ROHINI COLLEGE OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

B.E. Electrical and Electronics Engineering
Anna University Regulation 2013
List of Course Names

S.No.	Sem	Course code	Course	Course Title
1	I	13C101	HS6151	Technical English - I
2	I	13C102	MA6151	Mathematics - I
3	I	13C103	PH6151	Engineering Physics - I
4	I	13C104	CY6151	Engineering Chemistry - I
5	I	13C105	GE6151	Computer Programming
6	I	13C106	GE6152	Engineering Graphics
7	I	13C107	GE6161	Computer Practices Laboratory
8	I	13C108	GE6162	Engineering Practices Laboratory
9	I	13C109	GE6163	Physics and Chemistry Laboratory - I
10	II	13C201	HS6251	Technical English - II
11	II	13C202	MA6251	Mathematics - II
12	II	13C203	PH6251	Engineering Physics - II
13	II	13C204	CY6251	Engineering Chemistry - II
14	II	13C205	GE6251	Basic Civil and Mechanical Engineering
15	II	13C206	EE6201	Circuit Theory
16	II	13C207	GE6262	Physics and Chemistry Laboratory - II
17	II	13C208	GE6263	Computer Programming Laboratory
18	II	13C209	EE6211	Electric Circuits Laboratory
19	III	13C301	MA6351	Transforms and Partial Differential Equations
20	III	13C302	EE6301	Digital Logic Circuits
21	III	13C303	EE6302	Electromagnetic Theory
22	III	13C304	GE6351	Environmental Science and Engineering
23	III	13C305	EC6202	Electronic Devices and Circuits
24	III	13C306	EE6303	Linear Integrated Circuits and Applications
25	III	13C307	EC6361	Electronics Laboratory
26	III	13C308	EE6311	Linear and Digital Integrated Circuits Laboratory
27	IV	13C401	MA6459	Numerical Methods
28	IV	13C402	EE6401	Electrical Machines - I
29	IV	13C403	CS6456	Object Oriented Programming
30	IV	13C404	EE6402	Transmission and Distribution
31	IV	13C405	EE6403	Discrete Time Systems and Signal Processing
32	IV	13C406	EE6404	Measurements and Instrumentation
33	IV	13C407	CS6461	Object Oriented Programming Laboratory
34	IV	13C408	EE6411	Electrical Machines Laboratory - I
35	V	13C501	EE6501	Power System Analysis

36	V	13C502	EE6502	Microprocessors and Microcontrollers
37	V	13C503	ME6701	Power Plant Engineering
38	V	13C504	EE6503	Power Electronics
39	V	13C505	EE6504	Electrical Machines - II
40	V	13C506	IC6501	Control Systems
41	V	13C507	EE6511	Control and Instrumentation Laboratory
42	V	13C508	GE6674	Communication and Soft Skills- Laboratory Based
43	V	13C509	EE6512	Electrical Machines Laboratory - II
44	VI	13C510	EC6651	Communication Engineering
45	VI	13C601	EE6601	Solid State Drives
46	VI	13C602	EE6602	Embedded Systems
47	VI	13C603	EE6603	Power System Operation and Control
48	VI	13C604	EE6604	Design of Electrical Machines
49	VI	13C605 (PE I)	EE6002	Power System Transients
50	VI	13C606	EE6611	Power Electronics and Drives Laboratory
51	VI	13C607	EE6612	Microprocessors and Microcontrollers Laboratory
52	VI	13C608	EE6613	Presentation Skills and Technical Seminar
53	VII	13C701	EE6701	High Voltage Engineering
54	VII	13C702	EE6702	Protection and Switchgear
55	VII	13C703	EE6703	Special Electrical Machines
56	VII	13C704	MG6851	Principles of Management
57	VII	13C705 (PE II)	EI6704	Biomedical Instrumentation
58	VII	13C706 (PE III)	EE6007	Micro Electro Mechanical Systems
59	VII	13C707	EE6711	Power System Simulation Laboratory
60	VII	13C708	EE6712	Comprehension
61	VIII	13C801	EE6801	Electric Energy Generation Utilization and Conservation
62	VIII	13C802	EE6009	Power Electronics for Renewable Energy Systems
63	VIII	13C803	GE6075	Professional Ethics in Engineering
64	VIII	13C804	EE6811	Project Work

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Course Outcomes (CO)

13C101- HS 6151 – TECHNICAL ENGLISH – I

13C101.1	Develop the learners' basic communication skills in English by listening audios and long text
13C101.2	Explain technical things and develop instructions and recommendations.
13C101.3	Summarize cohesively and coherently without grammatical errors, organize the ideas logically on a topic
13C101.4	Interpret charts and graphs and illustrate different types of essays.
13C101.5	Apply the technical strategies in E-Learning and develop E-Communication Skills

13C102- MA6151 –MATHEMATICS – I

13C102.1	Apply the concept of orthogonal transformation to diagonalise the given matrix.
13C102.2	Apply the comparison test, Integral test, D' Alembert's ratio test and Leibnitz' s test to verify the convergence.
13C102.3	Find the radius of curvature, circle of curvature and Centre of curvature of a given curve.
13C102.4	Identify maxima and minima in two variables using partial differentiation.
13C102.5	Apply multiple integral techniques in evaluating Area and Volume of Solids

13C103- PH 6151 – ENGINEERING PHYSICS -I

13C103.1	Outline the various crystal structure and its growth techniques
13C103.2	Illustrate basic concepts of stress and strain in solids and one dimensional Heat transfer
13C103.3	Illustrate the quantum theory and its applications
13C103.4	Apply the knowledge of acoustics in designing buildings
13C103.5	Classify the type of optical fiber and Laser

13C104 CY6151 – ENGINEERING CHEMISTRY-I

13C104.1	List the various methods involved in the polymerization techniques.
13C104.2	Apply the concepts of Thermodynamic laws in engineering applications.
13C104.3	Outline the molecular structure by using spectroscopic techniques.
13C104.4	Illustrate the basic concepts of phase rule for the purpose and significance of alloying.
13C104.5	Apply the basics of Nano materials and their properties in various applications.

13C105 GE6151 – COMPUTER PROGRAMMING

13C105.1	Explain the Organization of a Computer and number systems.
13C105.2	Explain the attributes of algorithm and programming basics
13C105.3	Apply arrays and string functions in simple C programs
13C105.4	Explain functions and pointers for solving problems
13C105.5	Apply structure and union in simple C applications

13C106- GE 6152 – ENGINEERING GRAPHICS

13C106.1	Discuss the orthographic views of Engineering components.
13C106.2	Relate to basic principles of orthographic projection for drawing projection of points, lines and planes.
13C106.3	Apply basic principles of orthographic projection for drawing projection of solids like prisms, pyramids, cone and cylinder.
13C106.4	Show the sectioned view of solids and the development of solid surfaces
13C106.5	Show the isometric projection and perspective views for simple solids.

13C107 GE6161 – COMPUTER PRACTICES LABORATORY

13C107.1	Apply word processor to prepare data for presentation and visualization
13C107.2	Explain various formatting tools, types of tables, drawing tools and mail merging for effective documentation
13C107.3	Apply spread sheet to prepare data for presentation and visualization
13C107.4	Apply basic programs in C language in problem solving
13C107.5	Apply suitable data structures and functions in problem solving
13C107.6	Exhibit ethical principles in engineering practices
13C107.7	Perform task as an individual and / or team member to manage the task in time
13C107.8	Express the Engineering activities with effective presentation and report
13C107.9	Interpret the findings with appropriate technological / research citation.

13C108 GE6163 – PHYSICS AND CHEMISTRY LABORATORY – I

13C108.1	Find the wavelength and particle size using laser and thermal conductivity of bad conductors using Lee's Disc
13C108.2	Compare the Young's modulus of the material by non uniform bending and the wavelength of mercury spectrum using Spectrometer grating both individually and by team work
13C108.3	List the velocity of ultrasonic waves in different liquids like water and kerosene
13C108.4	Estimate strength of acids quantitatively based on the conductance and PH level of the solution both individually and in teams
13C108.5	Estimate water quality parameters such as dissolved oxygen content, chloride content and iron content of the water samples both individually and in teams .
13C108.6	Exhibit ethical principles in engineering practices
13C108.7	Perform task as an individual and / or team member to manage the task in time
13C108.8	Express the Engineering activities with effective presentation and report
13C108.9	Interpret the findings with appropriate technological / research citation.

13C109 GE6162 – ENGINEERING PRACTICES LABORATORY

13C109.1	Explain the various manufacturing process in smithy, foundry, fitting, assembling and disassembling and will be able to provide effective presentation.
13C109.2	Summarize the operations of various machine tools lathe , drilling
13C109.3	Develop models by using skills achieved from workshop sections like welding, carpentry, sheet metal and plumbing
13C109.4	Apply the skills of basic electrical engineering for domestic wiring practices
13C109.5	Apply the measuring instruments like energy meter and perform measurements in electrical circuits.
13C109.6	Explain the working of electronic components.
13C109.7	Apply the electronic principle for develop engineering circuits.
13C109.8	Exhibit ethical principles in engineering practices
13C109.9	Perform task as an individual and / or team member to manage the task in time
13C109.10	Express the Engineering activities with effective presentation and report
13C109.11	Interpret the findings with appropriate technological / research citation.

13C201 HS 6251 – TECHNICAL ENGLISH – II

13C201.1	Explain convincingly their opinions and also initiate, negotiate and argue using appropriate communicative strategies.
13C201.2	Apply the basic grammar techniques to enhance the language

13C201.3	Make use of the importance of writing skills and its techniques
13C201.4	Develop various types and formats of reports, emails, resumes, letters, to meet particular needs or purposes
13C201.5	Apply skills pertaining to presentation, group discussion, creative and critical thinking in everyday life

13C202 MA6251 –MATHEMATICS – II

13C202.1	Solve the line integral, surface integral and volume integral in Engineering applications
13C202.2	Solve simultaneous first order linear equations with constant coefficients.
13C202.3	Solve the second order ODE by Laplace transformation.
13C202.4	Find the analytic functions by Milne Thomson method
13C202.5	Solve real definite integrals , contour integrals around unit circle and semi-circle

13C203 PH 6251 – ENGINEERING PHYSICS–II

13C203.1	Infer the electrical properties of material and quantum theory.
13C203.2	Classify the type of semiconductor and its uses..
13C203.3	Outline the magnetic properties of different materials and superconductivity.
13C203.4	Apply the knowledge of polarization in polaroids
13C203.5	Interpret the metallic glasses,Nano Materials and Biomaterials

13C204 CY6251 – ENGINEERING CHEMISTRY-II

13C204.1	Explain the concepts of various water treatment process.
13C204.2	Apply the principles of electrochemical reactions in prevention of materials from corrosion.
13C204.3	Explain the working of power plants using conventional and non conventional sources of energy such as nuclear, solar and wind
13C204.4	Illustrate knowledge of metals for Engineering Applications
13C204.5	Explain various types of fuels, their manufacturing processes and calculation of calorific theoretically

13C205 EE 6201 – CIRCUIT THEORY

13C205.1	Apply the concept of Kirchhoff's law on electrical circuits
13C205.2	Analyze various network theorems for solving AC and DC circuits.
13C205.3	Analyze resonance in magnetically coupled circuits.
13C205.4	Analyze the transient response of a.c and d,c excited elements.
13C205.5	Analyze star and delta load connected three phase circuits.

13C206 GE6263 – COMPUTER PROGRAMMING LABORATORY

13C206.1	Explain UNIX Operating system and usage of file system
13C206.2	Apply Shell Commands for a given task using filter and pipe commands.
13C206.3	Explain the Shell scripts in VI editor.
13C206.4	Apply C Program on Unix environment for problem solving.
13C206.5	Apply File handling in C to copy, merge and display the given file.
13C206.6	Exhibit ethical principles in engineering practices
13C206.7	Perform task as an individual and / or team member to manage the task in time
13C206.8	Express the Engineering activities with effective presentation and report
13C206.9	Interpret the findings with appropriate technological / research citation.

13C207 GE6262 – PHYSICS AND CHEMISTRY LABORATORY– II

13C207.1	Find the particle size by diode laser .
13C207.2	List out the thermal conductivity of bad conductors .
13C207.3	Show the velocity of ultrasonic waves in different liquids like water and kerosene
13C207.4	Show the iron content of the given solution using potentiometer
13C207.5	Relate water quality parameters such as alkalinity, hardness, Sodium of the water samples both individually and in teams.
13C207.6	Exhibit ethical principles in engineering practices
13C207.7	Perform task as an individual and / or team member to manage the task in time
13C207.8	Express the Engineering activities with effective presentation and report
13C207.9	Interpret the findings with appropriate technological / research citation.

13C208 EE6211 – ELECTRIC CIRCUITS LABORATORY

13C208.1	Experimental verification of Kirchhoff's voltage and current laws
13C208.2	Experimental verification of network theorems (Thevenin's, Norton, Superposition and Maximum power transfer Theorem).
13C208.3	Study of CRO and measurement of sinusoidal voltage, frequency and power factor.
13C208.4	Experimental determination of time constant of series R-C electric circuits

13C208.5	Experimental determination of frequency response of RLC circuits.
13C208.6	Design and Simulation of series resonance circuit
13C208.7	Design and Simulation of parallel resonant circuits.
13C208.8	Simulation of low pass and high pass passive filters
13C208.9	Simulation of three phases balanced and unbalanced star, delta networks circuits
13C208.10	Experimental determination of power in three phase circuits by two-watt meter method
13C208.11	Calibration of single phase energy meter

13C301 MA6351-TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS

13C301.1	Formulate simple Engineering problems as partial Differential Equations
13C301.2	Apply the concept of Fourier series in solving boundary value problems
13C301.3	Solve the standard partial differential equations in engineering problems like wave equations, Heat flow equations by Fourier series
13C301.4	Solve Fourier sine and cosine transforms and properties
13C301.5	Explain the discrete transform applied to engineering problems

13C302 EE6301-DIGITAL LOGIC CIRCUITS

13C302.1	Describe the various number system and the operation of digital logic families.
13C302.2	Explain the implementation of Combinational circuits
13C302.3	Illustrate the concept of Synchronous Sequential circuits.
13C302.4	Illustrate the concept of Asynchronous Sequential circuits and Programmable logic devices.
13C302.5	Write the VHDL program for various logic circuits.

13C303 EE6302-ELECTROMAGNETIC THEORY

13C303.1	Apply the concept of different theorems and laws in Electromagnetic fields.
13C303.2	Interpret the concept of Electromagnetic occurrence in electric field
13C303.3	Apply the concept of different laws to execute magneto static function in different media.
13C303.4	Examine the concept of electrodynamics fields using Maxwell equations
13C303.5	Interpret the concept of electromagnetic waves and pointing vector.

13C304 GE6351-ENVIRONMENTAL SCIENCE AND ENGINEERING

13C304.1	Illustrate the features of Ecosystem & biodiversity
13C304.2	Choose pollution control methods and waste management.
13C304.3	Apply the environmental concepts for conservation and protection of natural resources.
13C304.4	Demonstrate the impact of social issues on environment.
13C304.5	Demonstrate the impact of human on environment.

13C305 EC6202/ ELECTRONIC DEVICES AND CIRCUITS

13C305.1	Demonstrate the construction and operation of semiconductor diodes
13C305.2	Describe the structure, operation and characteristics of transistor and thyristor
13C305.3	Explain the small signal model analysis of transistor.
13C305.4	Summarize the operation of differential amplifier and multistage amplifier
13C305.5	Discuss the concepts of feedback amplifiers and various types of Oscillator

13C306 EE6303-LINEAR INTEGRATED CIRCUITS AND APPLICATIONS

13C306.1	Apply the concept of fabrication process of IC
13C306.2	Examine the characteristics of Operational Amplifier
13C306.3	Examine the applications of various Operational Amplifier
13C306.4	Examine the performance of special ICs
13C306.5	Examine the operations of various types of special ICs

13C307 EC6361-ELECTRONICS LABORATORY

13C307.1	Analyze the PN junction diode acts as a perfect switch and Zener diode acts as voltage regulator.
13C307.2	Analyze the characteristics of a voltage-controlled device.
13C307.3	Design an experiment and determine the frequency response of common emitter amplifier
13C307.4	Design and implement a circuit that converts AC voltage to DC voltage for the given input and calculate its ripple factor and percentage of regulation with and without capacitive and inductive filter
13C307.5	Analyze the sine, square and triangular waveforms using cathode ray oscilloscope
13C307.6	Exhibit ethical principles in engineering practices
13C307.7	Perform task as an individual and/ or team member to manage the task in time

13C307.8	Express the engineering activities with effective presentation and report.
13C307.9	Interpret the findings with appropriate technological/ research citation

13C308 EE6311- LINEAR AND DIGITAL INTEGRATED CIRCUITS LABORATORY

13C308.1	Simplify and implement Boolean functions.
13C308.2	Construct and access counters using specific counter IC.
13C308.3	Analyze the applications of IC.
13C308.4	Analyze the working of timer in monostable and a stable mode.
13C308.5	Construct code converters.
13C308.6	Exhibit ethical principles in engineering practices
13C308.7	Perform task as an individual and/ or team member to manage the task in time
13C308.8	Express the engineering activities with effective presentation and report.
13C308.9	Interpret the findings with appropriate technological/ research citation

13C401 MA6459-NUMERICAL METHODS

13C401.1	Solve the system of linear algebraic equations in Electrical Engineering
13C401.2	Apply the interpolation technique for solving real time engineering problems
13C401.3	Solve single and double integrals using numerical techniques
13C401.4	Compute the solution of first order differential equation using various finite difference method
13C401.5	Solve ordinary and partial differential equations using numerical methods

13C402 EE6401-ELECTRICAL MACHINES - I

13C402.1	Explain the concept of magnetic circuits in electrical machines.
13C402.2	Demonstrate the performance of transformer and its testing.
13C402.3	Describe the concept of Electro mechanical energy conversion in rotating machine.
13C402.4	Compare the mechanical and electrical performance of DC generator
13C402.5	Compare the mechanical and electrical performance of DC motors

13C403 CS6456-OBJECT ORIENTED PROGRAMMING

13C403.1	Discuss the key attributes of C++ like native types and statements and implement ADT
13C403.2	Demonstrate object-oriented programs using polymorphism and data abstraction concepts.
13C403.3	Apply templates, construct generics and to handle exceptions
13C403.4	Apply the concept of java in creating classes, objects using arrays and control statements.
13C403.5	Describe packages, handle exceptions and develop multi-threaded programs.

13C404 EE6402-TRANSMISSION AND DISTRIBUTION

13C404.1	Demonstrate the structure and various transmission system in power system.
13C404.2	Explain the modelling of transmission lines
13C404.3	Demonstrate the mechanical design of overhead transmission lines
13C404.4	Explain the electrical and mechanical parameters of insulators and cables in transmission and distribution system
13C404.5	Summarize the function of components in distribution system

13C405 EE6403-DISCRETE TIME SYSTEMS AND SIGNAL PROCESSING

13C405.1	Classify the different types of discrete time signals and systems
13C405.2	Apply the Z transform and Inverse Z transform to the discrete time systems.
13C405.3	Apply Radix-2 Decimation in Time (DIT) and Decimation in Frequency (DIF)FFT Algorithm to Compute Discrete Fourier Transform.
13C405.4	Construct the IIR and FIR Digital filters.
13C405.5	Explain the architectures and functions of Digital signal processors.

13C406 EE6404-MEASUREMENTS AND INSTRUMENTATION

13C406.1	Discuss about the characteristics and errors of measuring instruments
13C406.2	Summarize the measuring instruments involved in measuring of electrical parameters
13C406.3	Classify the measuring techniques for bridges and potentiometers
13C406.4	Demonstrate the analog, digital storage and display devices
13C406.5	Demonstrate the operation of various transducers and data acquisition

13C407 CS6461 – OBJECT ORIENTED PROGRAMMING LABORATORY

13C407.1	Design C++ programs using functions, classes with objects, member functions and constructors
13C407.2	Develop operator, function over loading and run time polymorphism using C++
13C407.3	Develop file handing techniques in C++ for sequential and random access also use Java code for strings
13C407.4	Construct packages and interfaces in Java
13C407.5	Create threads in Java and handle predefined and user defined exception
13C407.6	Exhibit ethical principles in engineering practices
13C407.7	Perform task as an individual and/ or team member to manage the task in time
13C407.8	Express the engineering activities with effective presentation and report.
13C407.9	Interpret the findings with appropriate technological/ research citation

13C408 EE6411-ELECTRICAL MACHINES LABORATORY - I

13C407.1	Analyze the performance characteristics of DC Shunt and Compound generator
13C407.2	Analyze the performance characteristics and speed control of various types of DC motor
13C407.3	Experimentally obtain the load characteristics of transformer.
13C407.4	Experimentally obtain the equivalent circuit of transformer.
13C407.5	Demonstrate the concept of starters for DC motors and various three phase transformer connections.
13C407.6	Exhibit ethical principles in engineering practices
13C407.7	Perform task as an individual and/ or team member to manage the task in time
13C407.8	Express the engineering activities with effective presentation and report.
13C407.9	Interpret the findings with appropriate technological/ research citation

13C501 EE6501-POWER SYSTEM ANALYSIS

13C501.1	Apply the concept of per unit representation and bus admittance network in power system.
13C501.2	Analyze the different techniques of power flow analysis.
13C501.3	Examine different symmetrical fault analysis technique in power system
13C501.4	Examine different unsymmetrical fault analysis technique in power system
13C501.5	Analyze different stability analysis technique in power system

13C502 EE6502-MICROPROCESSORS AND MICROCONTROLLERS

13C502.1	Illustrate 8085 processors and its memory organization
13C502.2	Develop 8085 ALP for various applications.
13C502.3	Illustrate 8051 controller and its memory organization
13C502.4	Illustrate the function of various peripheral interfacing ICs
13C502.5	Develop real time application using 8085 processorand 8051controller

13C503 ME6701 -POWER PLANT ENGINEERING

13C503.1	Demonstrate the construction and working of coal based thermal power plant
13C503.2	Explain the layout, construction and working of diesel, gas and combined cycle power plant
13C503.3	Describe the construction and working of Nuclear power plant
13C503.4	Explain the construction and working of renewable energy sources.
13C503.5	Estimate energy calculation and environment related issues in power sectors.

13C504 EE6503-POWER ELECTRONICS

13C504.1	Summarize the different types of power semiconductor devices and their switching characteristics
13C504.2	Explain the operation of Converters with and without source and load inductance.
13C504.3	Illustrate the operation and switching characteristics of Choppers and outline the applications.
13C504.4	Discuss the different modulation and harmonic reduction techniques of Inverters.
13C504.5	Describe the operation of AC voltage controller and cyclo converter.

13C505 EE6504-ELECTRICAL MACHINES-II

13C505.1	Illustrate the construction and performance of synchronous generator.
13C505.2	Describe the construction and performance of synchronous motor
13C505.3	Illustrate the construction and performance of three-phase induction motors.
13C505.4	Discuss the different starting methods and speed control of single induction motor.
13C505.5	Explain the performance of single-phase induction motor and special electrical machines.

13C506 IC6501-CONTROL SYSTEMS

13C506.1	Explain different reduction techniques to determine the transfer function and Differentiate the working of AC and DC servomotors
13C506.2	Illustrate the time response of systems and steady state error analysis.
13C506.3	Illustrate the open loop and closed loop frequency responses of systems.
13C506.4	Demonstrate stability of the system and design of compensators.
13C506.5	Explain state variable representation of physical systems.

13C507 EE6511-CONTROL AND INSTRUMENTATION LABORATORY

13C507.1	Illustrate stability analysis of system using controllers
13C507.2	Demonstrate the Lag, Lead and Lag-Lead Compensators.
13C507.3	Explain the position control and Characteristics of synchro's.
13C507.4	Calculate the unknown parameters of bridge networks and dynamics of sensor and transducer
13C507.5	Calculate the measurement of power, Energy and the concept of signal conditioning.
13C507.6	Exhibit ethical principles in engineering practices.
13C507.7	Perform task as an individual and/ or team member to manage the task in time
13C507.8	Express the engineering activities with effective presentation and report.
13C507.9	Interpret the findings with appropriate technological/ research citation

13C508 GE6563-COMMUNICATION SKILLS-LABORATORY BASED

13C508.1	Summarize various skill such as soft skill, hard skill, employability and career skill and demonstrate values such as time management and general awareness of current affairs
13C508.2	Demonstrate oneself before the audience by making effective presentations on introducing oneself, answering questions and visual presenting.
13C508.3	Demonstrate oneself by participating in group discussion, brainstorming sessions and question sessions
13C508.4	Develop interview skills so as to be successful in them
13C508.5	Develop adequate soft skill required for the workplace and long-term career
13C508.6	Exhibit ethical principles in engineering practices
13C508.7	Perform task as an individual and/ or team member to manage the task in time
13C508.8	Express the engineering activities with effective presentation and report.
13C508.9	Interpret the findings with appropriate technological/ research citation

13C509 EE6512-ELECTRICAL MACHINES LABORATORY-II

13C509.1	Analyze the concept of regulation of three phase alternator by various methods.
13C509.2	Analyze the performance of three phase synchronous motor by plotting "V and inverted- V" curves.
13C509.3	Experimentally obtain the load and no-load characteristics of single and three phase induction motor.
13C509.4	Analyze the losses of three phase induction motor.
13C509.5	Demonstrate the concept of starters for induction motors.
13C509.6	Exhibit ethical principles in engineering practices
13C509.7	Perform task as an individual and/ or team member to manage the task in time
13C509.8	Express the engineering activities with effective presentation and report.
13C509.9	Interpret the findings with appropriate technological/ research citation

13C601 EC6651-COMMUNICATION ENGINEERING

13C601.1	Analyze the operation of different analog communication techniques
13C601.2	Analyze the operation of different digital communication techniques
13C601.3	Analyze how the information is transmitted to the receiver through different coding methods.
13C601.4	Summarize the various types of multiple access techniques
13C601.5	Apply different techniques used in the satellite communication and optical fibers

13C602 EE6601- SOLID STATE DRIVES

13C602.1	Interpret the concept of steady state operation and transient dynamics of a motor load system.
13C602.2	Examine the operation of converter and Chopper fed DC drives.
13C602.3	Examine the different control methods of Induction motor drives
13C602.4	Examine the different control methods of Synchronous motor drives
13C602.5	Apply the different controllers for DC motor drives.

13C603 EE6602-EMBEDDED SYSTEMS

13C603.1	Summarize the basic build process of embedded systems and structural units.
13C603.2	Classify the types of I/O device ports,buses and different interfaces for data transfer.
13C603.3	Explain the Embedded Product Development Life Cycle (EDLC).
13C603.4	Discuss the basic concept of Real Time Operating Systems.
13C603.5	Describe the programming concepts of Embedded Systems.

13C604 EE6603-POWER SYSTEM OPERATION AND CONTROL

13C604.1	Demonstrate the overview of power system operation and control.
13C604.2	Examine the performance ofload-frequency control.
13C604.3	Analyse the performance ofreactive power controller.
13C604.4	Apply an economic operation of power system.
13C604.5	Analyse various state of power system

13C605 EE6604-DESIGN OF ELECTRICAL MACHINES

13C605.1	Illustrate the concept magnetic circuits of various types of electrical machines.
13C605.2	Examine the main dimensions and cooling systems of transformers.
13C605.3	Predict armature and field parameters of D.C machines.
13C605.4	Evaluate the stator and rotor parameters of induction machines.
13C605.5	Evaluate the stator and rotor parameters of synchronous machines.

13C606 (PE-I) EE6002-POWER SYSTEM TRANSIENTS

13C606.1	Discuss the effects of transients in power system
13C606.2	Describe Switching Transients and control circuits
13C6056.3	Summarize the lightning transients and protective schemes
13C606.4	Discuss the travelling waves on transmission line.
13C606.5	Apply EMTP for transient computation in integrated system.

13C607 EE6611- POWER ELECTRONICS AND DRIVES LABORATORY

13C607.1	Describe performance characteristics of Power semiconductor devices
13C607.2	Discuss the performance of single-phase bridge Rectifier.
13C607.3	Describe the performance of step up & step-down chopper
13C607.4	Discuss the performance of PWM based single phase & Three phase inverter
13C607.5	Describe the performance of AC voltage controller
13C607.6	Exhibit ethical principles in engineering practices
13C607.7	Perform task as an individual and/ or team member to manage the task in time
13C607.8	Express the engineering activities with effective presentation and report.
13C607.9	Interpret the findings with appropriate technological/ research citation

13C608 EE6612-MICROPROCESSORS AND MICROCONTROLLERS LABORATORY

13C608.1	Apply the arithmetic operations, logical operations and sorting using 8085 microprocessors.
13C608.2	Develop program using control instructions.
13C608.3	Analyze the operation of peripheral interfacing with 8085 microprocessors.
13C608.4	Apply the arithmetic operations, logical operations and branching operation using 8051 microcontrollers.
13C608.5	Develop a program for peripheral interfacing with 8051 microcontrollers.
13C608.6	Exhibit ethical principles in engineering practices
13C608.7	Perform task as an individual and/ or team member to manage the task in time
13C608.8	Express the engineering activities with effective presentation and report.
13C608.9	Interpret the findings with appropriate technological/ research citation

13C609 EE6613-PRESENTATION SKILLS AND TECHNICAL SEMINAR

13C609.1	Identify the new ideas and cuttingedge technologies in various engineering domain
13C609.2	Develop team work for effective communication and healthy discussion.
13C609.3	Make effective presentation with the usage of modern tools
13C609.4	Impart skills in preparing detailed report.
13C609.5	Discuss on current scenario of social issues.
13C609.6	Exhibit ethical principles in engineering practices
13C609.7	Perform task as an individual and/ or team member to manage the task in time
13C609.8	Express the engineering activities with effective presentation and report.
13C609.9	Interpret the findings with appropriate technological/ research citation

13C701 EE6701-HIGH VOLTAGE ENGINEERING

13C701.1	Describe the various causes for transients in power system.
13C701.2	Compare the various breakdown mechanisms in insulations.
13C701.3	Explain the generation of high voltage and high current.
13C701.4	Summarize the various high voltage and high current measuring methods.
13C701.5	Select the various power apparatus testing and insulation coordination in power system.

13C702 EE6702-PROTECTION AND SWITCHGEAR

13C702.1	Summarize the protection scheme under abnormal condition in power system.
13C702.2	Demonstrate the various types electromagnetic Relays in power system.
13C702.3	Compare the different protective schemes employed in power system.
13C702.4	Demonstrate the operation of static and numerical relays in power system.
13C702.5	Classify the function and different testing of circuit breakers in power system.

13C703 EE6703- SPECIAL ELECTRICAL MACHINES

13C703.1	Examine the performance of synchronous reluctance motor.
13C703.2	Inspect the performance characteristics of different types of stepper motor
13C703.3	Analyze the characteristics and control system of switched reluctance motor.
13C703.4	Examine the characteristics and control function of permanent magnet brushless D.C. motors.
13C703.5	Examine the characteristics and control system for permanent magnet synchronous motor

13C704 MG6851-PRINCIPLES OF MANAGEMENT

13C704.1	Explain the Evolution of Management, culture and types of Organization
13C704.2	Classify various Strategic planning tools and Techniques.
13C704.3	Summarize the organization structure, Line,Staff authority and HR Management
13C704.4	Identify the leadership style, barriers to effective communication
13C704.5	Classify the Controlling techniques to maintain standards in Organizations

13C705 (PE-II) EI6704-BIOMEDICAL INSTRUMENTATION

13C705.1	Discuss the fundamentals of biomedical measurement system.
13C705.2	Express the measurement of non electrical parameters in biomedical system
13C705.3	Identify the electrical parameters and safety of biomedical system
13C705.4	Differentiate the different imaging techniques in medical application
13C705.5	Discuss the concept of different life assisting, therapeutic and robotic devices

13C706 (PE-III) EE6007-MICROELECTRO MECHANICAL SYSTEMS

13C706.1	Explain the micro fabrication and silicon based mems process.
13C706.2	Demonstrate the performance of Electrostatic sensors and Actuators.
13C706.3	Demonstrate the performance of Piezoelectric sensors and Actuators.
13C706.4	Compare various Etching Processes in mems.
13C706.5	Summarize the function of polymers in mems fabrication.

13C707 EE6711-POWER SYSTEM SIMULATION LABORATORY

13C707.1	Describe performance characteristics of Power semiconductor devices
13C707.2	Discuss the performance of single-phase bridge Rectifier.
13C707.3	Describe the performance of step up & step-down chopper
13C707.4	Discuss the performance of PWM based single phase & Three phase inverter
13C707.5	Describe the performance of AC voltage controller
13C707.6	Exhibit ethical principles in engineering practices
13C707.7	Perform task as an individual and/ or team member to manage the task in time
13C707.8	Express the engineering activities with effective presentation and report.
13C707.9	Interpret the findings with appropriate technological/ research citation

13C708 EE6712-COMPREHENSION

13C708.1	Summarize various skill such as soft skill, hard skill, employability and career skill and demonstrate values such as time management and general awareness of current affairs
13C708.2	Demonstrate oneself before the audience by making effective presentations on introducing oneself, answering questions and visual presenting.
13C708.3	Demonstrate oneself by participating in group discussion, brainstorming sessions and question sessions. Develop activities to improve GD skills
13C708.4	Develop interview skills so as to be successful in them
13C708.5	Develop adequate soft skill required for the workplace and long-term career
13C708.6	Exhibit ethical principles in engineering practices
13C708.7	Perform task as an individual and/ or team member to manage the task in time
13C708.8	Express the engineering activities with effective presentation and report.
13C708.9	Interpret the findings with appropriate technological/ research citation

13C801 EE6801-ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION

13C801.1	Analyze the various electric traction systems
13C801.2	Apply the energy saving concepts in different types of illumination
13C801.3	Apply the different methods of electric heating and electric welding
13C801.4	Examine the various levels of Solar Radiation and Solar Energy Collectors
13C801.5	Examine the concepts of Wind Energy and its utilization

13C802 EE6009-POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS

13C802.1	Discuss the various renewable energy conversion systems.
13C802.2	Illustrate the performance of various machines used in renewable energy conversion system.
13C802.3	Summarize the performance of various converters in renewable energy conversion systems.
13C802.4	Analyze the wind and solar energy conversion systems.
13C802.5	Illustrate the various maximum power point tracking algorithms.

13C803 GE6075-PROFESSIONAL ETHICS IN ENGINEERING

13C803.1	Describe the basic perception of profession, professional ethics, various moral issues & uses of ethical theories
13C803.2	Discuss the core values that shape the ethical behavior of an engineer and Exposed awareness on professional ethics and human values.
13C803.3	Explain various issues, industrial standards, code of ethics and role of professional ethics in engineering field.
13C803.4	Aware of responsibilities of an engineer for safety and risk benefit analysis, professional rights and responsibilities of an engineer.
13C803.5	Summarize the various roles of engineers in variety of global issues and able to apply ethical principles to resolve situations that arise in their professional lives.

13C804 EE6811-PROJECT WORK

13C804.1	Use literature to identify the objective, scope and concept of the work.
13C804.2	Apply suitable Apply suitable methods and materials to carry out experiments by conserving ecosystem
13C804.3	Develop a prototype/experimental set-up necessary to complete the project
13C804.4	Discuss the results obtained to derive conclusions
13C804.5	Defend the work by preparing a report as per the University format
13C804.6	Exhibit ethical principles in engineering practices
13C804.7	Perform task as an individual and/ or team member to manage the task in time
13C804.8	Express the engineering activities with effective presentation and report.
13C804.9	Interpret the findings with appropriate technological/ research citation

HOD   **PRINCIPAL**