

COURSE OUTCOMES

R2017

Course Outcomes	
C101-HS8151/ COMMUNICATIVE ENGLISH	
C101.1	Read articles of a general kind in magazines and newspapers.
C101.2	Participate effectively in informal conversations; introduce themselves and their friends and express opinions in English
C101.3	Comprehend conversations and short talks delivered in English
C101.4	Write short essays of a general kind and personal letters and emails in English.
C101.5	Write appropriately in conversations both formal and informal.
C101.6	Apply language aptly in their professional career.
C102-MA8151/ ENGINEERING MATHEMATICS-1	
C102.1	Evaluate limit indeterminate forms, using L hospital rule.
C102.2	Calculate the maxima and minima value functions of two variables.
C102.3	Evaluate, Definite integrals using Reductions formula.
C102.4	Find the area of plain curves and volume of solid using double and triple integrals
C102.5	To have the basic knowledge of differential equation in engineering fields.
C102.6	Apply and solve physics and engineering problems.
C103-PH8151/ENGINEERING PHYSICS	
C103.1	Knowledge on the basics of properties of matter and its applications
C103.2	Concepts of waves and optical devices and their applications in fibre optics
C103.3	Adequate knowledge on the concepts of thermal properties of materials and their applications in expansion joints and heat exchangers
C103.4	Advanced physics concepts of quantum theory and its applications in tunneling microscopes
C103.5	Understand the basics of crystals, their structures and different crystal growth techniques
C103.6	Ability to understand the impact on various properties of materials that are used for engineering and industrial applications
C104-CY8151/ENGINEERING CHEMISTRY	
C104.1	Understand the main knowledge and processes for potable water and the design for basic treatment processes
C104.2	Relate basic knowledge of adsorption and catalysis
C104.3	Illustrate the phase changes of one component and two component systems and the types of alloys and their applications in industries
C104.4	Knowledge of methods to determine the calorific values of fuels, perform flue gas analysis and combustion analysis
C104.5	Analyse and identify alternative energy storage devices.

C104.6	Applying the knowledge to perform gas analysis & combustion analysis in engineering fields
C105-GE8151/ PROBLEM SOLVING AND PYTHON PROGRAMMING	
C105.1	Develop algorithmic solutions to simple computational problems.
C105.2	Demonstrate programs using simple Python statements and expressions.
C105.3	Explain control flow and functions concept in Python for solving problems.
C105.4	Use Python data structures – lists, tuples & dictionaries for representing compound data.
C105.5	Explain files, exception, modules and packages in Python for solving problems.
C106-GE8152/ENGINEERING GRAPHICS	
C106.1	Construct the conic sections, special curves and orthographic views from pictorial views and models.
C106.2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.
C106.3	Draw the projections of simple solids like prisms, pyramids, cylinder and cone.
C106.4	Design the sectional views of solids like cube, prisms, pyramids, cylinders & cones.
C106.5	Apply the principles of isometric projection of simple solids.
C106.6	Apply the principles of perspective projection of solids.
C107-GE8161/PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY	
C107.1	Develop solutions to simple computational problems using Python programs.
C107.2	Solve problems using conditionals and loops in Python.
C107.3	Develop Python programs by defining functions and calling them.
C107.4	Use Python lists, tuples and dictionaries for representing compound data.
C107.5	Develop Python programs using files.
C108-BS8161-PHYSICS AND CHEMISTRY LABORATORY	
C108.1	The student will be able to analyze the physical principle involved in the various instruments, also relate the principle to new application.
C108.2	The various experiments in the areas of elasticity, optics, mechanics and thermal physics will nurture the students in all branches of Engineering.
C108.3	The students will be able to think innovatively and also improve the creative skills that are essential for engineering.
C109-HS8251/TECHNICAL ENGLISH-II	
C109.1	Read technical texts and write area-specific texts effortlessly.
C109.2	Comprehend lectures in their area of specialization successfully.
C109.3	Write various reports as per the requirement of the professional career.
C109.4	Speak effectively in varied formal and informal contexts.
C109.5	Communicate professionally to solve the technical issues.
C109.6	Prepare job application, instructions, and recommendations confidently.
C110-MA8251/MATHEMATICS-II	
C110.1	To Transform many problems into simultaneous equations and their solutions can easily to find with matrices.
C110.2	Apply the vector concepts of vector calculus in engineering disciplines
C110.3	Understand the standard techniques of complex variable theory and use them to solve

	core engineering problems.
C110.4	Evaluate real integrals by applying concept of complex integration.
C110.5	Understand and apply the knowledge of Laplace transform in solving ordinary differential equation..
C110.6	To have a knowledge in basic telephone engineering field.
C111-PH253/PHYSICS FOR ELECTRONICS ENGINEERING	
C111.1	Gain knowledge on classical and quantum electron theories, and energy band structures.
C111.2	Acquire knowledge on basics of semiconductor physics and its applications in various devices
C111.3	Get knowledge on magnetic and dielectric properties of materials
C111.4	Have the necessary understanding on the functioning of optical materials for optoelectronics
C111.5	Understand the basics of quantum structures and their applications in spintronics and carbon electronics
C111.6	Ability to fabricate new type of engineering materials for the industrial applications
C112-BE8252- BASIC CIVIL AND MECHANICAL ENGINEERING	
C112.1	Explain the working principles of various power plants, pumps and turbines.
C112.2	State the functions of IC engine and types of boilers.
C112.3	Apply the principles of vapour absorption and compression systems.
C112.4	Apply the principles of surveying and use various measurements using engineering materials and leveling instruments.
C112.5	Classify the types of bridges, foundation, floorings, roofs and plasters.
C112.6	Explain the R.C.C structural members and state the purpose of dam.
C113-EE8251/CIRCUIT THEORY	
C113.1	Able to Illustrate the basic laws and series & parallel circuits.
C113.2	Solve Network reduction & source transformation technique for complex circuits.
C113.3	Able to analyze Series & parallel circuit parameters and Self & mutual inductance.
C113.4	Analyze the transient response of RL, RC and RLC Circuits using Laplace transform
C113.5	Able to solve three phase balanced / unbalanced voltage sources with star and delta connected loads,
C113.6	Solve complex circuits and Transient response.
C114-GE8291/ ENVIRONMENTAL SCIENCE AND ENGINEERING	
C114.1	Understand the values, threats and conservation of biodiversity and classify various ecosystems.
C114.2	Identify and implement technological and eco solutions to environmental problems
C114.3	Develop the knowledge on various natural resources, their causes and their effects
C114.4	Understand various environmental acts and disaster management.
C114.5	Relate population and environment and the role of IT in environment and human health.
C114.6	Analyze the impact of environment integrated themes and social issues
C115-GE8261/ ENGINEERING PRACTICES LABORATORY	
C115.1	Ability to fabricate electrical and electronics circuits
C115.2	Acquiring the knowledge about various types of wiring circuit, wiring tools, wiring estimation and cost.

C115.3	Understand the knowledge about bread board assembling, need of earthing.
C115.4	Recognize electrical Quantities of V, I & PF in RLC and Energy in Single Phase Energy meter.
C115.5	Gain the knowledge about Logic Gates and Electronic components.
C115.6	Acquiring the knowledge about HWR & FWR with ripple factor & test for generation of clock signal.

C116-EE8261/ELECTRIC CIRCUITS LABORATORY

C116.1	Apply KCL, KVL and Network Theorems to Simple and Complex circuits.
C116.2	Demonstrate the working of CRO and time constant of RC circuit.
C116.3	Simulate frequency response of RLC series and parallel resonant circuits.
C116.4	Determine the power in three phase balanced and unbalanced circuits by two wattmeter methods.
C116.5	Determine h-parameters of Two port networks.
C116.6	Calibrate single phase energy meter.

C201-MA8353/TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS

C201.1	Apply the Fundamental concept of Partial Differential Equations.
C201.2	To develop Fourier Series for different types of functions.
C201.3	Find the solutions of the heat equation, wave equation and the Laplace equation subject to boundary conditions
C201.4	To solve the Problems using Fourier Transforms and its inverse Transforms.
C201.5	Determine the Z- transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.
C201.6	Understand the applications of each topic.

C202-EE8351/DIGITAL LOGIC CIRCUITS

C202.1	Develop a digital logic and apply it to solve real life problems.
C202.2	Analyze, design and implement combinational logic circuits.
C202.3	Classify different semiconductor memories.
C202.4	Analyze, design and implement sequential logic circuits.
C202.5	Analyze digital system design using PLD.
C202.6	Simulate and implement combinational and sequential circuits using VHDL systems.

C203-EE8391/ELECTROMAGNETIC THEORY

C203.1	Understand the basic mathematical concepts related to electromagnetic vector fields.
C203.2	Understand the basic concepts about electrostatic fields, electrical potential, energy density and their applications.
C203.3	Acquire the knowledge in magneto static fields, magnetic flux density, vector potential and its applications.
C203.4	Understand the different methods of emf generation and Maxwell's equations
C203.5	Understand the basic concepts electromagnetic waves and characterizing parameters
C203.6	Apply the Electromagnetic field theory for design of electrical systems

C204-EE8301/ ELECTRICAL MACHINES - 1

C204.1	Explain the significance of magnetic-circuits and different losses occurring in them
C204.2	Describe the knowledge in constructional details of transformers and its performance.
C204.3	Understand the concepts of electromechanical energy conversion.
C204.4	Demonstrate the working principle of various types of DC Generator and its losses.

C204.5	Illustrate the working principle of various types of DC Motor and its losses.
C204.6	Classify the knowledge in various losses taking place in D.C. Machines.
C205-EC8353/ELECTRON DEVICES AND CIRCUITS	
C205.1	Explain the structure and working of basic electronic devices.
C205.2	Identify the characteristics of current and voltage controlled devices.
C205.3	Differentiate the characteristics of transistor families.
C205.4	Choose the required components to construct an amplifier circuit.
C205.5	Employ the acquired knowledge in design and analysis of oscillators.
C205.6	Illustrate the operation and applications of electronic devices.
C206- ME8792/POWER PLANT ENGINEERING	
C206.1	Discuss the layout of modern coal power plant and various components used in thermal power plant.
C206.2	Identify the components of diesel and gas turbine power plants.
C206.3	Describe the layout of subsystems of various nuclear power plants and safety measures for nuclear power plants.
C206.4	Distinguish different hydroelectric power plants.
C206.5	Calculate the per unit cost of electrical energy based on Power tariff, load factor, demand factor, diversity factor and plant safety factor.
C206.6	Construct various renewable energy power plants such as wind, tidal, PV, solar, thermal, geo thermal, biogas and fuel cell.
C207- EC8311/ELECTRONICS LABORATORY	
C207.1	Discuss the various types of diodes and its v-i characteristics.
C207.2	Construct the various types of transistors and draw its v-i characteristics.
C207.3	Demonstrate the classifications of amplifier.
C207.4	Categorize about filter circuits and multivibrators.
C207.5	Describe the working of feedback amplifiers and oscillator circuits.
C207.6	Ability to construct the different types of electronic circuits and its characteristics.
C208 – EE8311/ELECTRICAL MACHINES LABORATORY – I	
C208.1	Explain the characteristics of dc shunt generator and calculation of critical field resistance value.
C208.2	Examine the load characteristics of dc shunt, dc compound motors and its efficiency.
C208.3	Predict the efficiency of dc shunt machine in different methods.
C208.4	Explain the load characteristics of single phase and three phase transformer.
C208.5	Separate the different parameters of dc machines like losses, efficiency.
C208.6	Predetermine the equivalent circuit parameters of single phase transformer in two different methods.
C209-MA8491/ NUMERICAL METHODS	
C209.1	Find Eigen values and Eigen vectors of a given matrix by power method.
C209.2	To make effective use of the interpolation formulas to find the missing data using the given data.
C209.3	Apply the techniques of solving any algebraic, transcendental equations
C209.4	Distinguish among the criteria of selection and procedures of various Numerical rules.
C209.5	Apply various numerical methods in solving an initial value problem involving an ordinary differential equation.

C209.6	Estimate the best fit polynomial for the given tabulated data using the methods of Newton's interpolation and Lagrange's interpolation.
C210-EE8401/ ELECTRICAL MACHINES – II	
C210.1	Determine the conditions for synchronization of synchronous generators.
C210.2	Calculate the performance of synchronous motor.
C210.3	Describe the starting methods of induction machines.
C210.4	Discuss the speed control of three-phase induction motors.
C210.5	Explain the various methods of starting of single phase induction motor.
C210.6	Model and analyze electrical apparatus and their application to power system.
C211- EE8402/TRANSMISSION AND DISTRIBUTION	
C211.1	Identify the basic elements of the electric power system, generation, transmission, distribution and describe the role played by each element.
C211.2	Compute the losses, efficiency and parameters of the Transmission line.
C211.3	Discuss the Performance of Transmission Lines.
C211.4	Solve the voltage distribution in insulator strings, cables and methods to improve the same.
C211.5	Design overhead lines both Mechanical and electrical aspects using Sag calculation.
C211.6	Illustrate the power system operation, stability, control and protection.
C212- EE8403/MEASUREMENTS AND INSTRUMENTATION	
C212.1	Identify the basic block elements in measuring instruments.
C212.2	Explain the significance of electrical and magnetic instruments.
C212.3	Demonstrate the working of various bridge circuits..
C212.4	Choose the suitable display devices for different applications.
C212.5	Illustrate the function of different blocks involved in DAS.
C212.6	Compare the performance of electrical and electronic instruments.
C213- LINEAR INTEGRATED CIRCUITS AND APPLICATIONS	
C213.1	Explain the procedure for the fabrication of IC
C213.2	Summarize the DC & AC characteristics of Operational amplifier.
C213.3	Discuss the applications of Operational amplifier
C213.4	Describe the internal functional blocks of special ICs like Timer and PLL
C213.5	Classify types of voltage regulators and describe the special ICs
C213.6	Ability to understand and analyse, linear and digital electronic circuits.
C214-IC8451 CONTROL SYSTEMS	
C214.1	Identify the various control system components and their representations
C214.2	Analyze the various time domain parameters.
C214.3	Analyze the various frequency response plots
C214.4	Apply the concepts of various system stability criterions
C214.5	Design various transfer functions of digital control system using state variable models
C214.6	Design the compensation technique that can be used to stabilize control systems
C215- EE8411/ELECTRICAL MACHINES LABORATORY - II	
C215.1	To determine the regulation of three phase alternators.
C215.2	To determine the load test on three phase induction motor.
C215.3	To determine the no load and blocked rotor test on three phase motors.
C215.4	To find out the separation of no load losses of three phase induction motor.
C215.5	To determine the load test on single phase induction motor.

C215.6	Develop the model of electrical apparatus and their application in power systems.
C216- EE8461/LINEAR AND DIGITAL INTEGRATED CIRCUITS LABORATORY	
C216.1	Implement adder, subtractor circuits and conversions using Boolean functions.
C216.2	Test Parity generator and checker circuits.
C216.3	Demonstrate 4 bit synchronous, asynchronous counter and Shift registers
C216.4	Illustrate the multiplexer and demultiplexer circuits.
C216.5	Construct Adder, comparator, differentiator and integrator using Op-amp.
C216.6	Understand the comparison between linear and digital electronic circuits.
C217- EE8412/TECHNICAL SEMINAR	
C217.1	Present seminar in the field of electrical and electronics engineering subjects studied.
C217.2	Solve objective type questions in the field of electrical and electronics engineering.
C217.3	Communicate effectively, the subjects learned in the form of seminar presentation.
C217.4	Communicate effectively, the modern trends in the field of electrical and electronics engineering.
C217.5	Discuss technical interviews effectively with proper documents.
C217.6	Ability to review, prepare and present technological developments.
C301- EE8501/POWER SYSTEM ANALYSIS	
C301.1	Explain the model of power system under steady state condition using per unit diagram.
C301.2	Apply efficient numerical methods to solve power flow problems
C301.3	Illustrate the networks in terms of symmetrical component sequence networks.
C301.4	Illustrate the fault condition in sequence networks.
C301.5	Compute the transient behaviour of power system.
C301.6	Analyse stability during fault, prefault and post fault conditions.
C302- EE8551/MICROPROCESSORS AND MICROCONTROLLERS	
C302.1	Describe the basic Architecture of 8085 Microprocessor with working of all blocks of the processor, IO and memory interfacing with necessary timing diagrams.
C302.2	Classify the instructions with the help of Addressing modes of 8085 with necessary programs.
C302.3	Explain the basic Architecture of 8051 Microcontroller with working of various blocks of the controller with necessary timing diagram.
C302.4	Explain the architecture of various interfacing devices like 8255 PPI, 8259 PIC, 8251 USART, 8279, 8253
C302.5	Analyze the architecture of various Interfacing Devices like ADC and DAC and Programming of all the Interfacing IC's.
C302.6	Apply the knowledge of programming concepts of 8051 Microcontroller for various applications.
C303- EE8552/POWER ELECTRONICS	
C303.1	Explain the significance of switching devices and its application of power converters.
C303.2	Compare the operation of two, three Pulse Converters and output waveforms with and without source and load inductance.
C303.3	Classify the operation of Choppers and applications of SMPS.
C303.4	Explain the operation of single phase and three phase Inverters with and without load.
C303.5	Illustrate the operation of cycloconverter and its application.

C303.6	Discuss the operation of AC voltage controller and its application.
C304 – EE8591/DIGITAL SIGNAL PROCESSING	
C304.1	Classify the different types of signals and systems.
C304.2	Apply z-transform and inverse Z transform of discrete time systems.
C304.3	Apply Radix-2 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	Understand the sampling conversion technique in signal processing and its applications.
C304.6	Explain the various architectures of Digital signal processors
C305- CS8392/ OBJECT ORIENTED PROGRAMMING	
C305.1	Gain the basic knowledge on object oriented concepts
C305.2	Ability to implement features of object oriented programming to solve real world problems.
C305.3	Discuss the suitable test to validate the programs with exception handling mechanism.
C305.4	Apply to evaluate the concept of overloading.
C305.5	Develop the concept of java in creating classes, objects using arrays and control statements.
C305.6	Create packages, handle exceptions and multi-threaded programs.
C306- OCE551 Air Pollution and Control Engineering	
C306.1	An Understand of the nature and characteristics of the air pollutants and noise pollutants.
C306.2	Understand the basic concepts of air quality management.
C306.3	Select appropriate equipments to control the pollutants
C306.4	Capability to monitor the air quality standards for Environmental Impact Assessment
C306.5	Identify the noise pollution problems.
C306.6	Design stacks and particulate air pollution control devices to meet applicable standards.
C307- EE8511/CONTROL AND INSTRUMENTATION LABORATORY	
C307.1	Analyze the stability of the control system by (i) Bode plot (ii) Root Locus Plot and (iii) Nyquist plot using MATLAB
C307.2	Design the Lag, Lead and Lag-Lead Compensators for the given specifications.
C307.3	Determine the Characteristics of Synchro-Transmitter- Receiver and its simulation.
C307.4	Calculate the unknown Capacitance, Inductance and Resistance using AC and DC Bridges experimentally.
C307.5	Measure the Power and Energy in AC and DC circuits.
C307.6	Analyze the Signal Conditioning units (a) Instrumentation Amplifier (b) ADC and DACs and its simulation.
C308- HS8581/PROFESSIONAL COMMUNICATION	
C308.1	Apply appropriate communication skills across settings, purposes and audiences.
C308.2	Demonstrate knowledge of communication theory and applications.
C308.3	Practice critical thinking to develop innovative and well-founded perspectives related to the students emphasis.
C308.4	Use technology to communicate effectively in various settings and contexts.

C308.5	Demonstrate appropriate and professional ethical behavior.
C308.6	Build and maintain healthy and effective relationships.
C309- CS8383/OBJECT ORIENTED PROGRAMMING LABORATORY	
C309.1	Design C++ programs using functions, classes with objects, member functions and constructors.
C309.2	Develop operator and function overloading and run time polymorphism using C++.
C309.3	Develop file handling techniques in C++ for sequential and random access also use Java code for strings.
C309.4	Construct packages and interfaces in Java.
C309.5	Create threads in Java and handle predefined and user defined exceptions.
C309.6	Develop file handling techniques use Java code for strings.