COURSE OUTCOMES

SEMESTER III

MA8353 TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS

OUTCOMES :

- Understand how to solve the given standard partial differential equations.
- Solve differential equations using Fourier series analysis which plays a vital role in engineering applications.
- Appreciate the physical significance of Fourier series techniques in solving one and two dimensional heat flow problems and one dimensional wave equations.
- 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.
- Use the effective mathematical tools for the solutions of partial differential equations by using Z transform techniques for discrete time systems.

EE8351 DIGITAL LOGIC CIRCUITS

OUTCOMES:

- Ability to design combinational and sequential Circuits.
- Ability to simulate using software package.
- Ability to study various number systems and simplify the logical expressions using Boolean functions
- Ability to design various synchronous and asynchronous circuits.
- Ability to introduce asynchronous sequential circuits and PLDs
- Ability to introduce digital simulation for development of application oriented logic circuits.

EE8391 ELECTROMAGNETIC THEORY

OUTCOMES:

- Ability to understand the basic mathematical concepts related to electromagnetic vector fields.
- Ability to understand the basic concepts about electrostatic fields, electrical potential, energy density and their applications.
- Ability to acquire the knowledge in magneto static fields, magnetic flux density, vector potential and its applications.
- Ability to understand the different methods of emf generation and Maxwell's equations
- Ability to understand the basic concepts electromagnetic waves and characterizing parameters
- Ability to understand and compute Electromagnetic fields and apply them for design and analysis of electrical equipment and systems

EE8301 ELECTRICAL MACHINES – I

OUTCOMES:

- Ability to analyze the magnetic-circuits.
- Ability to acquire the knowledge in constructional details of transformers.
- Ability to understand the concepts of electromechanical energy conversion.
- Ability to acquire the knowledge in working principles of DC Generator.
- Ability to acquire the knowledge in working principles of DC Motor
- Ability to acquire the knowledge in various losses taking place in D.C. Machines

EC8353 ELECTRON DEVICES AND CIRCUITS

OUTCOMES:

- Explain the structure and working operation of basic electronic devices.
- Ability to identify and differentiate both active and passive elements
- Analyze the characteristics of different electronic devices such as diodes and transistors
- Choose and adapt the required components to construct an amplifier circuit.
- Employ the acquired knowledge in design and analysis of oscillators

ME8792 POWER PLANT ENGINEERING

OUTCOMES:

- Discuss different power generation methods and boilers and estimate load curves and load duration curves.
- Explain the layout, construction and working of the components inside a thermal power plant.
- Explain the layout, construction and working of the components inside nuclear and hydro electric power plants.
- Explain the layout, construction and working of the components inside diesel and gas turbine power plants.
- Explain the applications of renewable energy on power plants while extend their knowledge to power plant economics and environmental hazards and estimate the costs of electrical energy production.

EC8311 ELECTRONICS LABORATORY

OUTCOMES:

- Ability to understand and analyze electronic circuits

EE8311 ELECTRICAL MACHINES LABORATORY-I

OUTCOMES:

- Ability to understand and analyze DC Generator
- Ability to understand and analyze DC Motor
- Ability to understand and analyze Transformers

SEMESTER IV

MA8491 NUMERICAL METHODS

OUTCOMES:

- Understand the basic concepts and techniques of solving algebraic and transcendental equations.
- Appreciate the numerical techniques of interpolation and error approximations in various intervals in real life situations.
- Apply the numerical techniques of differentiation and integration for engineering problems.
- Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations.
- Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications.

EE8401 ELECTRICAL MACHINES – II

OUTCOMES:

- Ability to understand the construction and working principle of Synchronous Generator
- Ability to understand MMF curves and armature windings.
- Ability to acquire knowledge on Synchronous motor.
- Ability to understand the construction and working principle of Three phase Induction Motor
- Ability to understand the construction and working principle of Special Machines
- Ability to predetermine the performance characteristics of Synchronous Machines.

EE8402 TRANSMISSION AND DISTRIBUTION

OUTCOMES:

- To understand the importance and the functioning of transmission line parameters.
- To understand the concepts of Lines and Insulators.
- To acquire knowledge on the performance of Transmission lines.
- To understand the importance of distribution of the electric power in power system.
- To acquire knowledge on Undergroud Cabilitys
- To become familiar with the function of different components used in Transmission and Distribution levels of power system and modelling of these components.

EE8403 MEASUREMENTS AND INSTRUMENTATION

OUTCOMES:

- To acquire knowledge on Basic functional elements of instrumentation
- To understand the concepts of Fundamentals of electrical and electronic instruments
- Ability to compare between various measurement techniques
- To acquire knowledge on Various storage and display devices
- To understand the concepts Various transducers and the data acquisition systems
- Ability to model and analyze electrical and electronic Instruments and understand the operational features of display Devices and Data Acquisition System.

EE8451 LINEAR INTEGRATED CIRCUITS AND APPLICATIONS

OUTCOMES:

- Ability to acquire knowledge in IC fabrication procedure
- Ability to analyze the characteristics of Op-Amp
- To understand the importance of Signal analysis using Op-amp based circuits.
- Functional blocks and the applications of special ICs like Timers, PLL circuits, regulator Circuits.
- To understand and acquire knowledge on the Applications of Op-amp
- Ability to understand and analyse, linear integrated circuits their Fabrication and Application.

IC8451 CONTROL SYSTEMS

OUTCOMES:

- Ability to develop various representations of system based on the knowledge of Mathematics, Science and Engineering fundamentals.
- Ability to do time domain and frequency domain analysis of various models of linear system.
- Ability to interpret characteristics of the system to develop mathematical model.
- Ability to design appropriate compensator for the given specifications.
- Ability to come out with solution for complex control problem.
- Ability to understand use of PID controller in closed loop system.

EE8411 ELECTRICAL MACHINES LABORATORY – II

OUTCOMES:

- Ability to understand and analyze EMF and MMF methods
- Ability to analyze the characteristics of V and Inverted V curves
- Ability to understand the importance of Synchronous machines
- Ability to understand the importance of Induction Machines
- Ability to acquire knowledge on separation of losses

EE8461 LINEAR AND DIGITAL INTEGRATED CIRCUITS LABORATORY

OUTCOMES:

- Ability to understand and implement Boolean Functions.
- Ability to understand the importance of code conversion
- Ability to Design and implement 4-bit shift registers
- Ability to acquire knowledge on Application of Op-Amp
- Ability to Design and implement counters using specific counter IC.

EE8412 TECHNICAL SEMINAR

OUTCOMES:

- Ability to review, prepare and present technological developments
- Ability to face the placement interviews

SEMESTER V

EE8501 POWER SYSTEM ANALYSIS

OUTCOMES:

- Ability to model the power system under steady state operating condition
- Ability to understand and apply iterative techniques for power flow analysis
- Ability to model and carry out short circuit studies on power system
- Ability to model and analyze stability problems in power system
- Ability to acquire knowledge on Fault analysis.
- Ability to model and understand various power system components and carry out power flow, short circuit and stability studies.

EE8551 MICROPROCESSOR AND MICROCONTROLLERS

OUTCOMES:

- Ability to acquire knowledge in Addressing modes & instruction set of 8085 & 8051.
- Ability to need & use of Interrupt structure 8085 & 8051.
- Ability to understand the importance of Interfacing
- Ability to explain the architecture of Microprocessor and Microcontroller.
- Ability to write the assembly language programme.
- Ability to develop the Microprocessor and Microcontroller based applications.

EE8552 POWER ELECTRONICS

OUTCOMES:

- Ability to analyse AC-AC and DC-DC and DC-AC converters.
- Ability to choose the converters for real time applications.

EE8591 DIGITAL SIGNAL PROCESSING

OUTCOMES:

- Ability to understand the importance of Fourier transform, digital filters and DS Processors.
- Ability to acquire knowledge on Signals and systems & their mathematical representation.
- Ability to understand and analyze the discrete time systems.
- Ability to analyze the transformation techniques & their computation.
- Ability to understand the types of filters and their design for digital implementation.
- Ability to acquire knowledge on programmability digital signal processor & quantization effects.

CS8392 OBJECT ORIENTED PROGRAMMING

OUTCOMES:

- Develop Java programs using OOP principles
- Develop Java programs with the concepts inheritance and interfaces
- Build Java applications using exceptions and I/O streams
- Develop Java applications with threads and generics classes
- Develop interactive Java programs using swings

EE8511 CONTROL AND INSTRUMENTATION LABORATORY

OUTCOMES:

- Ability to understand control theory and apply them to electrical engineering problems.
- Ability to analyze the various types of converters.
- Ability to design compensators
- Ability to understand the basic concepts of bridge networks.
- Ability to the basics of signal conditioning circuits.
- Ability to study the simulation packages.

HS8581 PROFESSIONAL COMMUNICATION

OUTCOMES:

- Make effective presentations
- Participate confidently in Group Discussions.
- Attend job interviews and be successful in them.
- Develop adequate Soft Skills required for the workplace

CS8383 OBJECT ORIENTED PROGRAMMING LABORATORY

OUTCOMES:

- Develop and implement Java programs for simple applications that make use of classes, packages and interfaces.
- Develop and implement Java programs with arraylist, exception handling and multithreading .
- Design applications using file processing, generic programming and event handling.

SEMESTER VI

EE8601 SOLID STATE DRIVES

OUTCOMES:

- Ability to understand and suggest a converter for solid state drive.
- Ability to select suitability drive for the given application.
- Ability to study about the steady state operation and transient dynamics of a motor load system.
- Ability to analyze the operation of the converter/chopper fed dc drive.
- Ability to analyze the operation and performance of AC motor drives.
- Ability to analyze and design the current and speed controllers for a closed loop solid state DC motor drive.

EE8602 PROTECTION AND SWITCHGEAR

OUTCOMES:

- Ability to understand and analyze Electromagnetic and Static Relays.
- Ability to suggest suitability circuit breaker.
- Ability to find the causes of abnormal operating conditions of the apparatus and system.
- Ability to analyze the characteristics and functions of relays and protection schemes.
- Ability to study about the apparatus protection, static and numerical relays.
- Ability to acquire knowledge on functioning of circuit breaker.

EE8691 EMBEDDED SYSTEMS

OUTCOMES:

- Ability to understand and analyze Embedded systems.
- Ability to suggest an embedded system for a given application.
- Ability to operate various Embedded Development Strategies
- Ability to study about the bus Communication in processors.
- Ability to acquire knowledge on various processor scheduling algorithms.
- Ability to understand basics of Real time operating system.

EE8661 POWER ELECTRONICS AND DRIVES LABORATORY

OUTCOMES:

- Ability to practice and understand converter and inverter circuits and apply software for engineering problems.
- Ability to experiment about switching characteristics various switches.
- Ability to analyze about AC to DC converter circuits.
- Ability to analyze about DC to AC circuits.
- Ability to acquire knowledge on AC to AC converters
- Ability to acquire knowledge on simulation software.

EE8681 MICROPROCESSORS AND MICROCONTROLLERS LABORATORY

OUTCOMES:

- Ability to understand and apply computing platform and software for engineering problems.
- Ability to programming logics for code conversion.
- Ability to acquire knowledge on A/D and D/A.
- Ability to understand basics of serial communication.
- Ability to understand and impart knowledge in DC and AC motor interfacing.
- Ability to understand basics of software simulators.

EE8611 MINI PROJECT

OUTCOMES:

- On Completion of the mini project work students will be in a position to take up their final year project work and find solution by formulating proper methodology.

SEMESTER VII

EE8701 HIGH VOLTAGE ENGINEERING

OUTCOMES:

- Ability to understand Transients in power system.
- Ability to understand Generation and measurement of high voltage.
- Ability to understand High voltage testing.
- Ability to understand various types of over voltages in power system.
- Ability to measure over voltages.
- Ability to test power apparatus and insulation coordination

EE8702 POWER SYSTEM OPERATION AND CONTROL

OUTCOMES:

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

EE8703 RENEWABLE ENERGY SYSTEMS

OUTCOMES:

- Ability to create awareness about Renewability Energy Sources and technologies.
- Ability to get adequate inputs on a variety of issues in harnessing Renewability Energy.
- Ability to recognize current and possible future role of renewability energy sources.
- Ability to explain the various renewability energy resources and technologies and their applications.
- Ability to understand basics about biomass energy.
- Ability to acquire knowledge about solar energy.

EE8711 POWER SYSTEM SIMULATION LABORATORY

OUTCOMES:

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

EE8712 RENEWABLE ENERGY SYSTEMS LABORATORY

OUTCOMES:

- Ability to understand and analyze renewability energy systems.
- Ability to train the students in Renewability Energy Sources and technologies.
- Ability to provide adequate inputs on a variety of issues in harnessing Renewability Energy.
- Ability to simulate the various renewability energy sources.
- Ability to recognize current and possible future role of renewability energy sources.
- Ability to understand basics of Intelligent Controllers.

SEMESTER VIII

EE8811 PROJECT WORK

OUTCOMES:

- 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

PROFESSIONAL ELECTIVE - I

IC8651 ADVANCED CONTROL SYSTEM

OUTCOMES:

- Able to design state feedback controller and state observer.
- Able to understand and analyze linear and nonlinear systems using phase plane method.
- Able to understand and analyze nonlinear systems using describing function method.
- Able to understand and design optimal controller.
- Able to understand optimal estimator including Kalman Filter.
- Ability to apply advanced control strategies to practical engineering problems.

EE8001 VISUAL LANGUAGES AND APPLICATIONS

OUTCOMES:

- Ability to understand and apply computing platform and software for engineering problems
- Ability to study about the concepts of windows programming models.
- Ability to study the concepts of Menu basics, menu magic and classic controls.
- Ability to study the concept of Document/View Architecture with single & multiple document interface.
- Ability to study about the integrated development programming event driven programming.
- Ability to understand the database and the database management system.

EE8002 DESIGN OF ELECTRICAL APPARATUS

OUTCOMES:

- Ability to understand basics of design considerations for rotating and static electrical machines
- Ability to design of field system for its application.
- Ability to design single and three phase transformer.
- Ability to design armature and field of DC machines.
- Ability to design stator and rotor of induction motor.
- Ability to design and analyze synchronous machines.

EE8003 POWER SYSTEM STABILITY

OUTCOMES:

- Learners will attain knowledge about the stability of power system
- Learners will have knowledge on small-signal stability, transient stability and voltage stability.
- Learners will be able to understand the dynamic behavior of synchronous generator for different disturbances.
- Learners will be able to understand the various methods to enhance the stability of a power system.

EE8004 MODERN POWER CONVERTERS

OUTCOMES:

- Ability to suggest converters for AC-DC conversion and SMPS

GE8075 INTELLECTUAL PROPERTY RIGHTS

OUTCOME:

- Ability to manage Intellectual Property portfolio to enhance the value of the firm.

PROFESSIONAL ELECTIVE - II

RO8591 PRINCIPLES OF ROBOTICS

OUTCOMES:

- Ability to understand basic concept of robotics.
- To analyze Instrumentation systems and their applications to various
- To know about the differential motion add statics in robotics
- To know about the various path planning techniques.
- To know about the dynamics and control in robotics industries.

EE8005 SPECIAL ELECTRICAL MACHINES

OUTCOMES:

- Ability to analyze and design controllers for special Electrical Machines.
- Ability to acquire the knowledge on construction and operation of stepper motor.
- Ability to acquire the knowledge on construction and operation of stepper switched reluctance motors.
- Ability to construction, principle of operation, switched reluctance motors.
- Ability to acquire the knowledge on construction and operation of permanent magnet brushless D.C. motors.
- Ability to acquire the knowledge on construction and operation of permanent magnet synchronous motors.
- Ability to select a special Machine for a particular application.

E8006 POWER QUALITY

OUTCOMES:

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

EE8007 EHVAC TRANSMISSION

OUTCOMES:

- Ability to understand the principles and types of EHVAC system.
- Ability to analyze the electrostatic field of AC lines
- Ability to study about the compensation.
- Ability to study about the corona in E.H.V. lines
- Ability to understand the EHV ability's.
- Ability to analyze the steady state and transient limits.

EC8395 COMMUNICATION ENGINEERING

OUTCOMES:

At the end of the course, the student will be able to:

- Ability to comprehend and appreciate the significance and role of this course in the present contemporary world
- Apply analog and digital communication techniques.
- Use data and pulse communication techniques.
- Analyze Source and Error control coding.

PROFESSIONAL ELECTIVE - III

GE8071 DISASTER MANAGEMENT

OUTCOMES:

The students will be able to

- Differentiate the types of disasters, causes and their impact on environment and society
- Assess vulnerability and various methods of risk reduction measures as well as mitigation.
- Draw the hazard and vulnerability profile of India, Scenarios in the Indian context, Disaster damage assessment and management.

GE8074 HUMAN RIGHTS

OUTCOME :

- Engineering students will acquire the basic knowledge of human rights.

MG8491 OPERATIONS RESEARCH

OUTCOMES:

- Upon completion of this course, the students can have the ability to use the optimization techniques for use engineering and Business problems.

MA8391 PROBABILITY AND STATISTICS

OUTCOMES :

Upon successful completion of the course, students will be able to:

- Understand the fundamental knowledge of the concepts of probability and have knowledge of standard distributions which can describe real life phenomenon.
- Understand the basic concepts of one and two dimensional random variables and apply in engineering applications.
- Apply the concept of testing of hypothesis for small and large samples in real life problems.
- Apply the basic concepts of classifications of design of experiments in the field of agriculture and statistical quality control.
- Have the notion of sampling distributions and statistical techniques used in engineering and management problems.

EI8075 FIBRE OPTICS AND LASER INSTRUMENTS

COURSE OUTCOMES (COs):

- Understand the principle, transmission, dispersion and attenuation characteristics of optical fibers
- Apply the gained knowledge on optical fibers for its use as communication medium and as sensor as well which have important applications in production, manufacturing industrial and biomedical applications.
- Understand laser theory and laser generation system.
- Students will gain ability to apply laser theory for the selection of lasers for a specific Industrial and medical application.

PROFESSIONAL ELECTIVE - IV

EE8008 SYSTEM IDENTIFICATION AND ADAPTIVE CONTROL

OUTCOMES:

- Ability to understand various system identification techniques and features of adaptive control like STR and MRAC.
- Ability to understand the concept of system identification and adaptive control
- Ability to understand about Black-box approach based system identification
- Ability to get knowledge about batch and recursive identification
- Ability to study about computer controlled systems
- Ability to design concept for adaptive control schemes

CS8491 COMPUTER ARCHITECTURE

OUTCOMES:

On Completion of the course, the students should be able to:

- Understand the basics structure of computers, operations and instructions.
- Design arithmetic and logic unit.
- Understand pipelined execution and design control unit.
- Understand parallel processing architectures.
- Understand the various memory systems and I/O communication.

EE8009 CONTROL OF ELECTRICAL DRIVES

OUTCOMES:

- Ability to understand various control strategies and controllers for AC and DC Motor Drive systems.

EC8095 VLSI DESIGN

OUTCOMES:

UPON COMPLETION OF THE COURSE, STUDENTS SHOULD ABILITY TO

- Realize the concepts of digital building blocks using MOS transistor.
- Design combinational MOS circuits and power strategies.
- Design and construct Sequential Circuits and Timing systems.
- Design arithmetic building blocks and memory subsystems.
- Apply and implement FPGA design flow and testing.

EE8010 POWER SYSTEMS TRANSIENTS

OUTCOMES:

- Ability to understand and analyze switching and lightning transients.
- Ability to acquire knowledge on generation of switching transients and their control.
- Ability to analyze the mechanism of lighting strokes.
- Ability to understand the importance of propagation, reflection and refraction of travelling waves.
- Ability to find the voltage transients caused by faults.
- Ability to understand the concept of circuit breaker action, load rejection on integrated power system.

GE8077 TOTAL QUALITY MANAGEMENT

OUTCOME:

- The student would be able to apply the tools and techniques of quality management to manufacturing and services processes.

PROFESSIONAL ELECTIVE - V

EE8011 FLEXIBLE AC TRANSMISSION SYSTEMS

OUTCOMES:

- Ability to understand, analyze and develop analytical model of FACTS controller for power system application.
- Ability to understand the concepts about load compensation techniques.
- Ability to acquire knowledge on facts devices.
- Ability to understand the start-of-art of the power system
- Ability to analyze the performance of steady state and transients of facts controllers.
- Ability to study about advanced FACTS controllers.

EE8012 SOFT COMPUTING TECHNIQUES

OUTCOMES:

- Ability to understand the concepts of ANN, different features of fuzzy logic and their modeling, control aspects and different hybrid control schemes.
- Ability to understand the basics of artificial neural network.
- Ability to get knowledge on modeling and control of neural.
- Ability to get knowledge on modeling and control of fuzzy control schemes.
- Ability to acquire knowledge on hybrid control schemes.
- Ability to understand the concepts of Adaptive Resonance Theory

EE8013 POWER SYSTEMS DYNAMICS

OUTCOMES:

- Ability to understand and analyze power system operation, stability, control and protection.
- Ability to get knowledge on the basics of dynamics and stability problems
- Ability to design and modeling of synchronous machines
- Ability to study about excitation system and speed-governing controllers.
- Ability to understand the concept of small signal stability of a single-machine infinite bus system with excitation system.
- Ability to analyze the transient stability simulation.

EE8014 SMPS AND UPS

OUTCOMES:

- Ability to analyze the state space model for DC – DC converters
- Ability to acquire knowledge on switched mode power converters.
- Ability to understand the importance of Resonant Converters.
- Ability to analyze the PWM techniques for DC-AC converters
- Ability to acquire knowledge on modern power electronic converters and its applications in electric power utility.
- Ability to acquire knowledge on filters and UPS

EE8015 ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION

OUTCOMES:

- To understand the main aspects of generation, utilization and conservation.
- To identify an appropriate method of heating for any particular industrial application.
- To evaluate domestic wiring connection and debug any faults occurred.
- To construct an electric connection for any domestic appliance like refrigerator as well as to design a battery charging circuit for a specific household application.
- To realize the appropriate type of electric supply system as well as to evaluate the performance of a traction unit.
- To understand the main aspects of Traction.

GE8076 PROFESSIONAL ETHICS IN ENGINEERING

OUTCOMES:

- Upon completion of the course, the student should be able to apply ethics in society, discuss the ethical issues related to engineering and realize the responsibilities and rights in the society.

MG8591 PRINCIPLES OF MANAGEMENT

OUTCOMES:

- Upon completion of the course, students will be able to have clear understanding of managerial functions like planning, organizing, staffing, leading & controlling and have same basic knowledge on international aspect of management

PROFESSIONAL ELECTIVE - VI

EE8016 ENERGY MANAGEMENT AND AUDITING

OUTCOMES:

- Ability to understand the basics of Energy audit process.
- Ability to understand the basics of energy management by cogeneration
- Ability to acquire knowledge on Energy management in lighting systems
- Ability to impact concepts behind economic analysis and Load management.
- Ability to understand the importance of Energy management on various electrical equipment and metering.
- Ability to acquire knowledge on HVAC.

CS8391 DATA STRUCTURES

OUTCOMES:

At the end of the course, the student should be able to:

- Implement abstract data types for linear data structures.
- Apply the different linear and non-linear data structures to problem solutions.
- Critically analyze the various sorting algorithms.

EE8017 HIGH VOLTAGE DIRECT CURRENT TRANSMISSION

OUTCOMES:

- Ability to understand the principles and types of HVDC system.
- Ability to analyze and understand the concepts of HVDC converters.
- Ability to acquire knowledge on DC link control.
- Ability to understand the concepts of reactive power management, harmonics and power flow analysis.
- Ability to get knowledge about Planning of DC power transmission and comparison with AC power transmission.
- Ability to understand the importance of power flow in HVDC system under steady state.

EE8018 MICROCONTROLLER BASED SYSTEM DESIGN

OUTCOMES:

- Ability to understand and apply computing platform and software for engineering problems.
- Ability to understand the concepts of Architecture of PIC microcontroller
- Ability to acquire knowledge on Interrupts and timers.
- Ability to understand the importance of Peripheral devices for data communication.
- Ability to understand the basics of sensor interfacing
- Ability to acquire knowledge in Architecture of ARM processors

EE8019 SMART GRID

OUTCOMES:

- Learners will develop more understanding on the concepts of Smart Grid and its present developments.
- Learners will study about different Smart Grid technologies.
- Learners will acquire knowledge about different smart meters and advanced metering infrastructure.
- Learners will have knowledge on power quality management in Smart Grids
- Learners will develop more understanding on LAN, WAN and Cloud Computing for Smart Grid applications.

EI8073 BIOMEDICAL INSTRUMENTATION

OUTCOMES: At the end of the course students will have the

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

GE8073 FUNDAMENTALS OF NANOSCIENCE

OUTCOMES:

- Will familiarize about the science of nanomaterials
- Will demonstrate the preparation of nanomaterials
- Will develop knowledge in characteristic nanomaterial

OPEN ELECTIVE I

OCY551 ADVANCED ENGINEERING CHEMISTRY

OUTCOMES

- The knowledge gained on polymer chemistry, thermodynamics. spectroscopy, phase rule and nano materials will provide a strong platform to understand the concepts on these subjects for further learning.

OCE551 AIR POLLUTION AND CONTROL ENGINEERING

OUTCOMES:

- The students completing the course will have an understanding of the nature and characteristics of air pollutants, noise pollution and basic concepts of air quality management
- Ability to identify, formulate and solve air and noise pollution problems
- Ability to design stacks and particulate air pollution control devices to meet applicable standards.
- Ability to select control equipments.
- Ability to ensure quality, control and preventive measures.

OAT551 AUTOMOTIVE SYSTEMS

OUTCOMES:

- Upon completion of this course, the students will be able to identify the different components in automobile engineering.
- Have clear understanding on different auxiliary and transmission systems usual.

OIT551 DATABASE MANAGEMENT SYSTEMS

OUTCOMES:

Upon completion of the course, the students will be able to:

- understand relational data model, evolve conceptual model of a given problem, its mapping to
- relational model and Normalization
- query the relational database and write programs with database connectivity
- understand the concepts of database security and information retrieval systems

OIT552 CLOUD COMPUTING

OUTCOMES:

On Completion of the course, the students should be able to:

- Articulate the main concepts, key technologies, strengths and limitations of cloud computing.
- Learn the key and enabling technologies that help in the development of cloud.
- Develop the ability to understand and use the architecture of compute and storage cloud, service and delivery models.
- Explain the core issues of cloud computing such as resource management and security.
- Be able to install and use current cloud technologies.
- Choose the appropriate technologies, algorithms and approaches for implementation and use of cloud.

OMF551 PRODUCT DESIGN AND DEVELOPMENT

OUTCOME:

- The student will be able to design some products for the given set of applications; also the knowledge gained through prototyping technology will help the student to make a prototype of a problem and hence product design and development can be achieved.

OAN551 SENSORS AND TRANSDUCERS

OUTCOMES:

The students will be able to

- CO1. Expertise in various calibration techniques and signal types for sensors.
- CO2. Apply the various sensors in the Automotive and Mechatronics applications
- CO3. Study the basic principles of various smart sensors.
- CO4. Implement the DAQ systems with different sensors for real time applications

OME552 VIBRATION AND NOISE CONTROL

OUTCOMES:

- Understand the basic of noise and vibrations.
- Understanding causes, source and types of vibrations in machineries
- Gaining knowledge in sources and measurement standard of noise
- Ability to design and develop vibrations and noise control systems.
- Ability to know techniques in controlling the noise and vibrations.

OMD551 BASICS OF BIOMEDICAL INSTRUMENTATION

OUTCOMES:

At the end of the course, the student should be able to:

- CO1: To Learn the different bio potential and its propagation.
- CO2: To get Familiarize the different electrode placement for various physiological recording
- CO3: Students will be able design bio amplifier for various physiological recording
- CO4: Students will understand various technique non electrical physiological measurements
- CO5: Understand the different biochemical measurements

OPEN ELECTIVE II

OME751 DESIGN OF EXPERIMENTS

OUTCOME:

- Able to apply experimental techniques to practical problems to improve quality of processes / products by optimizing the process / product parameters.

OCS752 INTRODUCTION TO C PROGRAMMING

OUTCOMES

Upon completion of this course, the students will be able to

- Develop simple applications using basic constructs
- Develop applications using arrays and strings
- Develop applications using functions and structures

OCH751 PROCESS MODELING AND SIMULATION

OUTCOME:

- Upon completing the course, the student should have understood the development of process models based on conservation principles and process data and computational techniques to solve the process models.

OEC753 SIGNALS AND SYSTEMS

OUTCOMES:

At the end of the course, the student should be able to:

- To be able to determine if a given system is linear/causal/stable
- Capable of determining the frequency components present in a deterministic signal
- Capable of characterizing LTI systems in the time domain and frequency domain
- To be able to compute the output of an LTI system in the time and frequency domains

OML751 TESTING OF MATERIALS

OUTCOMES:

- Identify suitable testing technique to inspect industrial component
- Ability to use the different technique and know its applications and limitations