

**BHARATHIYAR INSTITUTE OF ENGINEERING FOR WOMEN**

Deviyakurichi ,Thalaivasal, Attur-TK, Salem - 636112.

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25)

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING****REG-2017****SECOND YEAR**

<b>SUBJECT</b>	<b>CO</b>	<b>Course Outcomes</b>
C201/ MA8353& TRANSFORMS PARTIAL AND DIFFERENTIAL EQUATIONS	C201.1	The fundamental concepts of PDE and various solution procedures for solving first nonlinear PDE.
	C201.2	Analytical methods for solving higher order PDE.
	C201.3	Understand the Dirichlet's conditions, basic concepts in FS, analyze their properties such as Parseval's identity and its problems.
	C201.4	The application of FS for solving the initial BVP in 1-D wave and heat equations and BVPs in elliptic equations.
	C201.5	Understand, Apply, evaluate and analyze the concepts of FT and mathematical concepts which are applied in various fields of Engineering.
	C201.6	The mathematical techniques of Z-transforms applied in various topics in Engg. Discipline.
C202/ EE8351&DIGITAL LOGIC CIRCUITS	C202.1	Explain the various number systems and compare the characteristics and operation of digital logic families. Describe the various types of number system, binary codes and examine the digital logic families.
	C202.2	Use K-map for simplification and implementation of combinational logic circuit.
	C202.3	Design various synchronous sequential circuit.
	C202.4	Design various asynchronous sequential circuit.
	C202.5	Analyze the programmability logic devices.
	C202.6	Discuss digital simulation for development of application oriented logic circuits.
	C203.1	Explain the basic mathematical concepts related to electromagnetic vector fields
	C203.2	Understand and apply the basic laws related to electrostatics

C203/EE8391 & ELECTROMAGNETIC THEORY	C203.3	Understand the concepts of electrostatics, electrical potential, energy density and their applications.
	C203.4	Understand the concepts of magnetostatics, magnetic flux density, scalar and vector potential and its applications.
	C203.5	Understand the concepts of Faraday's law, induced emf and Maxwell's equations
	C203.6	Understand and illustrate the concepts of electromagnetic waves and Poynting vector.
C204/ EE8301 ELECTRICAL MACHINES-I	C204.1	Explain the basic concept of magnetic materials and circuits used in electric machines.
	C204.2	Explain the construction, working principle of single and three phase transformers and analyze their performance for different loading conditions.
	C204.3	Examine the diversified parameters of single phase transformer through various testing methods.
	C204.4	Illustrate the concepts of electromechanical energy conversion principles and formulate the expressions for voltage and torque in all rotating machines.
	C204.5	Explain the construction, working principle, types, characteristics and applications of DC generators.
	C204.6	Explain the working principle, speed control methods of DC motor and estimate the performance of DC motors through various testing methodologies.
C205/ EC8353 ELECTRON DEVICES AND CIRCUITS	C205.1	Explain the operation and characteristics of PN junction diode, operation of Rectifiers with its classifications and also operations of Display devices.
	C205.2	Draw and explain the Structure, operation and characteristics of BJT, JFET, MOSFET, UJT, Thyristor and also IGBT.
	C205.3	Differentiate the CE, CB, CC amplifiers.
	C205.4	Discuss about the Multistage and Differential amplifiers.
	C205.5	Describe about the Negative and Positive feedback.
	C205.6	Explain about the oscillators and its types.
C206/ ME8792 & POWER PLANT	C206.1	Explain the layout, construction and working of the components inside a thermal power plant.

ENGINEERING	C206.2	Explain the layout, construction and working of the components inside a Diesel, Gas and Combined cycle power plants.
	C206.3	Explain the layout, construction and working of the components inside nuclear power plants.
	C206.4	Explain the layout, construction and working of the components inside Renewable energy power plants.
	C206.5	Explain the applications of power plants while extend their knowledge to power plant economics.
	C206.6	environmental hazards and estimate the costs of electrical energy production.
C207&EC8311 ELECTRONICS LABORATORY	C207.1	Understand the Characteristics of Semiconductor diode, BJT configuration through experimentation
	C207.2	Understand the behavior of JFET and UJT through experimentation
	C207.3	Study and understand behavior of photo diode and photo transistor through experimentation
	C207.4	Apply diode for rectification purpose in half wave and full wave operation
	C207.5	Study the working operation of oscillators RC phase shift and LC filters through experimentation
	C207.6	Apply and study the operation of FET as differential operation through experimentation
C208& EE8311 ELECTRICAL MACHINES-I LABORATORY	C208.1	Ability to choose the rating of the protective device and measuring instruments required for a given experiment/machine
	C208.2	Analyse different types of DC generators and Experimentally obtain the different characteristics of various dc generators.
	C208.3	Experimentally obtain the different characteristics of dc motors and ability to conduct different types of speed control, testing in DC motors.
	C208.4	Understand the concept of efficiency and the short circuit impedance of a three-phase transformer from no-load test, winding resistance, short circuit test, and load test.
	C208.5	Understand the concept of various losses in transformer and Analyse different types of losses by conducting suitable test.
	C208.6	Understand the starting methods of dc motors and Understand the effect of unbalanced loading on a three-phase transformer with different connections, and the effects and

		limitations of each connection
C209&MA8491 NUMERICAL METHODS	C209.1	Solve algebraic and transcendental equations by various methods. Simultaneous linear equations using direct and indirect methods. Compute eigen values of a matrix by power method and by Jacobi method of symmetric matrix.
	C209.2	Interpret the data using interpolation using various methods, cubic spline approximation and difference operators and relations.
	C209.3	Compute the numerical differentiation using various methods and integration using trapezoidal and simpson's rules to solve single and double integration.
	C209.4	Solving first order and second order differential equations using various types of single step.
	C209.5	Solving first order and second order differential equations using various types of multi step methods.
	C209.6	Applying finite difference methods for solving two point linear boundary value problems. Solving one dimensional heat flow equation and wave equation by explicit and implicit methods solve two dimensional heat equation.
C210& EE8351 ELECTRICAL MACHINES-II	C210.1	Draw the constructional details and explain the performance of salient and non salient type synchronous generators.
	C210.2	Draw and explain the principle of operation and performance of synchronous motor.
	C210.3	Draw and describe the construction, principle of operation and performance of induction machines.
	C210.4	Describe the starting and speed control of three-phase induction motors.
	C210.5	Explain the construction, principle of operation and performance of single phase induction motors.
	C210.6	Explain the construction, principle of operation and performance of special machines
C211& EE8391 TRANSMISSION AND DISTRIBUTION	C211.1	Analyse the inductance and capacitance for different conductor configurations
	C211.2	Compute the efficiency, regulation and ABCD parameters of different transmission lines
	C211.3	Analyse the different environmental effects on sag in transmission lines

	C211.4	Construct electrical equivalent representation of insulators, calculate the potential distribution and explain the methods of improving the string efficiency
	C211.5	Analyse the dielectric stress of graded and ungraded underground cables
	C211.6	Compute the distributor voltage drops for different distribution system and loads, Explain the structure and components of power system and method of improving the reliability of AC transmission
C212/EE8403 MEASUREMENTS AND INSTRUMENTATION	C212.1	Define units and standards, their conversions and describe the characteristics, error analysis and basic functional elements of measurement systems.
	C212.2	Describe the working of various electrical and electronic meters
	C212.3	Select the suitable instrument for measuring different magnetic parameters
	C212.4	Design a suitable Bridge circuit to determine the values of various resistor, inductor and capacitor
	C212.5	Explain the construction and working principle of various types of storage and display devices and compare them
	C212.6	Describe resistive, inductive and capacitive transducers which are used for measuring various parameters like displacement, temperature and explain the function of different blocks involved in data acquisition systems
C213&EC8353 LINEAR INTEGRATED CIRCUITS AND APPLICATIONS	C213.1	Explain the fundamentals, Classification, procedures for the realization of monolithic ICs and discuss the fabrication of diodes, capacitance, resistance, FETs.
	C213.2	Describe the characteristics of operational amplifier and explain the basic applications of op-amps.
	C213.3	Explain the concepts of amplifiers, filters, comparators, multivibrators, waveform generators, peak detectors, s/H circuit, A/D and D/A converters using op-amp.
	C213.4	Describe the internal functional blocks, characteristics and applications of timer, voltage controlled oscillator, phase lock loop and analog multiplier ICs.
	C213.5	Discuss the internal functional blocks, working principle and applications of voltage regulators and SMPS.
	C213.6	Describe the internal functional blocks, Characteristics and application of power amplifier and function generator IC.
	C214.1	Derive the transfer function of electrical and mechanical systems using various reduction techniques.

C214/IC8451& CONTROL SYSTEMS	C214.2	Analyse the response of the control system by investigating steady state error and time domain specifications.
	C214.3	Construct the root locus to find the stability of the system and explain the effects of different types of controller.
	C214.4	Construct the frequency response of the system using various plots and correlate the time domain specifications and the effect of compensation.
	C214.5	Design the different types of compensators using frequency response plots to stabilize the control system.
	C214.6	Explain the state variable representation of physical systems with the effects of state feedback.
C215&EC8311 ELECTRICAL MACHINES-II LABORATORY	C215.1	Compare the different indirect testing methods to predetermine the voltage regulation of three phase salient and non-salient pole alternator.
	C215.2	Determine the positive, negative and zero sequence impedance of alternators.
	C215.3	Analyze the operation of synchronous motor on infinite bus for different excitation condition.
	C215.4	Assess the performance of three phase induction motor by conducting direct and indirect testing.
	C215.5	Assess the performance of single phase induction motor by conducting direct and indirect testing.
	C215.6	Choose the appropriate induction motor starter for various industrial and commercial applications.
C216&EE8311 LINEAR AND DIGITAL INTEGRATED CIRCUITS LABORATORY	C216.1	Apply Boolean functions to implement adder, subtractor circuits and convert Excess 3 to BCD, Binary to Gray code and vice versa
	C216.2	Design parity generator, parity checker, encoder and decoder circuits
	C216.3	Design and implement 4-bit modulo synchronous, Asynchronous counters and implement 4-bit shift registers in SISO, SIPO, PISO, PIPO modes
	C216.4	Explain multiplexer, demultiplexer circuits and demonstrate 555 timer in Monostable and Astable operation
	C216.5	Design and demonstrate inverting amplifier, non-inverting amplifier, adder, comparator, integrator and differentiator circuits using Op-Amp
	C216.6	Explain voltage to frequency characteristics of NE/ SE 566 IC and frequency multiplication using NE/SE 565 PLL IC



SUBJECT	CO	Course Outcomes
C301/ EE8501/ Power System Analysis	C301.1	Explain the operation of various power system components. Draw the per unit diagram from the Y bus matrix for the power system.
	C301.2	Develop the power flow equation for power system problem and determine the power flows using various algorithms.
	C301.3	Illustrate the types of faults and their effects. Calculate the fault currents for symmetrical fault condition.
	C301.4	Draw the sequence network for L-G, L-L and L-L-G fault of the power system and determine the fault current in case of L-G, L-L, and L-L-G fault.
	C301.5	Explain the concept of power system stability.
	C301.6	Analyze the stability of single machine infinite bus system
C302/EE8551/ Microprocessors and Microcontrollers	C302.1	Explain about the architecture of 8085 microprocessor, pin configuration, interrupts and the timing diagram of 8085
	C302.2	Develop the assembly language program using mnemonics and corresponding machine code based on architecture of 8085 microprocessor
	C302.3	Define the 8051 microcontroller with its architecture, pin-outs, memory organization, interrupts and compare the programming concepts with 8085
	C302.4	Illustrate the interfacing of 8085 with various peripheral devices for transmission, reception and control of data
	C302.5	Make use of the data conversion technique such as ADC and DAC and to interface with 8085 processor and 8051 microcontroller
	C302.6	Develop the microcontroller assembly language program for various real time applications
C303/EE8552 /Power Electronics	C303.1	Achieve clear understanding by the students on the characteristics of different power electronic switching devices SCR, TRIAC, GTO, BJT, MOSFET, IGBT, and IGCT along with its driver and protection snubber circuits
	C303.2	Understand the operation and characteristics of different phase controlled rectifiers and its performance parameters
	C303.3	Achieve Knowledge on different firing schemes for converter, understanding of working of dual converters and its characteristics and to develop application knowledge on implementing phase controlled converters
	C303.4	Analysis and study of different DC-DC converters, its design, control strategies and its applications in real time.

	C303.5	Acquire knowledge in design and analysis of single and three phase inverters, it control schemes, and its applications in real time
	C303.6	Develop the microcontroller assembly language program for various real time applications
C304/EE8591 /Digital Signal Processing	C304.1	Classify the different types of signals and systems and Explain the sampling process of continuous time signal.
	C304.2	Apply z-transform and inverse Z transform and analyze discrete time systems.
	C304.3	Apply Radix-2 Decimation in Time (DIT) and Decimation in Frequency (DIF) FFT Algorithm to Compute Discrete Fourier Transform.
	C304.4	Explain different types of Infinite Impulse Response (IIR) filters and Finite Impulse Response (FIR) filters
	C304.5	Explain the digital design using impulse invariant and bilinear transformation
	C304.6	Explain various architectures of Digital signal processors.
C305/CS8392 Object Oriented Programming	C305.1	Classify the different types of signals and systems and Explain the sampling process of continuous time signal.
	C305.2	Apply z-transform and inverse Z transform and analyze discrete time systems.
	C305.3	Apply Radix-2 Decimation in Time (DIT) and Decimation in Frequency (DIF) FFT Algorithm to Compute Discrete Fourier Transform.
	C305.4	Explain different types of Infinite Impulse Response (IIR) filters and Finite Impulse Response (FIR) filters
	C305.5	Explain the digital design using impulse invariant and bilinear transformation
	C305.6	Explain various architectures of Digital signal processors.
C306/OAN551/ SENSORS AND TRANSDUCERS	C306.1	Understand the concepts of measurement technology, classification of transducers & Expertise in various calibration techniques and signal types for sensors
	C306.2	Understand the working of various motion, proximity and ranging sensors
	C306.3	Learn the various sensors used to measure various physical parameters like force, magnetic and heading Sensors

	C306.4	Study the basic principles of optical, pressure, temperature sensors & smart sensors
	C306.5	Apply the various sensors in the Automotive and Mechatronics applications
	C306.6	Implement the DAQ systems with different sensors for real time applications
C307/EE8511/ Control and Instrumentation Laboratory	C307.1	Design and simulate the different types of controllers and compensators and analyse the stability of the given system
	C307.2	Examine the stability response of Machines, Sensors and Transducers.
	C307.3	Explain the concept of position control systems, synchro and analyse its characteristics.
	C307.4	Identify the various parameters such as R,L and C using bridge circuits and also measure the power and energy of Electrical circuits.
	C307.5	Illustrate the concept of sensors/transducers and signal conditioning elements.
	C307.6	Design and simulate the characteristics, response and stability of the given system.
C308/HS8581/ Professional Communication	C308.1	To enhance the learners speaking skill through various activities like group discussion, telephonic conversation, presentation skill etc.,
	C308.2	Develop listening and speaking skills through communicative functions
	C308.3	Enhance the Employability and Career Skills of student
	C308.4	Orient the students towards grooming as a professional
	C308.5	Make them Employability Graduates
	C308.6	Develop their confidence and help them attend interviews successfully.
C309/CS8383/ Object Oriented Programming Laboratory	C309.1	Develop and implement Java programs to develop simple applications.
	C309.2	Learn Features of Object oriented programming by developing programs using Classes, Packages and Interfaces.

	C309.3	Design and implement java programs using Exceptions, Generics.
	C309.4	Develop java applications using multi threading.
	C309.5	Design and implement java programs using I/O Streams.
	C309.6	Learn to develop GUI programming and event handling using swing and awt classes.
C310/EE8601/Solid State Drives	C310.1	Illustrate the N-T characteristics of Electric drives and Develop the condition for steady state stability.
	C310.2	Select a drive for a particular application based on power rating.
	C310.3	Understand the different modes of operation of converter / chopper fed dc motor, enabling to solve problems on dc drives.
	C310.4	Familiarize about the different control methods of induction motor drives and solve problems on induction motor drives.
	C310.5	Acquire knowledge on different control methods of synchronous motor.
	C310.6	Develop the design procedure of controllers for DC drives.
C311/EE8602/Protection and Switchgear	C311.1	Summarize the causes and effects of faults in power system and explain the necessity of protection in power system.
	C311.2	Describe the operation of electromagnetic relays and draw their characteristic curves.
	C311.3	List out the various faults that can occur on alternator, motor, transformer, busbar, transmission line and select the suitable protection schemes.
	C311.4	Synthesize the static relays using comparators and explain numerical relays.
	C311.5	Derive the expression for RRRV, critical resistance value.
	C311.6	Explain the construction details, working of various types of circuit breakers.
C312/EE8691/Embedded Systems	C312.1	Analyze the basic build process of embedded systems, structural units in embedded processor and selection of processor and memory devices depending upon the applications

	C312.2	Classify the types of I/O device ports and buses and different interfaces for data transfer
	C312.3	Modelling of the Embedded Product Development Life Cycle (EDLC) by using different techniques like state machine model, sequential program model and concurrent model
	C312.4	Analyze about the basic concept of Real Time Operating Systems and plan to scheduling of different task and compare the features of different types of Real Time Operating Systems
	C312.5	Apply the knowledge of programming concepts of Embedded Systems for various applications like Washing Machine automotive and Smart Card System applications
	C312.6	apply knowledge and concept of digital camera and ATM machine
C313/EE8002/Design of Electrical Apparatus	C313.1	Explain the major considerations in Electrical machine design, the properties of Electrical Engineering material, choice of magnetic and electric loading.
	C313.2	Explain the magnetic circuits, rating of machines and standard specifications in Electrical machine design.
	C313.3	Design the core, yoke, windings and cooling system of Transformer.
	C313.4	Design the armature and field system of DC machine.
	C313.5	Design the stator and rotor of Induction machine.
	C313.6	Design the stator and rotor of synchronous machine and explain the thermal their behaviour.
C314/EE8005/Special Electrical Machines	C314.1	Explain the construction and operating principle of different types of stepper motor, its performance.
	C314.2	Explain the digital control of stepper motor using microprocessor.
	C314.3	Summarize the construction and operating principle of different types of Switched Reluctance Motor, its performance, different methods of rotor position sensing, sensor less operation and closed loop control of Switched Reluctance Motor.
	C314.4	Explain the operating principle and performance of square wave BLDC motor
	C314.5	Express the working principle, performance, characteristics of Permanent Magnet Synchronous Motor.

	C314.6	Explain the construction and operating principle of other special Electrical Machines.
C315/ EE8661/ Power Electronics and Drives Laboratory	C315.1	Design and analysis various triggering circuits for ac-dc converters.
	C315.2	Obtain VI characteristics of power switching devices
	C315.3	Construct a ac-dc converter, dc-dc converter and ac voltage converter
	C315.4	Understand the operation of 3 phase VSI
	C315.5	Simulate power electronic converter in MATLAB
	C315.6	Study the performance of SMPS
C316/EE8681/ Microprocessors and Microcontrollers Laboratory	C316.1	Understand and apply computing platform and software for engineering problems
	C316.2	Programming logics for code conversion
	C316.3	Acquire knowledge on A/D and D/A
	C316.4	Understand basics of serial communication
	C316.5	Understand and impart knowledge in DC and AC motor interfacing
	C316.6	Understand basics of software simulators
C317/ EE8611 / Mini Project	C317.1	Develop the ability to solve a specific problem right from its identification
	C317.2	Plan the project work schedule and prepare budget for experimentation
	C317.3	Identify and design the circuits with necessary components, simulation tools and accessories for the specific problem
	C317.4	Demonstrate the system model and also analyze the parameters in various parts of the system using simulation tools
	C317.5	Explain the project work orally among the team members and also in review presentation
	C317.6	Write the project report and face viva voce examination

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**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING****REG-2017****FINAL YEAR**

<b>SUBJECT</b>	<b>CO</b>	<b>Course Outcomes</b>
C401/ EE8701& High Voltage Engineering	C401.1	An ability to apply the knowledge of over voltages and its protective methods in power system.
	C401.2	Skilled to understand the behaviour of travelling wave on different load condition using Bewleys lattice diagram.
	C401.3	An ability to use the concepts and methods of electrical breakdown in different medium.
	C401.4	An ability to design various AC and DC high voltage generating techniques for testing the power apparatus.
	C401.5	An ability to apply the various AC and DC high voltage and current measuring techniques in power system.
	C401.6	An ability to apply the knowledge of testing the various power apparatus to provide safety and protection for the individual.
C402/ EE8702 & Power System Operation And Control	C402.1	Illustrate the concept of day-to-day operation of power system on varying system load demand
	C402.2	Infer the control actions on the power system to meet the minute-to-minute variation of system load demand
	C402.3	Explain the basic concepts and methods of reactive power control
	C402.4	Interpret the basic concepts, types and modelling of excitation systems
	C402.5	Formulate the mathematical model of economic load dispatch for any power system
	C402.6	Explain the role of computers in the power system operation and control
C403/ EE8703 & Renewable Energy Systems	C403.1	To explain concept of various forms of Non-renewable and renewable energy
	C403.2	To outline division aspects and utilization of renewable energy sources for both domestic and industrial applications
	C403.3	To analysis the environmental and cost economics of using renewable energy sources compared to fossil fuels.
	C403.4	Design suitable power controller for wind and solar applications

	C403.5	To analysis the environmental and cost economics of using renewable energy sources compared to fossil fuels.
	C403.6	At the end of the course, the students are expected to identify the new methodologies / technologies for effective utilization of renewable energy
C404/ OCS752 & Introduction To C	C404.1	Explain the syntax for C programming
	C404.2	Associate the programs in 'C' for real world situation
	C404.3	Apply the concepts of Arrays, Strings in 'C' language for user defined problems.
	C404.4	Apply the concept of functions and pointers
	C404.5	Associate the programs with structure using 'C' language.
	C404.6	Discuss to read and write data from/to files in 'C' Programs.
C405/ GE8071 & Disaster Management	C405.1	Obtain knowledge about various types of Disasters and it impacts.
	C405.2	Students are capable of explaining Disaster cycle, and gain knowledge about various approaches to disaster risk reduction
	C405.3	Students have got enough knowledge about the concept of Inter – Relationship between disasters and development.
	C405.4	Students gain knowledge about Disaster risk management in India.
	C405.5	Students have got enough knowledge about the field works and case studies related to Disaster management.
	C405.6	Students will be able to understand the type of disaster and its impacts, and disaster management.
C406/ EE8010 & Power System Transients	C406.1	To explain the Generation of power system switching transients and their control using circuit.
	C406.2	To explain the transients and their control using circuit theoretical concept.
	C406.3	Students will be able to understand types of transients in power system.
	C406.4	Students will be able to understand Mechanism of lightning strokes and the production.
	C406.5	Explain the Propagation, reflection and refraction of travelling waves.
	C406.6	Students will be able to understand the transients in the integrated power system
C407/ EE8711 & Power System Simulation Lab	C407.1	Analyze the various parameters and model a transmission line networks
	C407.2	Apply load flow analysis to an electrical power network and interpret the results using Gauss-Seidel and Newton Raphson Methods
	C407.3	Analyze a network under balanced, unbalanced fault conditions and interpret the results
	C407.4	Explain the transient stability analysis of single and multi machine infinite bus system

	C407.5	Examine the electromagnetic transients and its impact in power system studies
	C407.6	Evaluate the frequency dynamics, economic dispatch of single and two area power systems
C408/ EE8712 & Renewable Energy Systems Lab	C408.1	Ability to understand and analyze Renewable energy systems.
	C408.2	Ability to train the students in Renewable Energy Sources and technologies.
	C408.3	Ability to provide adequate inputs on a variety of issues in harnessing Renewable Energy.
	C408.4	Ability to simulate the various Renewable energy sources.
	C408.5	Ability to recognize current and possible future role of Renewable energy sources.
	C408.6	Ability to understand basics of Intelligent Controllers
C409/ EE8015& Electric Energy Generation, Utilization And Conservation	C409.1	Interpret the basics of electric traction and their performance
	C409.2	Explain the types of lamps and design the illumination systems for various lighting schemes
	C409.3	Discuss the types of electric heating and welding
	C409.4	Infer the phenomenon of solar radiation and explain the types of solar energy collectors
	C409.5	Explain the basic principles, components of wind energy conversion systems
	C409.6	Discuss the types of wind turbines and analyze the aerodynamic force acting on the blades
C410/ EE8017 & High Voltage Direct Current Transmission	C410.1	Discuss the planning of DC power transmission and compare with AC power transmission
	C410.2	Analyze the effect of various HVDC converters in transmission lines
	C410.3	Evaluate the various types of compounding and regulation methods for power system stability
	C410.4	Explain the effects of harmonics and design suitable filters for power system control and protection
	C410.5	Infer the basic physical phenomenon arising in DC insulation and dielectric stress consideration.
	C410.6	Interpret the modeling of HVDC Systems for digital dynamic simulation by using suitable philosophy and tools.
C411/EE8811 &	C411.1	Develop the ability to solve a specific problem right from its identification

Project Work	C411.2	Plan the project work schedule and prepare budget for experimentation
	C411.3	Identify and design the circuits with necessary components, simulation tools and accessories for the specific problem
	C411.4	Demonstrate the system model and also analyze the parameters in various parts of the system using simulation tools
	C411.5	Explain the project work orally among the team members and also in review presentation
	C411.6	Write the project report and face viva voce examination