming and event handling.

VI SEMESTER

EE8601 SOLID STATE DRIVES

Students will be able to

CO1	Comprehend and suggest a converter for solid state drive.
CO2	Discuss the selection of suitable drive for the given application.
CO3	Discuss about the steady state operation and transient dynamics of a motor load system.
CO4	Analyze the operation of the converter/chopper fed dc drive.
CO5	Explain the operation and performance of AC motor drive.
CO6	Demonstrate and design the current and speed controllers for a closed loop solid state DC motor drive.

EE8602 PROTECTION AND SWITCHGEAR

Students will be able to

CO1	Describe and analyze Electromagnetic and Static Relays.
CO2	Discuss about the selection of suitable circuit breaker for the system.
CO3	Explain the causes of abnormal operating conditions of the apparatus and system.



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COURSE OUTCOMES (CO)

CO4	Comprehend the characteristics and functions of relays and protection schemes.
CO5	Demonstrate about the apparatus protection, static and numerical relays.
CO6	Illustrate the functioning of circuit breaker.

EE8691 EMBEDDED SYSTEMS

Students will be able to

CO1	Explain and analyze Embedded systems.
CO2	Discuss about the selection of suitable embedded system for a given application.
CO3	Describe about the various Embedded Development Strategies.
CO4	Comprehend on the concept of bus Communication in processors.
CO5	Demonstrate on the various processor scheduling algorithms.
CO6	Explain about the basics of Real time operating system.

GE8075 INTELLECTUAL PROPERTY RIGHTS

Students will be able to

CO1	Explain the importance of Intellectual Property Rights, Which plays a vital role in advanced Technical and scientific disciplines.
CO2	Discuss the imparting IPR protections and regulations for further advancement and latest developments.
CO3	Evaluate the disseminate knowledge on patents, patent regime in India and abroad and registration aspects.
CO4	Describe the protect innovation in the form of intellectual property rights.
CO5	Calculate the research scholarship, and a spirit of inquiry, thereby generating new knowledge.
CO6	Provide and recognize an overview of the statutory, procedural and case law underlining these processes and their interplay with litigation.

EE8005 SPECIAL ELECTRICAL MACHINES

Students will be able to

CO1	Comprehend the construction, principle of operation, control and performance of stepping motors.
CO2	Explain about the construction, principle of operation of switched reluctance motor.
CO3	Discuss about the construction, principle of operation of permanent magnet brushless D.C. motors.
CO4	Describe the construction, principle of operation and performance of permanent magnetsynchronous motors.
CO5	Demonstrate the construction, principle of operation and performance of other special Machines.
CO6	Explain about the selection of a special machine for a particular application.

EE8661 POWER ELECTRONICS AND DRIVES LABORATORY

Students will be able to

CO1	Explain the converter and inverter circuits and apply software for engineering problems.
CO2	Experiment about switching characteristics of the various switches.
CO3	Analyse about AC to DC converter circuits.
CO4	Illustrate about DC to AC circuits.



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COURSE OUTCOMES (CO)

CO5	Comprehend on AC to AC converters.
CO6	Discuss about the simulation software for engineering applications.

EE8681 MICROPROCESSOR AND MICROCONTROLLER LABORATORY

Students will be able to

CO1	Explain and apply computing platform and software for engineering problems.
CO2	Discuss the programming logics for code conversion.
CO3	Describe about the A/D and D/A converters.
CO4	Discuss the basics of serial communication.
CO5	Comprehend and impart knowledge in DC and AC motor interfacing.
CO6	Demonstrate the basics of software simulators.

EE8611 MINI PROJECT

Students will be able to

CO1	Discuss about the Industrial exposure and real-world applications.
CO2	Develop innovative prototypes of ideas.
CO3	Develop adequate soft skills required for the workplace.
CO4	Explaining about the taking up their final year project work and find solution by formulating proper methodology.
CO5	Demonstrate about the communication and report effectively project related activities and findings.
CO6	Discuss about the working as individual or in a team in development of technical projects.

VII SEMESTER

EE8701 HIGH VOLTAGE ENGINEERING

Students will be able to

CO1	Comprehend the Transients in power system.
CO2	Discuss about the Generation and measurement of high voltage.
CO3	Discuss about the High voltage testing.
CO4	Explain about the various types of over voltages in power system.
CO5	Describe about the measurement of over voltages.
CO6	Demonstrate about the testing of power apparatus and insulation coordination.

EE8702 POWER SYSTEM OPERATION AND CONTROL

Students will be able to

CO1	Explain about the day-to-day operation of electric power system.
CO2	Analyze the control actions to be implemented on the system to meet the minute-to-minute variation of system demand.
CO3	Discuss about the significance of power system operation and control.
CO4	Describe about the real power-frequency interaction.
CO5	Demonstrate about the reactive power-voltage interaction.
CO6	Design SCADA and its application for real time operation.



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COURSE OUTCOMES (CO)

OCS752 INTRODUCTION TO C PROGRAMMING

Students will be able to

CO1	Explain about the structure of C program and its basics and data types.
CO2	Discuss about the arrays and its types.
CO3	Describe about the strings and its operation.
CO4	Explain about the functions and its types.
CO5	Explain about the structures, declaration and initialization.
CO6	Develop applications in C using functions and structures.

EE8703 RENEWABLE ENERGY SYSTEMS

Students will be able to

CO1	Explain and create awareness about renewable energy Sources and technologies.
CO2	Discuss about the adequate inputs on a variety of issues in harnessing renewable Energy.
CO3	Demonstrate about the current and possible future role of renewable energy sources.
CO4	Elucidate the various renewable energy resources and technologies and their applications.
CO5	Define the basics about biomass energy.
CO6	Describe about the solar energy.

EI8075 FIBRE OPTICS AND LASER INSTRUMENTATION

Students will be able to

CO1	Elucidate about the basic concepts of optical fibers and their properties
CO2	Summarize the Industrial applications of optical fibres.
CO3	Describe about the concepts of Laser fundamentals.
CO4	Demonstrate about the industrial application of lasers.
CO5	Discuss about the holography and Medical applications of Lasers.
CO6	Explain about the ability to apply laser theory for the selection of lasers for a specific Industrial and medical application.

EE8010 POWER SYSTEM TRANSIENTS

Students will be able to

CO1	Explain about the generation of switching transients and their control.
CO2	Analyze switching and lightning transients.
CO3	Describe about the mechanism of lighting strokes and the production of lighting surges.
CO4	Discuss about the propagation, reflection and refraction of travelling waves.
CO5	Illustrate about voltage transients caused by faults.
CO6	Comprehend on circuit breaker action, load rejection on integrated power system.

EE8711 POWER SYSTEM SIMULATION LABORATORY



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COURSE OUTCOMES (CO)

Students will be able to	
CO1	Explain the power system planning and operational studies.
CO2	Discuss about the formation of Bus Admittance and Impedance Matrices and Solution of Networks.
CO3	Analyze the power flow using GS and NR method.
CO4	Discuss about the Symmetric and Unsymmetrical fault.
CO5	Comprehend about the economic dispatch.
CO6	Analyze the electromagnetic transients.

EE8712 RENEWABLE ENERGY SYSTEMS LABORATORY

Students will be able to	
CO1	Analyze Renewable energy systems.
CO2	Explain about the Renewable Energy Sources and technologies.
CO3	Discuss about providing adequate inputs on a variety of issues in harnessing Renewable Energy.
CO4	Simulate the various Renewable energy sources.
CO5	Describe about the recognizing current and possible future role of Renewable energy sources.
CO6	Discuss about the basics of Intelligent Controllers.

VII SEMESTER

EE8015 ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION

Students will be able to	
CO1	Comprehend the main aspects of generation, utilization and conservation.
CO2	Explain about identification of an appropriate method of heating for any particular industrial application.
CO3	Discuss about the evaluation of domestic wiring connection and debug any faults occurred.
CO4	Clarify about the construction of an electric connection for any domestic appliance like refrigerator as well as to design a battery charging circuit for a specific household application.
CO5	Illustrate about the realization of the appropriate type of electric supply system as well as to evaluate the performance of a traction unit.
CO6	Describe about the main aspects of Traction.

EE8018 MICROCONTROLLER BASED SYSTEM DESIGN

Students will be able to	
CO1	Explain about understand and apply computing platform and software for engineering problems.
CO2	Comprehend the concepts of Architecture of PIC microcontroller.
CO3	Discuss on basics concept of Interrupts and timers.
CO4	Describe about the importance of Peripheral devices for data communication.
CO5	Demonstrate about the basics of sensor interfacing.
CO6	Illustrate the Architecture of ARM processors.



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COURSE OUTCOMES (CO)

GE8076 PROFESSIONAL ETHICS IN ENGINEERING

Students will be able to

CO1	Describe the moral, values and ethics and self-confidence of human values
CO2	Apply engineering ethics in society
CO3	Explain about engineers as responsible experimenters
CO4	Interpreted the ethical issues and the responsibilities and rights in the society
CO5	Understand the basic Environmental ethics and computer ethics Ethics and Human Values
CO6	Explain an awareness on safety and risk and Global Issues

EE8811 PROJECT WORK

Students will be able to

CO1	Explain about the current real life Industrial exposure.
CO2	Develop the ability to solve a specific problem right from its identification and literature review till the successful solution of the same.
CO3	Discuss about the preparation of the project reports and to face reviews and viva voce examination.
CO4	Describe about the acquisition of their own innovative proto type of ideas.
CO5	Illustrate about the communication and report effectively project related activities and findings.
CO6	Demonstrate on working as individual or in a team in development of technical projects.