INFO INSTITUTE OF ENGINEERING,COIMBATORE

DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAM OUTCOMES

1. **Engineeringknowledge**:Applytheknowledgeofmathematics,science,engineeringfundamentals and an engineering specialization to the solution of complex engineeringproblems.

2. **Problem analysis**: Identify, formulate, review research literature, and analyze complexengineeringproblemsreachingsubstantiatedconclusionsusingfirstprinciplesofmathematics,naturalsciences,andengineeringsciences.

3. **Design/development of solutions**: Design solutions for complex engineering problemsanddesignsystemcomponentsorprocessesthatmeetthespecifiedneedswithappropriate consideration for the public health and safety, and the cultural, societal, andenvironmentalconsiderations.

4. **Conductinvestigationsofcomplexproblems**:Useresearch-basedknowledgeandresearch methods including design of experiments, analysis and interpretation of data, andsynthesisofthe informationtoprovidevalidconclusions.

5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, andmodern engineering and IT tools including prediction and modeling to complex engineeringactivitieswithanunderstandingofthelimitations.

6. **The engineer and society**: Apply reasoning informed by the contextual knowledge toassesssocietal,health,safety,legalandculturalissuesandtheconsequentresponsibilities relevanttotheprofessionalengineeringpractice.

7. **Environment and sustainability**: Understand the impact of the professional engineeringsolutions in societal and environmental contexts, and demonstrate the knowledge of, andneedforsustainabledevelopment.

8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities andnorms oftheengineeringpractice.

9. **Individual and team work**: Function effectively as an individual, and as a member orleaderindiverseteams,andinmultidisciplinarysettings.

10. **Communication**:Communicateeffectivelyoncomplexengineeringactivitieswiththeengineering community and with society at large, such as, being able to comprehend andwrite effective reports and design documentation, make effective presentations, and giveandreceiveclearinstruction

11. **Project management and finance**: Demonstrate knowledge and understanding of theengineering and management principles and apply these to one‘s own work, as a memberand leaderin ateam,tomanageprojectsandinmultidisciplinaryenvironments.

12. **Life-longlearning**:Recognizetheneedfor,andhavethepreparationandabilitytoengageinindependentandlife-longlearninginthebroadestcontextoftechnologicalchange.

PROGRAMME EDUCATIONAL OBJECTIVES

- Have successful technical and professional careers in their chosen fields such as circuit theory, Field theory, control theory and computational platforms.

- Engross in life long process of learning to keep themselves abreast of new developments in the field of Electronics and their applications in power engineering.

PROGRAM SPECIFIC OUTCOMES

PSO 1 Provide optimal solution in the field of power sector.

PSO 2 Apply suitable electronic controllers for power conversion, control and automation.

PSO 3 Make use of appropriate technique and modern tools to analyze and evaluate the performance of electrical machines and electronic circuits.

COURSE OUTCOMES

Regulation 2017 Anna University Chennai

SUBJECT	COs	
I Semester		
HS8151-Communicative English	CO1	Read articles of a general kind in magazines and newspapers.
	CO2	Participate effectively in informal conversations; introduce themselves and their friends and express opinions in English
	CO3	Comprehend conversations and short talks delivered in English
	CO4	Use electronic media.
	CO5	Write short essays of a general kind and personal letters and emails in English
MA8151-Engineering Mathematics – I	CO1	Use both 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.
PH8151-Engineering Physics	CO1	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	Adequate knowledge on the concepts of thermal properties of materials and their applications in expansion joints and heat exchangers
	CO4	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

CY8151 - Engineering Chemistry	CO1	Gain knowledge on the engineering materials
	CO2	Gain knowledge on the fuels, energy sources and
	CO3	Gain knowledge on the water treatment techniques
	CO4	Understand the concept of engineering processes
	CO5	Understand the applications for further learning.
GE8151 - Problem Solving and Python Programming	CO1	Develop algorithmic solutions to simple computational problems
	CO2	Read, write, execute by hand simple Python programs..
	CO3	Structure simple Python programs for solving problems.
	CO4	Decompose a Python program into functions.
	CO5	Represent compound data using Python lists, tuples, and dictionaries.
GE8152 - Engineering Graphics	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, solids, and development of surfaces.
	CO5	Visualize and to project isometric and perspective sections of simple solids.
GE8161- Problem Solving and Python Programming Laboratory	CO1	Write, test, and debug simple Python programs.
	CO2	Implement Python programs with conditionals and loops.
	CO3	Develop Python programs step-wise by defining functions and calling them.
	CO4	Use Python lists, tuples, dictionaries for representing compound data.
	CO5	Read and write data from/to files in Python.
BS8161 - Physics and Chemistry Laboratory	CO1	Apply principles of elasticity, engineering applications.
	CO2	Optics engineering applications.
	CO3	Thermal properties for engineering applications.

	CO4	Understand the engineering properties of the various materials
	CO5	Operate the different types conductivity meter to find the conductance of solution.

II Semester		
HS8251 - Technical English	CO1	Express their opinions clearly, convincingly, initiate a discussion, negotiate, argue using appropriate communicative strategies.
	CO2	Write effectively and persuasively and produce different types of writing such as narration, description, exposition and argument as well as creative, critical, analytical and evaluative writing.
	CO3	Tell different genres of texts infer implied meanings and critically analyse and evaluate them for ideas as well as for method of presentation.
	CO4	Understand different spoken excerpts critically and infer unspoken and implied meanings.
	CO5	Express their language skills at academic as well as workplace.
MA8251- Engineering Mathematics – II	CO1	Solve the problems related to vector calculus.
	CO2	Analyze ordinary differential equations in model engineering problems.
	CO3	Develop Laplace transform technique in linear ODE of second order with constant coefficients.
	CO4	Analyze the fundamental analytic functions.
	CO5	Explain the standard technique of complex variable theory.
PH8253 - Physics for Electronics Engineering	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 and dielectric properties of materials
	CO4	have the necessary understanding on the functioning of optical materials for optoelectronics,
	CO5	understand the basics of quantum structures and their applications in spintronics and carbon electronics.
BE8252 - Basic Civil and	CO1	Appreciate the Civil and Mechanical Engineering components of Projects.

Mechanical Engineering	CO2	Explain the usage of construction material and proper selection of construction 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 and also elaborate the components of refrigeration and Air conditioning cycle.
EE8251 - Circuit Theory	CO1	To introduce electric circuits and its analysis
	CO2	To impart knowledge on solving circuit equations using network theorems
	CO3	To introduce the phenomenon of resonance in coupled circuits
	CO4	To educate on obtaining the transient response of circuits.
	CO5	To introduce Phasor diagrams and analysis of three phase circuits
GE8291- Environmental Science and Engineering	CO1	Acquired knowledge to solve environmental problems.
	CO2	Understood relationship between biotic and abiotic components
	CO3	Knew the role of human beings in maintaining a clean environment and the values of biodiversity.
	CO4	Able to understand topography and geographic distribution of organism.
	CO5	Conscious about conserving the natural resources and creating pollution free environment.
GE8261 - Engineering Practices Laboratory	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, foundary and fittings.
EE8261 - Electric Circuits Laboratory	CO1	To simulate various electric circuits using Pspice/ Matlab/e-Sim / Scilab

	CO2	To gain practical experience on electric circuits and verification of theorems
	CO3	Understand and apply circuit theorems and concepts in engineering applications.
	CO4	Design and Simulate electric circuits like RL, RC and RLC
	CO5	Design and Simulate series and parallel resonant circuits.

III Semester		
MA8353- Transforms and PartialDifferential Equations ,	CO1	Understand how to solve the given standard partial differential equations.
	CO2	Solve differential equations using Fourier series analysis which plays a vital role in engineering applications
	CO3	Appreciate the physical significance of Fourier series techniques in solving one and two dimensional heat flow problems and one dimensional wave equation.
	CO4	Understand the mathematical principles on transforms and partial differential equations would provide them the ability to formulate and solve some of the physical problems of engineering
	CO5	Use the effective mathematical tools for the solutions of partial differential equations byusing Z transform techniques for discrete time systems.
EE8351- Digital Logic Circuits	CO1	Ability to study various number systems and simplify the logical expressionsusing Boolean functions
	CO2	Ability to design combinational and sequential Circuits.
	CO3	Ability to design various synchronous and asynchronous circuits.
	CO4	Ability to introduce asynchronous sequential circuits and PLDs
	CO5	Ability to introduce digital simulation for development of application oriented logic circuits and Ability to simulate using software package.
EE8391 - Electromagnetic Theory	CO1	Understand the basic mathematical concepts related to electromagnetic vector fields
	CO2	Acquire the knowledge Electrostatic fields, electrical potential, energy density and their applications

	CO3	Get the exposure towards Magneto static fields, magnetic flux density, vector potential and its applications.
	CO4	Gain the knowledge on Different methods of emf generation and Maxwell's equations
	CO5	Learn about Electromagnetic waves and characterizing parameters.
EE8301- Electrical Machines - I	CO1	Students will be able to summarize the concepts of magnetic circuits and properties of magnetic materials.
	CO2	Students will be able to analyze the performance, testing and parallel operation of transformers.
	CO3	Students will be able to describe the concepts of electro mechanical energy conversion
	CO4	Students will be able to discuss the principle, characteristics, starting methods and speed control of DC motors.
	CO5	Students will be able Investigate and test the performance of DC machines.
EC8353 - Electron Devices and Circuits	CO1	To understand the structure and working operation of basic electronic devices.
	CO2	Able to 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
ME8792 - Power Plant Engineering	CO1	Illustrate the layout, accessories and safety measures of Thermal power plant.
	CO2	Describe the working of power generation based on the Diesel, and Gas power plants.
	CO3	Compare the various reactors based nuclear power plants and its operations.
	CO4	Derive an idea of how renewable energy sources can be utilized to generate electric Power.
	CO5	Solve energy and economic related issues in power sectors.

EC8311- Electronics Laboratory	CO1	Illustrate the structure and characteristics of basic electronic devices
	CO2	Modeling of amplifiers and oscillators using basic electronic devices
	CO3	Demonstrate oscillators using basic electronic devices.
	CO4	Design applications using the basic electronic devices
	CO5	Differentiate Electronic devices
EE8311- Electrical Machines Laboratory – I	CO1	Draw the open circuit and load characteristics of different types of generators and transformers.
	CO2	Test on various types of motors and transformers for various loading conditions.
	CO3	Control the speed of DC shunt motor.
	CO4	Work on the losses of single phase transformer.
	CO5	Demonstrate the starters and 3-phase transformers connections.
IV -SEMESTER		
MA8491 - Numerical Methods	CO1	Understand the basic concepts and techniques of solving algebraic and transcendental equations.
	CO2	Appreciate the numerical techniques of interpolation and error approximations in various intervals in real life situations.
	CO3	Apply the numerical techniques of differentiation and integration for engineering problems.
	CO4	Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations.
	CO5	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications.
EE8401- Electrical Machines - II	CO1	Students will be able to summarize the concepts of magnetic circuits and properties of magnetic materials.
	CO2	Students will be able to Analyze the performance, testing and parallel operation of transformers.
	CO3	Students will be able to describe the concepts of electro mechanical energy

	CO4	Students will be able toDiscuss the principle, characteristics, starting methods and speed control of DC motors.
	CO5	Students will be able Investigate and test the performance of DC machines.
EE8402 - Transmission and Distribution	CO1	Students are able to know the operation of different distribution schemes.
	CO2	Students are able to compute transmission line parameters.
	CO3	Students are capable to develop the equivalent circuits and estimate voltage regulation and efficiency of transmission lines.
	CO4	Students have the ability to analyze the voltage distribution on insulators and cables.
	CO5	Students are able to design lines and explain grounding.

EE8403 - Measurements and Instrumentation	CO1	Students have understood the basic functional elements of instrumentation
	CO2	Ability to model and analyze electrical apparatus and their application to power system.
	CO3	Students have acquired the knowledge to compare the various methods of Measurement.
	CO4	Students are able to identify the various storage and display devices
	CO5	Students have got exposure towards various transducers and data acquisition system
EE8451- Linear Integrated Circuits andApplications	CO1	Describe IC fabrication Technology.
	CO2	Draw the characteristics and small signal analysis of Op-amp Ics
	CO3	Apply the concept of Operational amplifier to various applications
	CO4	Summarize the characteristics of special and application ICs.
	CO5	Analyze linear electronic circuits.
C8451- Control	CO1	Use transfer function models for analysis physical

Systems		systems and recall the control system components.
	CO2	Compute time response and steady state error analysis
	CO3	To Construct various plots and analyze system stability.
	CO4	Design compensators.
	CO5	Relate physical systems as state variable model and describe analysis.
EE8411 - Electrical Machines Laboratory - II	CO1	Find the regulation, impedances of three phase alternator using appropriate methods
	CO2	Draw the load characteristics of single phase and three phase induction motor
	CO3	Demonstrate the no load and blocked rotor test on induction motors.
	CO4	Draw the V and Inverted V curves for three phase synchronous motor.
	CO5	Demonstrate the types of starter in induction motors.
EE8461 - Linear and Digital Integrated CircuitsLaboratory	CO1	Demonstrate the Boolean Functions, Adder/ Subtractor circuits.
	CO2	Design and demonstrate the Combinational (Code converters & Shift registers)
	CO3	Design and demonstrate the Sequential Circuits (Counters).
	CO4	Demonstrate the applications of Op-Amp (inverting and non-inverting amplifier, Adder, comparator, Integrator and Differentiator).
	CO5	Show the functions of NE/SE 555 timer (Astable and Monostable), 565(VCO and PLC) and 566(V/I).
EE8412 - Technical Seminar	CO1	Explain the advanced technological developments using various teaching aids.
	CO2	Prepare technical reports.
	CO3	Express the technical skill during Placement interviews
	CO4	Show an attitude of learning consistently/continuously
	CO5	Compare technological developments.
SEMESTER-V		
EE8501- Power System Analysis	CO1	Construct a model for power system.
	CO2	Analyze per unit value and draw the single line diagram.

	CO3	Apply numerical methods to solve the power flow problem.
	CO4	Model and analyze the system under balanced and unbalanced faulted conditions.
	CO5	Analyze transient stability of power system.
EE8551- Microprocessors and Microcontrollers	CO1	Describe the basic building block diagram of 8085 processor and 8051 Micro controller.
	CO2	Recognize the addressing modes & instruction set of 8085 & 8051.
	CO3	Solve simple ALP program on 8085 processor and 8051 Micro controller.
	CO4	Interpret the peripheral interfacing of 8085 and 8051.
	CO5	Apply the concepts of micro controller in real time application.
EE8552 - Power Electronics	CO1	Describe the operational characteristics of different types of power switching devices and design protection circuit for the same. (U&A)
	CO2	Describethe basic concepts and derive the performance parameters of single phase and three phase controlled rectifier.
	CO3	Explain the operation, control strategy and commutation circuit of different types of DC-DC Converter.
	CO4	Analyze 1-phase and 3-phase inverter circuit and various harmonic control techniques
	CO5	Explain the operation of 1-phase and 3-phase AC –AC voltage controller with power factor control and cyclo-converter.
EE8591 - Digital Signal Processing	CO1	Explain signals and systems & their mathematical representation.
	CO2	Analyze the discrete time system.
	CO3	understand Transformations Techniques and their computation
	CO4	Design of FIR & IIR Filter by applying window and frequency sampling techniques effects
	CO5	Draw the programmable digital signal processor & quantization
CS8392 - Object	CO1	To understand Object Oriented Programming concepts

Oriented Programming		and basic characteristics of Java
	CO2	To know the principles of packages, inheritance and interfaces
	CO3	To define exceptions and use I/O streams
	CO4	To develop a java application with threads and generics classes
	CO5	To design and build simple Graphical User Interfaces
Sensors and Transducers	**CO1**	Use concepts in common methods for converting a physical parameter into an electrical quantity .
	CO2	Classify and explain with examples of transducers, including those for measurement of temperature, strain, motion, position and light
	CO3	Choose proper sensor comparing different standards and guidelines to make sensitive measurements of physical parameters like pressure, flow, acceleration, etc
	CO4	Predict correctly the expected performance of various sensors
	CO5	Classify different type of sensors used in real life applications and paraphrase their importance
EE8511 - Control and Instrumentation Laboratory	CO1	Design a lead lag compensator and bridges.
	CO2	Derive the model and analyse the system.
	CO3	Simulate control systems using MATLAB
	CO4	Compute the power and energy.
	CO5	Practice on signal conditioning circuits and transducers
HS8581 – Professional Communication	CO1	Enhance the Employability and Career Skills of students
	CO2	Orient the students towards grooming as a professional
	CO3	Make them Employability Graduates
	CO4	

		Develop their confidence and help them attend interviews successfully
CS8383 - Object Oriented Programming Laboratory	CO1	Make use of objects, functions and Constructor to solve simple problems.
	CO2	Apply the compile time, runtime polymorphism and file handling concepts using C++ programs
	CO3	Develop the simple JAVA application.
	CO4	Experiment with concepts like packages, interfaces in JAVA
	CO5	Utilize the threading and exception handling concepts of JAVA
SEMESTER VI		
EE8601 - Solid State Drives	CO1	Describe steady state operation and transient dynamics of a motor load system.
	CO2	Apply and analyze the operation of DC drive
	CO3	Design AC motor speed control drives using voltage and flux control method in closed loop
	CO4	Analyze and design closed loop controllers for AC and DC drives.
	CO5	Discuss the operation and performance of AC motor drives
EE8602 - Protection and Switchgear	CO1	Illustrate the causes of abnormal conditions of the apparatus and system
	CO2	Compare and discuss the characteristics and functions of relays.

	CO3	Describe the apparatus protection.
	CO4	Explain static relays and numerical protection
	CO5	Summarize the functions of Circuit breaker
EE8691 - Embedded Systems	CO1	Summarize the basic building blocks of embedded system
	CO2	Illustrate different interfacing system bus and networking.
	CO3	Draw the diagrams models for Embedded Firmware development Environment
	CO4	Analyze the concepts of RTOS.
	CO5	Interpret various embedded development strategies.
EE8002 - Design of Electrical Apparatus	CO1	Derive main idea about major considerations of electrical machine design.
	CO2	Design armature and field systems for D.C. machines
	CO3	Design core, yoke, windings and cooling systems of transformers
	CO4	Design stator and rotor of induction machines
	CO5	Design the rotor of synchronous machines
EE8006-Power Quality	CO1	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 analyze and design the passive filters.
EC8395-Communication Engineering	CO1	Ability to comprehend and appreciate the significance and role of this course in the present contemporary world
	CO2	Apply analog and digital communication techniques
	CO3	Use data and pulse communication techniques.
	CO4	Analyze Source and Error control coding
EE8661 - Power Electronics and Drives Laboratory	CO1	Generate triggering Pulses using R, RC and UJT circuits.
	CO2	Derive the characteristics curves of power thyristor and transistors
	CO3	Demonstrate controlled rectifiers, PWM inverters and Step down and step up DC-DC converter.
	CO4	Work on AC voltage controllers and SMPC.
	CO5	Simulate Power Electronics circuits using MATLAB/PSPICE
EE8681 - Microprocessors and Microcontrollers Laboratory	CO1	Develop program on simple arithmetic operations in 8085 microprocessor and 8051 micro controller.
	CO2	Demonstrate the programming with control instructions in 8085 micro processor.
	CO3	Demonstrate the interfacing devices with 8085 microprocessor.
	CO4	Apply computing platform and software for engineering problems.
	CO5	Develop a mini project with microprocessors and microcontrollers.
EE8611 - Mini	CO1	Review all subjects in core area.

Project	CO2	To develop their own innovative prototype of ideas.
	CO3	Analyze the practical problems and justify the solution by a new methodology
	CO4	Prepare an effective report on complex engineering problems
	CO5	Endeavour to get technological upgrade of knowledge
SEMESTER-VII		
EE8701 - High Voltage Engineering	CO1	Interpret various types of over voltages in power system and protection methods
	CO2	Explain about generation of over voltages in laboratories
	CO3	Discuss measurement of over voltage
	CO4	Illustrate nature of breakdown mechanism in solid, liquid and gaseous dielectrics
	CO5	Describe the testing of power apparatus and insulation coordination
EE8702 - Power System Operation and Control	CO1	Interpret the techniques of forecasting and plant level and system level Control
	CO2	To model power-frequency dynamics and to design power-frequency controller
	CO3	To model reactive power-voltage interaction and the control actions against varying system load.
	CO4	Solve unit commitment and economic dispatch problems for the economic operation of power system.
	CO5	Illustrate SCADA and EMS functions for the control of power systems
EE8703 - Renewable Energy	CO1	Awareness about renewable Energy Sources and technologies.

Systems		
	CO2	Adequate inputs on a variety of issues in harnessing renewable Energy
	CO3	To know about solar PV and Thermal systems
	CO4	To make awareness about the generation of energy from bio mass resources
	CO5	Recognize current and possible future role of renewable energy sources
OML751-Testing of Materials	CO1	Identify suitable testing technique to inspect industrial component
	CO2	Ability to use the different technique and know its applications and limitations
GE8077-Total quality Management	CO1	The student would be able to apply the tools and techniques of quality management to manufacturing and services processes.
GE8071- Disaster Management	CO1	To provide students an exposure to disasters, their significance and types.
	CO2	To ensure that students begin to understand the relationship between vulnerability, disasters, disaster prevention and risk reduction
	CO3	To gain a preliminary understanding of approaches of Disaster Risk Reduction (DRR)
	CO4	To enhance awareness of institutional processes in the country
	CO5	To develop rudimentary ability to respond to their surroundings with Potential disaster response in areas where they live, with due sensitivity
EE8010- Power Systems Transients	CO1	Describe the generation of switching transients and their control using circuit – theoretical concept
	CO2	Illustrate the mechanism of lighting strokes and the production of lighting surges.
	CO3	Differentiate the propagation, reflection and refraction of travelling waves.

	CO4	Explain the impact of voltage transients caused by faults, circuit breaker action, load rejection on integrated power system
	CO5	Apply EMTP for computation of transients
GE8074-Human Rights	CO1	Engineering students will acquire the basic knowledge of human rights.
EE8711 - Power System Simulation Laboratory	CO1	Construct the modelling of transmission lines.
	CO2	Analyse the performance of power system parameters using MATLAB coding
	CO3	Solve the power flow problems using MATLAB coding
	CO4	Demonstrate the stability and fault analysis of power system using MATLAB coding.
	CO5	Understand the power system protection
EE8712 - Renewable Energy Systems Laboratory	CO1	To train the students in Renewable Energy Sources and technologies
	CO2	To provide adequate inputs on a variety of issues in harnessing Renewable Energy
	CO3	To recognize current and possible future role of Renewable energy sources
	CO4	To understand the behaviour of intelligent control on Hybrid systems
	CO5	To know about performance measures in renewable energy systems
SEMESTER-VIII		
GE8076 -	CO1	Apply ethics in society.

Professional Ethics in Engineering		
	CO2	Analyze the ethical issues related to engineering
	CO3	Tell the responsibilities and rights in the society
	CO4	Demonstrate Engineering ethics
	CO5	Express Moral and Social values
EE8018- Microcontroller based system design	CO1	Ability to understand and apply computing platform and software for engineering problems.
	CO2	Ability to understand the concepts of Architecture of PIC microcontroller
	CO3	Ability to acquire knowledge on Interrupts and timers.
	CO4	Ability to understand the importance of Peripheral devices for data communication.
	CO5	Ability to understand the basics of sensor interfacing.
EI8073- Biomedical Instrumentation	CO1	Ability to understand the philosophy of the heart, lung, blood circulation
	CO2	Ability to provide latest ideas on devices of non-electrical devices.respirationsystem
	CO3	Ability to gain knowledge on various sensing and measurement devices of electrical origin.
	CO4	Ability to understand the analysis systems of various organ types
	CO5	Ability to bring out the important and modern methods of imaging techniques and their analysis.
EE8811- Project Work	CO1	Review all subjects in core area
	CO2	Derive solution for complex engineering problems
	CO3	Analyze the practical problems and justify the solution by a new methodology
	CO4	Prepare an effective report on complex engineering problems
	CO5	Endeavour to get technological upgrade of knowledge