Course Code and Name	Course Outcomes (COs)
UEE001 / Electrical Engineering	To learn about applications of networks laws and theorems to solve electric circuits
	To represent AC quantities through phasor and compute AC system behaviour during steady state
	To learn about principle, construction, characteristics and application of Electro-Mechanical energy conversion devices.
UEE301 / Direct Current Machines and Transformers	To test the transformer and calculate its efficiency and performance in distribution system.
	To scrutinize three-phase transformer connections and use special purpose transformer for measurement and protection
	To select appropriate DC motor for specific purpose and compute their steady performance
	To select appropriate DC motor for specific purpose and compute their steady performance
	To compute the performance with DC generators and supply increasing load with parallel operation
	To select the speed control and starting method of DC motor
UEE505 / Analog and Digital Systems	To design different type of circuits such as rectifiers, clippers, clampers, filters etc.
	To design power supplies and solve problems related to amplifiers and oscillators.
	To design combinational and sequential circuits.
	To differentiate various type of memories and their use in different applications.
	To demonstrate the concept of logic circuits and converters.
	To compute the performance with DC generators and supply increasing load with parallel operation
	To select the speed control and starting method of DC motor
UEE405 / Network Theory and Design	To apply various laws and theorems to solve electric networks.
	To explain the concept of two port networks.
	To familiarize with network synthesis.
	To learn theory and designing of passive filters and Attenuators

Course	Outcome
	To design active filters
UEE401 / Alternating Current Machines	To analyze the steady-state performance of induction and synchronous machines and compute performance measures.
	To validate and identify the machine parameters
	To select the appropriate AC motor for different large power application.
	To analyse the stability of single machine – infinite bus system and form the grid to supply large load.
	To choose the appropriate fractional horse power motor as per the usage in daily life.
UEE403 / Measurement and Transducers	To use various types of instruments for measurement of variables.
	To select and use various types of sensors in different conditions.
	To select and use various types of bridge circuits with different sensors.
UEE404 / Transmission and Distribution of Power	To analyse the transmission line models and evaluate its performance parameters.
	To design the transmission lines under various working conditions.
	To describe and select the configurations of different line insulators and evaluate their performance.
	To supervise the laying of cables and fault detection in cables.
	To design the distribution system network.
UEE507 / Engineering Electromagnetics	To appraise need analysis for different coordinate systems in electromagnetics and their interrelations.
	To apply vector calculus to solve field theory problems.
	To calculate electric and magnetic fields in different coordinates for various charge and current configurations.
	To exhibit the concept of time varying fields.
	To demonstrate different aspects of plane wave in dielectric and conducting media.
	To realize the analogy of wave with transmission line and determine the transmission line performance
UEE504 / Power Electronics	To select the power devices as per the usage for energy conversion and control.

	To exhibit the designing of firing and commutation circuits for different converter configurations.
	To demonstrate capability to analyse various converter configuration / topology.
	To identify converter configurations for various power applications.
	To exhibit the usage of power converters for harmonic mitigation, voltage and frequency control.
UEI404 / Digital Signal Processing Fundamentals	To explain the digital signal processing concepts and stability analysis of digital system.
	To demonstrate the hardware architecture of DSP Processor.
	To design digital filter and harmonic mitigation.
	To carryout spectrum analysis using DFT.
	To apply DSP concepts for power system purposes such as relaying, protection and metering
UEI609 / Fundamentals of Microprocessors and Microcontrollers	To demonstrate the concept of microprocessor and to be able to design a microprocessor based system to get desired results.
	To use 8086 microprocessor in advanced applications, which will give them a good platform to work further.
	To stay updated with current trends through self-study and show genuine need to learn on continuous basis.
	To use hardware interfacing of 8051 to develop solutions of real world electrical problems
UEI501 / Control Systems	To develop the mathematical model of the physical systems.
	To analyze the response of the closed and open loop systems.
	To analyze the stability of the closed and open loop systems.
	To design the various kinds of compensator.
	To develop and analyze state space models.
UEE605 / Power System Analysis and Stability	To develop an appropriate mathematical model of power system.
	To carry out power flow analysis of practical power system for balanced system.
	To conduct studies during unbalanced faults to decide the fault levels and circuit breaker ratings.
	To analyze the stability of single machine-infinite bus system and can decide the critical clearing time of circuit breakers.

UEE603 / Switchgear and Protection	To select the protection elements such as fuse, circuit breakers, relays etc. for a given configuration
	To explain the earthing requirement for residential and other purposes.
	To select required protection measures against overcurrent, overvoltage in transmission lines
	To select suitable protection scheme for different power system equipment
UEE801 / Electric Drives	To conceptualize the basic drive system and analyse it for different types of loads
	To analyse the motor situation during starting and braking
	To develop control circuitry and devices for control of motor
	To estimate the motor rating for different condition of load
	To design the converter circuit for control purpose along with its different configuration
	To use PLC and converter control to drive on the basis of energy efficiency
UEE693 / Semester VI (starts)	To identify design goals and analyze possible approaches to meet given specifications with realistic engineering constraints.
	To design an electrical engineering project implementing an integrated design approach applying knowledge accrued in various professional courses.
	To perform simulations and incorporate appropriate adaptations using iterative synthesis.
	To use modern engineering hardware and software tools.
	To work amicably as a member of an engineering design team.
	To improve technical documentation and presentation skills.
UEE502 / High Voltage Engineering	To conceptualize the idea of high voltage and safety measures involved.
	To analyse the breakdown mechanism of solids, liquids and gases.
	To design insulation associated with various power system components such as transformer, rotating machines and switchgear

	To analyse and calculate the circuit parameters involved in generation of high voltages
	To measure direct, alternating and impulse high voltage signals.
	To measure the dielectric loss and partial discharge involved in non-destructive high voltage tests.
UEE604 / Flexible AC Transmission Systems	To describe the converter configuration for different power systems applications such as HVDC, FACTS etc.
	To evaluate the converters, harmonics on AC and DC side and filtering.
	To classify various compensators suited for various power system purposes.
	To analyze power system behaviour with different shunt compensators.
	To appraise series compensated power system behaviour with different series compensators.
	To analyse system behaviour with hybrid shunt-series compensators.
UEE702 / Intelligent Techniques in Electrical Engineering	To examine the fuzzy system and implement fuzzy controllers for control and classification.
	To explain neural networks behaviour and use them for classification, control system and optimization problem.
	To obtain the optimum solution of well formulated optimization problem using evolutionary approach.
	To formulate hybrid intelligent algorithms for typical electrical application.
UEE804 / Operation and Control of Power Systems	To decide the scheduling of thermal units and hydro-thermal units for overall economy
	To develop small scale model of alternator, excitation and governing systems.
	To design and apply control for frequency and voltage of power system represented by single or multi-area.
	To comprehend power system security and contingency

	To learn computation of small scale and voltage stability
UEE793 / Semester VII (Completion)	To identify design goals and analyze possible approaches to meet given specifications with realistic engineering constraints.
	To design an electrical engineering project implementing an integrated design approach applying knowledge accrued in various professional courses.
	To perform simulations and incorporate appropriate adaptations using iterative synthesis.
	To use modern engineering hardware and software tools.
	To work amicably as a member of an engineering design team.
	To improve technical documentation and presentation skills.
UEE891 / PROJECT	To acquire knowledge and experience of software and hardware practices in the area of project.
	To carry out design calculations and implementations in the area of project.
	To associate with the implementation of the project requiring individual and teamwork skills.
	To communicate their work effectively through writing and presentation.
	To demonstrate the knowledge of professional responsibilities and respect for ethics.
UEE806 / Alternate Sources of Energy	To explain the basic renewable energy sources like solar, wind ,biomass etc
	To explain various advantages and disadvantages of renewable energy sources.
	To familiarize with different standalone, off grid energy sources
	To explain different technology associate with solar, wind, biomass and other renewable energy sources.
	To describe the working of micro/mini hydropower system.
UEI805 / Environmental Instrumentation	To explain sources and effects of air and water pollutants
	To explain air pollution sampling and measurement techniques
	To explain water sampling and analysis techniques
	To explain solid waste management and noise level measurement techniques
	To compare AC and DC transmission systems.

Course	Course Outcomes
UEE631 / HVDC Transmission Systems	To identify the suitable two-level/multilevel configuration for high power converters.
	To select the suitable protection method for various converter faults.
	Identify suitable reactive power compensation method.
	Decide the configuration for harmonic mitigation on both AC and DC sides.
UEE632 / Power Generation and Economics	To explain knowledge of India's power scenario, power system structure, and related agencies.
	To harness power from conventional and renewable sources.
	To select the methods and size of plant generating power for overall economy.
	To decide the tariff structure for different type of users.
UEE633 / Generalized Theory of Electrical Machines	To express the revolving field and reference frame theory
	To develop mathematical model of three-phase AC machines and parameters in different reference frame
	To simulate the transient performance of three-phase ac machines in different reference frames.
	To investigate the transient performance of different DC machines.
	To select special purpose small machines for different applications
UEE524 / Power Quality Monitoring and Conditioning	To reliably identify the sources of various power quality problems.
	To estimate the impact of various power quality problems on appliances.
	To educate the harmful effects of poor power quality and harmonics.
	To decide the compensators and filters to keep the power quality indices within the standards.
	To analyse the semiconductor controlled ac and DC drive system

UEE841 / Industrial Electronics	To design an illumination system for domestic, industry and commercial sites.
	To design an electric heating system for industrial purposes.
	To design and develop a regulated power supply.
	To analyze and simulate and analyse the series and shunt compensators for power factor improvement in drive system.
UEE521 / Electric Machine Design	To demonstrate winding, core, and cooling requirement from design view point
	To carry out requirement and design calculation for transformer
	To calculate the losses and efficiency in the machines
UEE850 / Smart Grid	To explain various aspects of the smart grid, including, Technologies, Components, Architectures and Applications.
	To explain communication infrastructure of smart grid.
	To explain various integration aspects of conventional and non-conventional energy sources.
	To explain distributed generation coordination including monitoring of smart grid using modern communication infrastructure.
	To analyze Microgrid as a hybrid power system with advantages and challenges in future.
UEI841 / Advanced Control Systems	To demonstrate non-linear system behavior by phase plane and describing function methods.
	To perform the stability analysis nonlinear systems by lyapunov method develop design skills in optimal control problems.
	To derive discrete-time mathematical models in both time domain (difference equations, state equations) and z-domain (transfer function using z-transform).
	To predict and analyze transient and steady-state responses and stability and sensitivity of both open-loop and closed-loop linear, time-invariant, discrete-time control systems.
	To acquire knowledge of state space and state feedback in modern control systems, pole placement, design of state observers and output feedback controllers.