MEENAKSHI COLLEGE OF ENGINEERING

No-12, Vembuli Amman Koil Street, West K.K Nagar
Chennai-600078

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
REGULATION-2017

COURSE OUTCOMES

SEMESTER-I

COURSE NAME: HS8151- COMMUNICATIVE ENGLISH

C01	Facilitate the growth of communication in sharing information about family and friends.
CO2	Enhance overall comprehension abilities and demonstrate clear proficiency in freeform writing.
CO3	Acquire foundational grammar techniques and implement them to elevate language proficiency and foster development.
CO4	Establish an environment that promotes reading and nurtures the development of robust language skills.
CO5	Refine your capacity to write effectively across different styles by employing a wide-ranging vocabulary and adhering to proper syntax.

COURSE NAME: MA8151- ENGINEERING MATHEMATICS - I

C01	Diagonalizing symmetric matrices and analogous matrices involves utilizing eigenvalues and eigenvectors.
CO2	Gradients, potential functions, and directional derivatives pertain to the study of functions that involve multiple variables.
CO3	Calculate line, surface, and volume integrals utilizing Gauss's divergence theorem, Green's theorem, and Stokes's theorem.
CO4	Discuss analytic functions in heat and fluid flow.
CO5	Extend the concept of contour integrals in evaluating Real integrals.

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COURSE NAME: PH8151- ENGINEERING PHYSICS

C01	Gain knowledge on the basics of properties of matter and its applications.
CO2	Acquire knowledge on the concepts of waves and optical devices and their applications in fibre optics,
CO3	Understand the concepts of thermal properties of materials and their applications in expansion joints and heat exchangers
CO4	Gain knowledge on advanced physics concepts of quantum theory and its applications in tunneling microscopes.
CO5	Understand the basics of crystals, their structures and different crystal growth techniques

COURSE NAME: CY8151- ENGINEERING CHEMISTRY

C01	Make the students conversant with boiler feed water requirements, related problems and water treatment techniques
CO2	Develop an understanding of the basic concepts of phase rule and its applications to single and two component systems and appreciate the purpose and significance of alloys
CO3	Preparation, properties and applications of engineering materials
CO4	Analyse the types of fuels, calorific value calculations, manufacture of solid, liquid and gaseous fuels
CO5	Principles and generation of energy in batteries, nuclear reactors, solar cells, wind mills and fuel cells

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COURSE NAME: GE8151- PROBLEM SOLVING AND PYTHON PROGRAMMING

C01	Develop algorithmic solutions to simple computational problems
CO2	Develop and execute simple Python programs
CO3	Write simple Python programs using conditionals and loops for solving problems and decompose a Python program into functions
CO4	Represent compound data using Python lists, tuples, dictionaries etc
CO5	Read and write data from/to files in Python Programs

COURSE NAME: GE8152- ENGINEERING GRAPHICS

C01	Familiarize with the fundamentals and standards of Engineering graphics
CO2	Project orthographic projections of lines and plane surfaces
CO3	Draw projections and solids and development of surfaces
CO4	Draw projections of sectioned solids and development of surfaces
CO5	Visualize and to project isometric and perspective sections of simple solids

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COURSE NAME: GE8161- PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY

C01	Develop algorithmic solutions to simple computational problems and execute simple Python programs
CO2	Implement programs in Python using conditionals and loops for solving problems
CO3	Develop Python programs step-wise by defining functions and calling them
CO4	Process compound data using Python data structures
CO5	Utilize Python packages in developing software applications and perform task as an individual and/or team member to manage the task in time

COURSE NAME: BS8161- PHYSICS AND CHEMISTRY LABORATORY

C01	Apply principles of elasticity, optics and thermal properties for engineering application
CO2	The students will be outfitted with hands-on knowledge in the quantitative chemical analysis of water quality related parameters.

SEMESTER-II

COURSE NAME: HS8251- TECHNICAL ENGLISH

C01	Read technical texts proficiently and compose specialized texts within a given area effortlessly.
CO2	Successfully comprehend and internalize lectures and discussions within their specialized field.
CO3	Communicate appropriately and effectively in a variety of formal and informal situations.
CO4	Enhance the skill to clearly and effectively communicate technical information using both written and verbal methods.
CO5	Compose reports and craft compelling job applications that stand out and increase the likelihood of success.

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COURSE NAME: MA8251- ENGINEERING MATHEMATICS – II

C01	Calculate the eigen values and eigenvectors of a matrix, diagonalize symmetric matrices, and determine similarity transformations for matrices.
CO2	Explain gradients, potential functions and directional derivatives functions of several variables.
CO3	Calculate line, surface, and volume integrals utilizing Gauss's divergence theorem, Green's theorem, and Stokes's theorem.
CO4	Discuss Analytic functions in heat and fluid flow
CO5	Explore the role of analytic functions in the context of heat and fluid flow phenomena.

COURSE NAME: PH8253- PHYSICS FOR ELECTRONICS ENGINEERING

C01	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	Knowledge on magnetic and dielectric properties of materials.
CO4	Understand the functioning of optical materials for optoelectronics
CO5	Understand the basics of quantum structures and their applications in spintronics and carbon nanotubes.

COURSE NAME: BE8252- BASIC CIVIL AND MECHANICAL ENGINEERING

C01	Appreciate the Civil and Mechanical Engineering components of Projects.
CO2	Measure distances and area by surveying
CO3	Explain the usage of construction material and proper selection of construction materials.
CO4	Identify the components used in power plant cycle, demonstrate working principles of petrol and diesel engine.
CO5	Elaborate the components of refrigeration and Air conditioning cycle.

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COURSE NAME: EE8251- CIRCUIT THEORY

C01	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	Explain the resonance phenomenon in different coupled tuned circuits
CO4	Discuss the transient response of DC circuits and the characterization of different parameter
CO5	Summarize the three phase circuits with help of voltage and current phasor diagrams

COURSE NAME: GE8291- ENVIRONMENTAL SCIENCE AND ENGINEERING

C01	Study the nature and facts about environment. Finding and implementing scientific, technological, economic and political solutions to environmental problems.
CO2	Study the interrelationship between living organism and environment.
CO3	Appreciate the importance of environment by assessing its impact on the human world; envision the surrounding environment, its functions and its value.
CO4	Study the dynamic processes and understand the features of the earth's interior and surface.
CO5	Study the integrated themes and biodiversity, natural resources, pollution control and waste management.

COURSE NAME: GE8261- ENGINEERING PRACTICES LABORATORY

C01	Identify Tools and Techniques used for Sheet Metal Fabrication
CO2	Use welding equipment to join the structures
CO3	Demonstrate Plumbing requirements of domestic buildings
CO4	Apply the skills of basic electrical engineering for house wiring practice
CO5	Measure various electrical quantities
CO6	Explain the working of electronic components and its utilization

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COURSE NAME: EE8261- ELECTRIC CIRCUITS LABORATORY

C01	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

SEMESTER-III

COURSE NAME: MA8353- TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS

C01	Learn the methods for solving standard partial differential equations.
CO2	Utilize Fourier series analysis for solving differential equations, an essential method in engineering contexts.
CO3	Understand the practical importance of Fourier series methods in addressing one- and two-dimensional heat conduction problems as well as one-dimensional wave equations.
CO4	Understanding the mathematical principles of transforms and partial differential equations enables individuals to formulate and solve a variety of engineering-related physical problems.
CO5	Utilize effective mathematical tools to solve partial differential equations through the application of Z-transform techniques for discrete-time systems.

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COURSE NAME: EE8351- DIGITAL LOGIC CIRCUITS

C01	Convert various number systems; simplify the logical expressions using Boolean functions and compare
CO2	Design of combinational logic circuits, multiplexer, demultiplexer and code converters
CO3	Design a Synchronous Sequential Circuits
CO4	Analyze and design the asynchronous sequential circuit and PLDs
CO5	Develop the VHDL coding for Combinational logic and Sequential circuits and digital Simulation for development of application oriented logic circuits

COURSE NAME: EE8391- ELECTROMAGNETIC THEORY

C01	Explain the basic mathematical concepts related to electromagnetic fields & Electrostatic fields
CO2	Interpret the concepts of electrical potential, energy density and their applications
CO3	Illustrate the concepts of magneto statics, magnetic flux density, scalar and vector potential and its applications
CO4	Explain the concepts of Faradays law, Induced emf and Maxwell's equations to analyze the electrodynamics
CO5	Outline the basic concepts of electromagnetic waves, parameters and Electromagnetic fields and design Electrical equipment and systems

COURSE NAME: EE8301- ELECTRICAL MACHINES – I

C01	Summarize the Magnetic materials used in Magnetic Circuits
CO2	Demonstrate the operation of Transformer
CO3	Explain the Electromechanically Energy Conversion
CO4	Outline the operation of DC Generators
CO5	Outline the operation of DC Motors

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COURSE NAME: EC8353- ELECTRON DEVICES AND CIRCUITS

C01	Able to explain the structure and working operation of basic electronic devices
CO2	Identify and differentiate both active and passive elements
CO3	Analyze the characteristics of different electronic devices such as diodes and transistors
CO4	Choose and adapt the required components to construct an amplifier circuit
CO5	Employ the acquired knowledge in design and analysis of oscillators

COURSE NAME: ME8792- POWER PLANT ENGINEERING

C01	Analyze the layout, construction and working of components inside a thermal power plant
CO2	Acquire the layout, construction and working of the components inside a Diesel, Gas and Combined cycle power plants
CO3	Able to explain the layout, construction and working of the components inside nuclear powerplants
CO4	Identify the layout, construction and working of the components inside Renewable energy power plants
CO5	Infer the applications of power plants while extend their knowledge to power plant economics and environmental hazards and estimate the costs of electrical energy production

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COURSE NAME: EE8311- ELECTRONICS LABORATORY

C01	Illustrate the operation of Semiconductor devices with their characteristics for various applications
CO2	Construct the amplifier and Oscillator Circuits for any frequency using BJT and determine the output responses
CO3	Compare the ripple factor of the diode rectifiers with and without filters
CO4	Identify the performance of Multivibrators and differential amplifier using FET
CO5	Build passive filters for particular cutoff frequencies

COURSE NAME: EE8311- ELECTRICAL MACHINES LABORATORY-I

C01	Analyze the characteristics of DC generator and DC motor on No load and loaded conditions
CO2	Examine the various losses and efficiency of DC machines and transformer
CO3	Sketch the load characteristics of single phase and three phase transformers
CO4	Develop the equivalent circuit of single-phase transformer
CO5	Explain the concepts of starters and connection of three phase transformer

SEMESTER-IV

COURSE NAME: MA8491- Numerical Methods

C01	Describe algebraic and transcendental equations.
CO2	Solve the equations and Eigen value problems.
CO3	Understand the practical applications of numerical interpolation methods and error estimations across different intervals in real-world scenarios.
CO4	Utilize numerical techniques for differentiation and integration in engineering problem-solving.
CO5	Acquire an understanding of the diverse numerical techniques and methods applied in solving first and second-order ordinary differential equations.

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COURSE NAME: EE8401- ELECTRICAL MACHINES – II

C01	Outline the construction and working principle of Synchronous Generator and MMF curves and armature
CO2	Illustrate the principle of operation and performance of Synchronous motor
CO3	Outline the construction and working principle of Three-phase Induction Motor
CO4	Demonstrate the construction and working principle of Special Machines and single-phase induction motor
CO5	Ability to predetermine the performance characteristics of Synchronous Machines

COURSE NAME: EE8402- TRANSMISSION AND DISTRIBUTION

C01	To understand the importance and the functioning of transmission line parameters
CO2	To become familiar with the function of different components used in Transmission and Distribution levels of power system and modelling of these components
CO3	To acquire knowledge on the performance of Transmission Lines
CO4	To acquire knowledge on Underground Cables
CO5	To understand the importance of distribution of the electric power in power system

COURSE NAME: EE8403- MEASUREMENTS AND INSTRUMENTATION

C01	To acquire knowledge on Basic functional elements of instrumentation
CO2	To understand the concepts of Fundamentals of electrical and electronic instruments
CO3	Ability to compare between various measurement techniques
CO4	To acquire knowledge on Various storage and display devices
CO5	To understand the concepts Various transducers and the data acquisition systems

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COURSE NAME: EE8451- LINEAR INTEGRATED CIRCUITS AND APPLICATIONS

C01	Infer the process in IC fabrication procedure
CO2	Analyze the characteristics of op-amp
CO3	Illustrate the importance of signal analysis using op-amp based circuits
CO4	Explain the functional blocks and the applications of special ICs like timers, PLL circuits
CO5	Ability to understand and analyze, linear integrated circuits, fabrication and applications

COURSE NAME: IC8451- CONTROL SYSTEMS

C01	Ability to develop various representations of system based on the knowledge of Mathematics, Science and Engineering fundamentals
CO2	Ability to do time domain and frequency domain analysis of various models of linear systems
CO3	Ability to interpret characteristics of the system to develop mathematical model
CO4	Ability to design appropriate compensator for the given specifications
CO5	Ability to come out with solution for complex control problem

COURSE NAME: EE8411- ELECTRICAL MACHINES LABORATORY - II

C01	Pre-determine the regulation of both salient and non-salient pole Alternators by EMF, MMF and ZPF
CO2	Analyze the Characteristics of synchronous motor using V and inverted V curves
CO3	Determine the efficiency and equivalent circuit parameter of Single and three phase induction motor
CO4	Analyze the response of speed variation in slip-ring Induction motor for change in rotor resistance
CO5	Determine the efficiency and Analyze the losses of Single-Phase Induction Motor

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COURSE NAME: EE8461- LINEAR AND DIGITAL INTEGRATED CIRCUITS LABORATORY

C01	Implement Boolean function using logic gates
CO2	Implement Code conversion using logic gates
CO3	Design and implement 4-bit Shift Registers
CO4	Design and implement applications of Op-Amp
CO5	Design and implement counters using specific counter IC

COURSE NAME: EE8412- TECHNICAL SEMINAR

C01	Function effectively as an individual and Make effective presentation on Engineering/ technology
CO2	Review, prepare and present technological developments in the field of electrical and electronics
CO3	Design documentation and write effective reports on seminar topics
CO4	Perform task as an individual and / or team member to manage the task in time
CO5	Express the Engineering activities with effective presentation and report

SEMESTER -V

COURSE NAME: EE8501- POWER SYSTEM ANALYSIS

C01	Ability to model the power system under steady state operating condition
CO2	Ability to understand and apply iterative techniques for power flow analysis
CO3	Ability to model and carry out short circuit studies on power system
CO4	Ability to acquire knowledge on Fault analysis
CO5	Ability to model and understand various power system components and carry out power flow, short circuit and stability studies

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COURSE NAME: EE8551- MICROPROCESSORS AND MICROCONTROLLERS

C01	Ability to explain the architecture of Microprocessor and Microcontroller
CO2	Ability to acquire knowledge in Addressing modes & instruction set of 8085 & 8051
CO3	Ability to need & use of Interrupt structure 8085 & 8051
CO4	Ability to understand the importance of Interfacing
CO5	Ability to write the assembly language programme, Microprocessor and Microcontroller Applications

COURSE NAME: EE8552- POWER ELECTRONICS

C01	Ability to know about the basic power semiconductor devices
CO2	To Acquire Knowledge about the Phase Controlled Converters
CO3	Ability to analyze the DC-DC Converters
CO4	Ability to analyze the DC-AC Converters
CO5	Ability to analyze the AC-AC Converters

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COURSE NAME: EE8591- DIGITAL SIGNAL PROCESSING

C01	Ability to acquire knowledge on Signals and systems & their mathematical representation
CO2	Ability to understand and analyze the discrete time systems
CO3	Ability to understand the importance of Fourier transform, digital filters and DS Processors
CO4	Ability to understand the types of filters and their design for digital implementation
CO5	Ability to acquire knowledge on programmability digital signal processor & quantization effects

COURSE NAME: CS8392- OBJECT ORIENTED PROGRAMMING

C01	Explain the Object-Oriented Programming concepts and basic features of Java
CO2	Interpret the OOPS principles with packages, inheritance and interfaces
CO3	Interpret exceptions and use I/O streams
CO4	Illustrate a java application with threads and generics classes
CO5	Create interactive Java programs using swings

COURSE NAME: OCE551- AIR POLLUTION AND CONTROL ENGINEERING

C01	Understanding of the nature and characteristics of air pollutants, noise pollution and basic concepts of air quality management
CO2	Ability to identify, formulate and solve air and noise pollution problems
CO3	Ability to design stacks and particulate air pollution control devices to meet applicable standards
CO4	Ability to select control equipments
CO5	Ability to ensure quality, control and preventive measures

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COURSE NAME: EE8511- CONTROL AND INSTRUMENTATION LABORATORY

C01	Analyze the characteristics of P, PI and PID controllers experimentally and analyze the stability of the control system using MATLAB
CO2	Compute the transfer function of a Field controlled DC motor experimentally and analyze the response of Lag, Lead and Lag-Lead Compensators
CO3	Analyze the transient response of Position Control system experimentally and analyze the Characteristics of Synchro-Transmitter- Receiver and to Use MATLAB for the Simulation
CO4	Ability to analyze the basic concepts of bridge networks and to analyze the Dynamics of Sensors/Transducers
CO5	Measure the Power and Energy experimentally and analyze signal conditioning circuits and to Use MATLAB for Process Simulation

COURSE NAME: HS8581- PROFESSIONAL COMMUNICATION

C01	Equip students with essential English language skills crucial for navigating academic pursuits effectively, with a key emphasis on enhancing their abilities in academic speaking and listening.
CO2	Provide assistance and practice sessions to support essential daily conversations and classroom interactions, while employing a focused approach to enhance skills in academic speaking tasks.
CO3	Equip individuals with the necessary writing skills essential for thriving in both academic and professional environments.
CO4	Enable learners to acquire language skills at their own pace by leveraging e-materials and resources available in language labs.
CO5	Enhance the employability skills of aspiring engineers and equip them with the expertise needed to effectively address workplace challenges.

COURSE NAME: CS8383- OBJECT ORIENTED PROGRAMMING LABORATORY

C01	Develop and implement Java programs for simple applications that make use of classes, packages and interfaces
CO2	Develop and implement Java programs with arraylist, exception handling and multithreading
CO3	Design applications using file processing, generic programming and event handling
CO4	Exhibit ethical principles in engineering practices
CO5	Perform task as an individual and / or team member to manage the task in time

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SEMESTER-VI

COURSE NAME: EE8601- SOLID STATE DRIVES

C01	Ability to select suitability drive for the given application
CO2	Ability to analyze the operation of the converter/chopper fed dc drive
CO3	Ability to analyze the operation and performance of AC motor drives
CO4	Ability to analyze the operation and performance of synchronous motor drives
CO5	Ability to analyze and design the current and speed controllers for a closed loop solid state DC motor drive

COURSE NAME: EE8602- PROTECTION AND SWITCHGEAR

C01	Ability to analyze the characteristics and functions of relays and protection schemes
CO2	Ability to understand and analyze Electromagnetic and Static Relays
CO3	Ability to find the causes of abnormal operating conditions of the apparatus and system
CO4	Ability to study about the apparatus protection, static and numerical relays
CO5	Ability to acquire knowledge on functioning of circuit breaker

COURSE NAME: EE8691- EMBEDDED SYSTEMS

C01	Ability to understand and analyze Embedded systems
CO2	Ability to operate various Embedded Development Strategies
CO3	Ability to study about the bus Communication in processors
CO4	Ability to understand basics of Real time operating system
CO5	Ability to acquire knowledge on various processor scheduling algorithms

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COURSE NAME: GE8075- INTELLECTUAL PROPERTY RIGHTS

C01	Understanding the basic concepts of Intellectual Property Rights
CO2	Understand the necessity of patents, copyright, trademark, GI
CO3	Development of design or some innovation for patent application
CO4	Understanding the rights related to Intellectual Property Rights
CO5	Ability to manage Intellectual Property portfolio to enhance the value of the firm

COURSE NAME: EE8006- POWER QUALITY

C01	Ability to understand various sources, causes and effects of power quality issues, electrical systems and their measures and mitigation
CO2	Ability to analyze the causes & Mitigation techniques of various PQ events
CO3	Ability to study about the various Active & Passive power filters
CO4	Ability to understand the concepts about Voltage and current distortions, harmonics
CO5	Ability to acquire knowledge on compensation techniques and Ability to acquire knowledge on DVR.

COURSE NAME: EE8661- POWER ELECTRONICS AND DRIVES LABORATORY

C01	Draw the VI characteristics of SCR and TRIAC
CO2	Analyze the characteristics of MOSFET and IGBT
CO3	Design a single-phase AC to DC half and fully controlled converter
CO4	Analyze the output response of step-down chopper and step up MOSFET and draw the output waveforms of single phase IGBT based PWM inverter
CO5	Observe the response of IGBT based three-phase PWM inverter and Resonant dc-to-dc converter

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COURSE NAME: EE8681- MICROPROCESSORS AND MICROCONTROLLERSLABORATORY

C01	Design a program for arithmetic operation, Ascending/ Descending order, finding Maximum/Minimum numbers, rotate instruction and code conversions and execute using 8085 processor
CO2	Identify and convert Analog to Digital, Digital to Analog numbers and implement the traffic controller with 8085
CO3	Design a code to display the given words using keyboard display controller for serial communication and programming practices with simulator/Emulator /open source
CO4	Analyze a program using read key to interface with display units and demonstrate conditional jumps, loops and calling subroutines with 8051 Microcontroller
CO5	Create program using I/O port ,8051 timer, A/D & D/A interface with DC & AC motors and develop a program for hardware application using embedded processors

COURSE NAME: EE8611- Mini Project

CO1	Evaluate the final year project work and find solution by formulating proper methodology.	Evaluate

SEMESTER-VII

COURSE NAME: EE8701- HIGH VOLTAGE ENGINEERING

C01	Ability to measure over voltages
CO2	Ability to understand Generation of high voltage
CO3	Ability to understand the measurement of high voltage
CO4	Ability to understand High voltage testing
CO5	Ability to test power apparatus and insulation coordination

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COURSE NAME: EE8702- POWER SYSTEM OPERATION AND CONTROL

C01	Ability to understand the day-to-day operation of electric power system.
CO2	Ability to acquire knowledge on real power-frequency interaction
CO3	Ability to understand the reactive power-voltage interaction
CO4	Ability to analyze the control actions to be implemented on the system to meet the minute-to-minute variation of system demand
CO5	Ability to design SCADA and its application for real time operation

COURSE NAME: EE8703- RENEWABLE ENERGY SYSTEMS

C01	Ability to create awareness about renewable Energy Sources and technologies
CO2	Ability to get adequate inputs on a variety of issues in harnessing renewable Energy
CO3	Ability to recognize current and possible future role of renewable energy sources
CO4	Ability to explain the various renewable energy resources and technologies and their applications
CO5	Ability to understand basics about biomass and solar energy

COURSE NAME: OCS752- INTRODUCTION TO C PROGRAMMING

C01	Develop simple applications using basic constructs
CO2	Develop applications using arrays
CO3	Develop applications using strings
CO4	Develop applications using functions
CO5	Develop applications using structures

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COURSE NAME: EI8075- FIBRE OPTICS AND LASER INSTRUMENTS

C01	To expose the students to the basic concepts of optical fibres and their properties
CO2	To provide adequate knowledge about the Industrial applications of optical fibres
CO3	To expose the students to the Laser fundamentals
CO4	To provide adequate knowledge about Industrial application of lasers
CO5	To provide adequate knowledge about holography and Medical applications of Lasers

COURSE NAME: GE8077- TOTAL QUALITY MANAGEMENT

C01	Define the basic concepts of quality management
CO2	Understand the fundamentals of Total Quality Management and its tools
CO3	Examine the role of TQM tools and techniques in elimination of wastages and reduction of defect
CO4	Inculcate the concepts of quality and continuous improvement as a passion and habit
CO5	Analyze and understand the industrial problem and provide the optimal solution

COURSE NAME: EE8711- POWER SYSTEM SIMULATION LABORATORY

C01	Ability to understand power system planning and operational studies
CO2	Ability to acquire knowledge on Formation of Bus Admittance and Impedance Matrices and Solution of Networks
CO3	Ability to analyze the power flow using GS and NR method
CO4	Ability to find Symmetric and Unsymmetrical fault
CO5	Ability to understand the economic dispatch
CO6	Ability to analyze the electromagnetic transients

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COURSE NAME: EE8712- RENEWABLE ENERGY SYSTEM LABORATORY

C01	Ability to understand and analyze Renewable energy systems
CO2	Ability to train the students in Renewable Energy Sources and technologies
CO3	Ability to provide adequate inputs on a variety of issues in harnessing Renewable Energy
CO4	Ability to simulate the various Renewable energy sources
CO5	Ability to recognize current and possible future role of Renewable energy sources
CO6	Ability to understand basics of Intelligent Controllers

SEMESTER-VIII

COURSE NAME: GE8076- PROFESSIONAL ETHICS IN ENGINEERING

C01	Illustrate the core values that enrich the ethical behavior of an engineer
CO2	Discuss the importance of moral issues and theories of the profession
CO3	Associate the code of ethics in real time application as responsible experimenters with various social issues
CO4	Relate the suitable safety measures towards risk benefit analysis
CO5	Explain the concepts of Professional rights, Employee rights, Confidentiality, conflicts of interest and IPR

COURSE NAME: EI8075- BIOMEDICAL INSTRUMENTATION

C01	Ability to understand the philosophy of the heart, lung, blood circulation and respiration system
CO2	Ability to provide latest ideas on devices of non-electrical devices
CO3	Ability to gain knowledge on various sensing and measurement devices of electrical origin
CO4	Ability to bring out the important and modern methods of imaging techniques and their analysis
CO5	Ability to explain the medical assistance/techniques, robotic and therapeutic equipments

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COURSE NAME: EE8811- PROJECT WORK

CO1	On Completion of the project work students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology