

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

COURSE OUTCOMES (CO)

Year / Sem: I/I

Course Code: HS8151 / C101

Course: COMMUNICATIVE ENGLISH

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C101.1	Understand and Apply	Read articles of a general kind in magazines and newspapers.
C101.2	Understand ,Apply and Creation	Participate effectively in informal conversations; introduce themselves and their friends and express opinions in English.
C101.3	Understand and Apply	Comprehend conversations and short talks delivered in English
C101.4	Understand and Creation	Write short essays of a general kind and personal letters and emails in English.
C101.5	Creation and Analyze	Build a writing skills in a proper way, which help the students to understand writing rules needed to succeed in writing

Year / Sem: I/I

Course Code: MA8151 / C102

Course: ENGINEERING MATHEMATICS -I

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C102.1	Apply	Use both the limit definition and rules of differentiation to differentiate functions and apply differentiation to solve maxima and minima problems
C102.2	Analyze	Solve the partial differentiation problems related to engineering applications.
C102.3	Evaluate	Evaluate integrals using techniques of integration, such as substitution, partial fractions and integration by parts.
C102.4	Evaluate	Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables and also determine convergence/divergence of improper integrals
C102.5	Analyze	Apply various techniques in solving differential equations related to engineering applications.

Year / Sem: I/I

Course Code:PH8151 / C103

Course: ENGINEERING PHYSICS

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C103.1	Understand	comprehend the important elastic properties of materials
C103.2	Understand	explain the concept of waves and optical devices and their applications in fibre optics
C103.3	Apply	explain basic concepts of thermal properties of materials and their applications in expansion joints and heat exchangers.
C103.4	Apply	understand advanced physics concepts of quantum theory and its applications in tunnelling microscopes
C103.5	Apply	explain the basics of crystals and their structures and use different crystal growth techniques

Year / Sem: I / I

Course Code: CY8151 / C104

Course: ENGINEERING CHEMISTRY

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C104.1	Understand and Apply	Students Can gain knowledge about, The quality parameters of water and purification methods
C104.2	Understand	Apply the knowledge of absorbent and catalysis
C104.3	Knowledge	Get the knowledge about importance of alloying and phase rule
C104.4	Apply	Ability to analysis the different types of constituents of fuels and their properties.
C104.5	Understand and Apply	To gain knowledge about conventional and non-conventional energy resources and their importance.

Year / Sem: I / I

Course Code:GE8151 / C105

Course: PROBLEM SOLVING AND PYTHON PROGRAMMING

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C105.1	Understand and Apply	Understand and develop algorithmic solutions to simple computational problems.
C105.2	Apply	Analyze programs using simple Python statements and expressions.
C105.3	Apply	Explain control flow and functions concept in Python for solving problems.
C105.4	Apply	Apply Python data structures - lists, tuples & dictionaries for representing compound data.
C105.5	Evaluate	Evaluate files, exception, modules and packages in Python for solving problems.

Year / Sem: I / I

Course Code:GE8151 / C106

Course: Engineering Graphics

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C106.1	Understand	Familiarize with the fundamentals and standards of engineering graphics
C106.2	Creative	Perform freehand sketching of basic geometrical constructions and multiple views of objects.
C106.3	Creative	Project orthographic projections of lines and plane surfaces
C106.4	Creative	Draw projections and solids and development of surfaces
C106.5	Understand	Visualize and to project isometric and perspective sections of simple solids

Year / Sem: I/ I

Course Code:GE8161 / C107

Course: Problem Solving and Python Programming Laboratory

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C107.1	Understand and Apply	Write, test, and debug simple Python programs.
C107.2	Understand, Apply and Analyze	Implement Python programs with conditionals and loops.
C107.3	Creating	Develop Python programs step-wise by defining functions and calling them.
C107.4	Understand and Apply	Use Python lists, tuples, dictionaries for representing compound data.
C107.5	Understand and Apply	Read and write data from/to files in Python.

Year / Sem: I/ I

Course Code: BS8161 / C108

Course: Physics and Chemistry Laboratory

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C108.1	Evaluating	The students will be outfitted with hands on knowledge
C108.2	Creating	To analysis chemicals quantitatively.
C108.3	Applying	To analysis water quality parameter
C108.4	Understanding	To apply the basics physics principles of light and sound to evaluate its properties.
C108.5	Remembering	To apply the basics physics principles of thermal physics to evaluate engineering properties of materials.

Year / Sem: I/ II

Course Code: HS8251 / C109

Course: Technical English

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C109.1	Understand and Apply	Read technical texts and write area- specific texts effortlessly.
C109.2	UnderstandApply and Creation	Listen and comprehend lectures and talks in their area of specialisation successfully.
C109.3	Understand and Apply	Speak appropriately and effectively in varied formal and informal contexts.
C109.4	Understand and Apply	Write reports and winning job applications..
C109.5	Creation and Analyze	To expatiate with self-reliance to the global community and to get involved in industrialism globalized market.

Year / Sem: I/ II

Course Code:MA8251 / C110

Course: Engineering Mathematics II

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C110.1	Understand and Apply	Eigenvalues and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.
C110.2	Understand and Apply	Gradient, divergence and curl of a vector point function and related identities.
C110.3	Understand and Apply	Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.
C110.4	Understand and Apply Creation	Analytic functions, conformal mapping and complex integration.
C110.5	Creation and Analyze	Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.

Year / Sem: I/ II

Course Code:PH8253 / C111

Course: Physics for Electronics Engineering

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C111.1	Understand	Gain knowledge on classical and quantum electron theories, and energy band structures
C111.2	Understand	Acquire knowledge on basics of semiconductor physics and its applications in various devices
C111.3	Understand	Get knowledge on magnetic and dielectric properties of materials,
C111.4	Understand	Have the necessary understanding on the functioning of optical materials for optoelectronics,
C111.5	Understand	Understand the basics of quantum structures and their applications in spintronics and carbon electronics.

Year / Sem: I/ II

Course Code:BE8254 / C112

Course: Basic Electrical and Instrumentation Engineering

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C112.1	Analyze	Analyze the Electrical Circuits
C112.2	Understand	Understand the various types of Electrical machines
C112.3	Understand	Understand the utilization of electrical power
C112.4	Understand	Understand and develop various types of Electronic Circuits
C112.5	Analyze	Analyze the various types of Electrical measurements

Year / Sem: I/ II

Course Code:EC8251 / C113

Course:Circuit Analysis

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C113.1	Analyzing	Develop the capacity to analyze the Electrical Circuits
C113.2	Understand, Analyzing	Ability to apply circuit theorem in real time
C113.3	Understand, Analyzing and Creating	Design, Understand and Evaluate AC and DC Circuits
C113.4	Remember, Apply and Analyzing	Analyze the Transient response of simple electric circuits.
C113.5	Understand, Analyzing and Creating	Ability to synthesize two port networks.

Year / Sem: I/ II

Course Code:EC8252 / C114

Course:Electronic Devices

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C114.1	Remembering	To learn about PN junction diode characteristics.
C114.2	Understand	To Understand the various configuration of BJT.
C114.3	Understand	To understand the concepts of FET.
C114.4	Remembering	To learn about the special semiconductor devices.
C114.5	Remembering	To study about the various power devices and display devices.

Year / Sem: I/ II

Course Code:EC8261 / C115

Course: Circuits and Devices Laboratory

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C115.1	Analyzing	Analyze the characteristics of basic electronic devices
C115.2	Creating	To Design RL circuits.
C115.3	Creating	To Design RC circuits
C115.4	Analyzing and Understanding	To Verify Thevinin & Norton theorem
C115.5	Analyzing and Understanding	To Verify KVL & KCL, and Super Position Theorems

Year / Sem: I/ II

Course Code:GE8261 / C116

Course:Engineering Practices Laboratory

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C116.1	Creating	Fabricate carpentry components and pipe connections
C116.2	creating	Make the models using sheet metal works
C116.3	Creating	Carry out basic home electrical works and appliances
C116.4	Understand	Measure the electrical quantities.
C116.5	Creating	Elaborate on the components, gates, soldering practices.

Year / Sem: II / III

Course Code:MA8352/C201

Course: Linear Algebra and partial Differential Equations

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C201.1	Analyze	Explain the fundamental concepts of advanced algebra and their role in modern mathematics and applied contexts.
C201.2	Analyze& Evaluate	Demonstrate accurate and efficient use of advanced algebraic techniques.
C201.3	Analyze& Evaluate	Demonstrate their mastery by solving non - trivial problems related to the concepts and by proving simple theorems about the statements proven by the text.
C201.4	Evaluate	Able to solve various types of partial differential equations
C201.5	Understand	Able to solve engineering problems using Fourier series.

Year / Sem: II / III

Course Code: EC8393/C202

Course: Fundamentals of Data structures in C

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C202.1	Apply	Implement linear and non-linear data structure operations using C
C202.2	Analyze	Suggest appropriate linear / non-linear data structure for any given data set.
C202.3	Apply	Apply hashing concepts for a given problem
C202.4	Understand	Modify or suggest new data structure for an application
C202.5	Understand	Appropriately choose the sorting algorithm for an application

Year / Sem: II / III

Course Code: EC8351/ C203

Course: Electronics Circuits -1

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C203.1	Understand, Apply, Analysis & Evaluate	Students will be able to do the analysis and design the BJT,JFET and MOSFET
C203.2	Understand &Apply	Students will be able to design differential amplifier
C203.3	Understand &Apply	Small signal analysis of MOSFET in problem solving
C203.4	Understand, Apply, Analysis & Evaluate	Explain Low frequency and high frequency analysis, Miller effect in electronic systems.
C203.5	Remember, Understand &Apply	Students will be able to utilize power supply devices in various applications.

Year / Sem: II / III

Course Code: EC8352/C204

Course: Signals and Systems

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C204.1	Understanding	To be able to determine if a given system is linear/causal/stable
C204.2	Analyze	Capable of determining the frequency components present in a deterministic signal
C204..3	Analyze	Capable of characterizing LTI systems in the time domain and frequency domain
C204.4	Evaluating	To be able to compute the output of an LTI system in the time and frequency domains
C204.5	Analyze	Analyze discrete time LTI systems using Z transform and DTFT

Year / Sem: II / III

Course Code: EC8392/C205

Course: Digital Electronics

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C205.1	Apply	Use digital electronics in the present contemporary world
C205.2	Create	Design various combinational digital circuits using logic gates
C205.3	Analyze & Create	Do the analysis and design procedures for synchronous and asynchronous sequential circuits

C205.4	Apply	Use the semiconductor memories and related technology
C205.5	Apply	Use electronic circuits involved in the design of logic gates

Year / Sem: II / III

Course Code: EC8391/C206

Course: Control Systems Engineering

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C206.1	Understand	Identify the various control system components and their representations.
C206.2	Analyze	Analyze the various time domain parameters.
C206.3	Analyze	Analysis the various frequency response plots and its system.
C206.4	Apply	Apply the concepts of various system stability criterions.
C206.5	Evaluate	Design various transfer functions of digital control system using state variable models.

Year / Sem: II / III

Course Code: EC8381/C207

Course: Fundamentals of Data structures in C Laboratory

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C207.1	Understand	Write basic and advanced programs in C
C207.2	Apply	Implement functions and recursive functions in C
C207.3	Apply	Implement data structures using C
C207.4	Understand	Choose appropriate sorting algorithm for an application
C207.5	Create	Choose appropriate sorting algorithm to implement it in a modularized way

Year / Sem: II / III

Course Code: EC8361/C208

Course: Analog and Digital Circuits Laboratory

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C208.1	Creating	Design and Test rectifiers, filters and regulated power supplies
C208.2	Creating	Design and Test BJT/JFET amplifiers.
C208.3	Analyze	Differentiate cascode and cascade amplifiers.
C208.4	Analyze	Measure CMRR in differential amplifier
C208.5	Creating	Design and Test the digital logic circuits.

Year / Sem: II / IV

Course Code:MA8451/ C210

Course: Probability and Random Processes

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C210.1	Understand and Apply	Understand the fundamental knowledge of the concepts of probability and have knowledge of standard distributions which can describe real life phenomenon.
C210.2	Understand and Apply	Understand the basic concepts of one and two dimensional random variables and apply in engineering applications.
C210.3	Apply	Apply the concept random processes in engineering disciplines.
C210.4	Understand and Apply	Understand and apply the concept of correlation and spectral densities.
C210.5	Understand and Evaluate	The students will have an exposure of various distribution functions and help in acquiring skills in handling situations involving more than one variable. Able to analyze the response of random inputs to linear time invariant systems.

Year / Sem: II / IV

Course Code: EC8452/C211

Course: Electronic Circuits II

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C211.1	ANALYZING	Analyze different types of amplifier, oscillator and multivibrator circuits
C211.2	CREATING	Design BJT amplifier and oscillator circuits
C211.3	ANALYZING	Analyze transistorized amplifier and oscillator circuits
C211.4	CREATING & ANALYZING	Design and analyze feedback amplifiers
C211.5	CREATING	Design LC and RC oscillators, tuned amplifiers, wave shaping circuits, multivibrators, power amplifier and DC convertors

Year / Sem: II / IV

Course Code:EC8491/ C212

Course: Communication Theory

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C212.1	Understand	Students will be able to Design AM communication systems
C212.2	Understand	Students will be able to Design Angle modulated communication systems
C212.3	Apply	Students will be able to Apply the concepts of Random Process to the design of Communication systems
C212.4	Evaluate	Students will be able to Analyze the noise performance of AM and FM systems
C212.5	Knowledge	Students will be able to Gain knowledge in sampling and quantization.

Year / Sem: II / IV

Course Code:EC8451/ C213

Course: Electromagnetic Fields

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C213.1	Understanding	Display an understanding of fundamental electromagnetic laws and concepts
C213.2	Understanding	Write Maxwell's equations in integral, differential and phasor forms and explain their physical meaning
C213.3	Understanding	Explain electromagnetic wave propagation in lossy and in lossless media
C213.4	Analyze	Solve simple problems requiring estimation of electric field quantities based on these concepts and laws
C213.5	Analyze	Solve simple problems requiring estimation of magnetic field quantities based on these concepts and laws

Year / Sem: II / IV

Course Code: EC8453/C214

Course: Linear Integrated Circuits

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C214.1	Create	Design linear and non linear applications of OP – AMPS
C214.2	Create	Design applications using analog multiplier and PLL
C214.3	Create	Design ADC and DAC using OP – AMPS
C214.4	Create	Generate waveforms using OP – AMP Circuits
C214.5	Analyze	Analyze special function ICs

Year / Sem: II / IV

Course Code: GE8291/C215

Course: Environmental Science and Engineering

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C215.1	Understanding	Environmental Pollution or problems cannot be solved by mere laws. Public participation is an important aspect which serves the environmental Protection. One will obtain knowledge on the following after completing the course.
C215.2	Understanding	Public awareness of environmental is at infant stage.
C215.3	Understanding	Ignorance and incomplete knowledge has lead to misconceptions
C215.4	Understanding	Development and improvement in std. of living has lead to serious environmental disasters
C215.5	Understanding	Human population and its effect on environment

Year / Sem: II / IV

Course Code: EC8461/C216

Course: Circuits Design and Simulation Laboratory

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C216.1	Analyzing	Analyze various types of feedback amplifiers.
C216.2	Creating	Design of oscillators and tuned amplifiers.
C216.3	Creating	Design of wave-shaping circuits and multivibrators.
C216.4	Creating	Design and simulate feedback amplifiers, oscillators and tuned amplifiers using SPICE Tool
C216.5	Creating	Design and simulate wave-shaping circuits and multivibrators using SPICE Tool

Year / Sem: II / IV

Course Code:EC8462/C217

Course: Linear Integrated Circuit Laboratory

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C217.1	Creating	Design amplifiers, oscillators, D-A converters using operational amplifiers.
C217.2	Creating	Design filters using op-amp and performs an experiment on frequency response.
C217.3	Analyzing	Analyze the working of PLL and describe its application as a frequency multiplier.
C217.4	Creating	Design DC power supply using ICs.
C217.5	Analyzing	Analyze the performance of filters, multivibrators, A/D converter and analog multiplier using SPICE.

Year / Sem: III / V

Course Code:EC8501/C301

Course: DIGITAL COMMUNICATION

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C301.1	Analyze	To learn about PCM systems and its characteristics
C301.2	Understand and Apply	Design and implement base band transmission schemes
C301.3	Understand and Apply	Implement and design band pass signaling schemes
C301.4	Analyze	Analyze the spectral characteristics of band pass signaling schemes and their noise performance
C301.5	Understand	To study about the various error control coding schemes

Year / Sem: III / V

Course Code: EC8553 / C302

Course: Discrete time Signal Processing

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C302.1	Applying	Apply DFT for the analysis of digital signals and system
C302.2	Creating	Design IIR and FIR filters
C302.3	Understand and Analyze	Characterize the effects of finite precision representation on digital filters
C302.4	Creating	Design multirate filters
C302.5	Understand and Apply	Apply adaptive filters appropriately in communication systems

Year / Sem: III/ VI

Course Code: EC8552/C303

Course: Computer Architecture and Organization

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C303.1	Analyze	Analyse and Describe data representation, instruction formats and the operation of a digital computer
C303.2	Evaluating	Illustrate the fixed point and floating-point arithmetic for ALU operation
C303.3	Understand and Apply	Discuss about implementation schemes of control unit and pipeline performance
C303.4	Analyze	Explain the concept of various memories, interfacing and organization of multiple processors
C303.5	Understand	Discuss parallel processing technique and unconventional architectures.

Year / Sem: III / V

Course Code: EC8551/C304

Course: Communication Networks

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C304.1	Apply	Identify the components required to build different types of networks
C304.2	Creating	Discuss the required functionality at data link layer for an application.
C304.3	Analyze	Analyze the routing path of network.
C304.4	Understanding	Sketch the solution for functionalities of transport layer protocol.
C304.5	Creating	Discuss the protocols in the application layer.

Year / Sem: III / V

Course Code: EC8073/C305

Course: Medical Electronics

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C305.1	Understanding and Remembering	Know the human body electro- physiological parameters and recording of bio-potentials
C305.2	Understanding and Analyzing	Comprehend the non-electrical physiological parameters and their measurement – body temperature, blood pressure, pulse, blood cell count, blood flow meter etc.
C305.3	Applying	Interpret the various assist devices used in the hospitals viz. pacemakers, defibrillators, dialyzers and ventilators
C305.4	Understanding and Analyzing	Comprehend physical medicine methods eg. ultrasonic, shortwave, microwave surgical diathermies , and bio-telemetry principles and methods
C305.5	Understanding	Know about recent trends in medical instrumentation

Year / Sem: III / V

Course Code:ORO551/C306

Course: Renewable energy Sources

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C306.1	Understand	Understand the physics of solar radiation
C306.2	Understand and Apply	Classify the solar energy collectors and methodologies of storing solar energy.
C306.3	Understand and Apply	Knowledge in applying solar energy in a useful way.
C306.4	Understand and Analyze	Knowledge in wind energy and biomass with its economic species.
C306.5	Understand and Apply	Knowledge in capturing and applying in other forms of energy sources like wind, biogas and geothermal energies

Year / Sem: III / V

Course Code:EC8562/ C307

Course: Digital Signal Processing Laboratory

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C307.1	Understand	Understand and carryout basic signal processing operations
C307.2	Understand and Apply	Demonstrate their abilities towards MATLAB based implementation of various DSP systems
C307.3	Understand and Analyze	Analyze the architecture of a DSP Processor
C307.4	Creating	Design and Implement the FIR and IIR Filters in DSP Processor for performing filtering operation over real-time signals
C307.5	Creating	Design a DSP system for various applications of DSP

Year / Sem: III / V

Course Code:EC8561/ C308

Course: Communication Systems Laboratory

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C308.1	Applying	Simulate end-to-end Communication Link
C308.2	Applying	Demonstrate their knowledge in base band signaling schemes through implementation of FSK, PSK and DPSK
C308.3	Applying	Apply various channel coding schemes & demonstrate their capabilities towards the improvement of the noise performance of communication system
C308.4	Applying	Simulate & validate the various functional modules of a communication system
C308.5	Applying	Apply various techniques in solving communication problems

Year / Sem: III / V

Course Code: EC8563/C309

Course: Communication Networks Laboratory

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C309.1	Understanding	Communicate between two desktop computers
C309.2	Applying	Implement the different protocols
C309.3	Evaluating	Program using sockets.
C309.4	Applying	Implement and compare the various routing algorithms
C309.5	Evaluating	Use the simulation tool.

Year / Sem: III / VI

Course Code:EC8691/C310

Course: Microprocessors and microcontrollers

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C310.1	Understand	To understand the Architecture of 8086 microprocessor.
C310.2	Understand	To learn the design aspects of I/O and Memory Interfacing circuits.
C310.3	Remembering and Analyze	To interface microprocessors with supporting chips
C310.4	Understanding	To study the Architecture of 8051 microcontroller.
C310.5	Creating	To design a microcontroller based system

Year / Sem: III / VI

Course Code:EC8095/C311

Course: VLSI Design

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C311.1	Analyze	Analyze the concepts of digital building blocks using MOS transistor.
C311.2	Creating	Design combinational MOS circuits and power strategies
C311.3	Creating	Design and construct Sequential Circuits and Timing systems.
C311.4	Creating	Design arithmetic building blocks and memory subsystems
C311.5	Applying	Apply and implement FPGA design flow and testing

Year / Sem: III / VI

Course Code:EC8652/C312

Course: Wireless Communication

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C312.1	Remember, Understand, Apply & Analyzing	Characterize a wireless channel and evolve the system design specifications
C312.2	Understand, Creating & Analyzing	Design a cellular system based on resource availability and traffic demands
C312.3	Understand	Identify suitable signaling
C312.4	Analyze	Multipath mitigation techniques for the wireless channel and system under consideration.
C312.5	Understand	MIMO Systems and analyze their performance

Year / Sem: III / VI

Course Code:MG8591/C313

Course: Principles of management

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C313.1	Understand	Explain the managerial roles in local and global organization, environmental factors & strategies for International business
C313.2	Understand and Apply	Describe the planning process & benefits of MBO and prescribe the decision making model under different conditions.
C313.3	Understand	Illustrate the different organization structure, Line & staff authority, staff selection & career development and performance appraisal process.
C313.4	Analyze	Demonstrate the creativity, innovation and leadership styles through the principles of effective communication and organization culture.
C313.5	Understand	Explain the process of control authority, budget preparation, productivity measurement and planning operations in management.

Year / Sem: III / VI

Course Code:EC8651/C314

Course: Transmission lines and Rf systems

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C314.1	Understand	Ability to understand the characteristics of transmission lines and its losses
C314.2	Analyze	Write about the standing wave ratio and input impedance in high frequency transmission lines
C314.3	Analyze	Analyze impedance matching by stubs using smith charts
C314.4	Analyze	Analyze the characteristics of TE and TM waves
C314.5	Creating	Design a RF transceiver system for wireless communication

Year / Sem: III / VI

Course Code:EC8004/C315

Course: Wireless networks

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C315.1	Understanding	Conversant with the latest 3G/4G networks and its architecture.
C315.2	Understanding	Design and implement wireless network environment for any application using latest wireless protocols and standards
C315.3	Applying	Ability to select the suitable network depending on the availability and requirement
C315.4	Evaluating	Evaluate different type of applications for smart phones and mobile devices with latest network strategies
C315.5	Understand and Apply	Understand about evolution of 4G Networks, its architecture and applications

Year / Sem: III / VI

Course Code: EC8681/ C316

Course: Microprocessors and Microcontrollers Laboratory

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C316.1	Applying	Develop ALP Programmes for fixed and Floating Point and Arithmetic
C316.2	Applying	Utilize interface different I/Os with processor
C316.3	Applying	Experiment with generate waveforms using Microprocessors
C316.4	Applying	Develop Programming in 8051
C316.5	Analyzing	Analyze the difference between simulator and Emulator

Year / Sem: III / VI

Course Code: EC8661/ C317

Course: VLSI Design Laboratory

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C317.1	Applying	Write HDL code for basic as well as advanced digital integrated circuit
C317.2	Creating	Import the logic modules into FPGA Boards
C317.3	Creating	Synthesize Place and Route the digital IPs
C317.4	Creating	Design and Simulate the layouts of Digital & Analog IC Blocks using EDA tools
C317.5	Evaluating	Extract the layouts of Digital & Analog IC Blocks using EDA tools

Year / Sem: III / VI

Course Code: EC8611/C318

Course: Technical Seminar

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C318.1	Remembering	Read articles of a general kind in magazines and newspapers.
C318.2	Understanding	Participate effectively in informal conversations
C318.3	Evaluating	introduce themselves and their friends and express opinions in English
C318.4	Understanding	Comprehend conversations and short talks delivered in English
C318.5	Applying	Write short essays of a general kind and personal letters and emails in English.

Year / Sem: III / VI

Course Code: HS8581/C319

Course: Professional Communication

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C319.1	Remembering	Make effective presentations.
C319.2	Evaluating	Participate confidently in Group Discussions.
C319.3	Evaluating	Attend job interviews and be successful in them.
C319.4	Creating	Develop adequate Soft Skills required for the workplace
C319.5	Creating	Develop their confidence and help them attend interviews successfully.

Year / Sem: IV / VII

Course Code: EC8701

Course: Antennas and Microwave Engineering

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C401.1	Remember, Understand & Apply	To enhance the student knowledge in the area of microwave components and antenna for practical applications.
C401.2	Remember, Understand, & Analyzing	Be able to design arithmetic and logical unit.
C401.3	Understand , Analyzing & Creating	Be able to design and analyze pipelined control units and evaluate parallel processors.
C401.4	Remember , Understand , Apply and Analyzing	Be able to design parallel processing architectures.
C401.5	Understand, Analyzing & Creating	Be able to evaluate the performance of the memory systems and be familiar with I/O interfaces and standard I/O systems.

Year / Sem: IV / VII

Course Code:EC8791

Course: Optical Communication

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C402.1	Understand	Realize basic elements in optical fibers, different modes and configurations.
C402.2	Analyze	Analyze the transmission characteristics associated with dispersion and polarization techniques.
C402.3	Creating	Design optical sources and detectors with their use in optical communication system.
C402.4	Creating	Construct fiber optic receiver systems, measurements and coupling techniques
C402.5	Creating	Design optical communication systems and its networks.

Year / Sem: IV / VII

Course Code: EC8791

Course: Embedded and Real Time Systems

On completion of this course the Students will be able to

Sl. No.	Bloom's Taxonomy Level	DESCRIPTION
C403.1	Remember and Understand Apply	Describe the architecture and programming of ARM processor
C403.2	Understand Analyses and create	Outline the concepts of embedded systems
C403.3	Understand, Apply & Evaluate	Explain the basic concepts of real time operating system design
C403.4	Remember, Understand and Evaluate	Be exposed to the basic concepts of embedded programmin
C403.5	Understand, Apply & Evaluate	Model real-time applications using embedded-system concepts

Year / Sem: IV / VII

Course Code:EC8702

Course: Ad hoc and Wireless Sensor Networks

On completion of this course the Students will be able to

Sl. No.	Bloom's Taxonomy Level	DESCRIPTION
C404.1	Remember and Understand Apply	Students are able to know the basics of Ad hoc networks and Wireless Sensor Networks.
C404.2	Understand Analyses and create	Apply this knowledge to identify the suitable routing algorithm based on the network and user requirement
C404.3	Understand, Apply & Evaluate	Apply the knowledge to identify appropriate physical and MAC layer protocols
C404.4	Understand	Understand the transport layer and security issues possible in Ad hoc and sensor networks.
C404.5	Understand, Apply & Evaluate	Be familiar with the OS used in Wireless Sensor Networks and build basic modules

Year / Sem: IV / VIII

Course Code:GE8071

Course: Disaster Management

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C405.1	Remember, Understand, Apply & Analyzing	To provide students an exposure to disasters, their significance and types.
C405.2	Understand, Analyzing & Creating	To ensure that students begin to understand the relationship between vulnerability, disasters, disaster prevention and risk reduction
C405.3	Understand , Analyzing & Creating	To gain a preliminary understanding of approaches of Disaster Risk Reduction (DRR)
C405.4	Remember , Apply and Analyzing	To enhance awareness of institutional processes in the country
C405.5	Understand, Analyzing & Creating	To develop rudimentary ability to respond to their surroundings with potential disaster response in areas where they live, with due sensitivity

Year / Sem: IV / VII

Course Code:OIC751

Course: Transducer Engineering

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C406.1	Understand	To understand how physical quantities are measured and how they are converted to electrical or other forms.
C406.2	Understand	To have an adequate knowledge in resistance, transducers
C46.3	Applying	To develop the knowledge of inductance and capacitance transducers
C406.4	Understand	To study the characteristics of Transducers.
C406.5	Knowledge	To impart knowledge on various types of transducers

Year / Sem: IV / VII

Course Code: EC8711

Course: Embedded Laboratory

On completion of this course the Students will be able to

Sl. No.	Bloom's Taxonomy Level	DESCRIPTION
C407.1	Understand & Apply	Write programs in ARM for a specific Application
C407.2	Understand & Apply	Interface memory, A/D and D/A convertors with ARM system
C407.3	Analyze	Analyze the performance of interrupt
C407.4	Understand & Apply	Write program for interfacing keyboard, display, motor and sensor.
C407.5	Understand & Apply	Formulate a mini project using embedded system

Year / Sem: IV / VII

Course Code: EC6761

Course: Advanced Communication Laboratory

On completion of this course the Students will be able to

Sl. No.	Bloom's Taxonomy Level	DESCRIPTION
C408.1	Understand	Analyze the performance of simple optical link by measurement of losses and Analyzing the mode characteristics of fiber
C408.2	Understand	Analyze the Eye Pattern, Pulse broadening of optical fiber and the impact on BER
C408.3	Evaluate and Anlayze	Estimate the Wireless Channel Characteristics and Analyze the performance of Wireless Communication System
C408.4	Understand	Understand the intricacies in Microwave System design
C408.5	Understand	Understand actual communication waveforms that will be sent and received across wireless channel

Year / Sem: IV / VII

Course Code: EC8094

Course: Satellite Communication

On completion of this course the Students will be able to

Sl. No.	Bloom's Taxonomy Level	DESCRIPTION
C409.1	Understand	Analyze the satellite orbits
C409.2	Understand	Analyze the earth segment and space segment
C409.3	Analyze	Analyze the satellite Link design
C409.4	Understand	Design various satellite applications
C409.5	Understand	Understand the basics of satellite Networks

Year / Sem: IV / VIII

Course Code:GE8076

Course: Professional Ethics in Engineering

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C410.1	Understand	Describe an awareness of human values to appreciate the rights of others and stress management.
C410.2	Understand	Illustrate the moral issues and models of professional roles.
C410.3	Understand and Apply	Discuss the ethical issues related to engineering and realize the responsibilities and rights in the society.
C410.4	Understand	Describe the responsibilities, rights and assesses of the safety and risk.
C410.5	Understand and Apply	Apply the social responsibility on multinational corporations related to engineering.

Year / Sem: IV / VIII
Course Code: EC8811
Course: Project Work

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C411.1	Analyze	Identify challenging practical problems, solutions to cope up with present scenario of Electronics and Communication Engineering field.
C411.2	Analyze	Analyze the various methodologies and technologies and discuss with team for solving the problem.
C411.3	Understand and Apply	Apply technical knowledge and project management skills for solving the problem.
C411.4	Understand, Apply and Evaluate	Design and develop hardware and/or software for their project specific problem.
C411.5	Understand, Apply and Evaluate	Prepare the project reports and give proper explanation during the presentation and demonstration.

PG-VLSI DESIGN

Year / Sem: I / I

Course Code: C101

Course: Applied Mathematics for Electronics Engineers

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C101.1	Analyze	Concepts of fuzzy sets, knowledge representation using fuzzy rules, fuzzy logic, fuzzy prepositions and fuzzy quantifiers and applications of fuzzy logic. Apply various methods in matrix theory to solve system of linear
C101.2	Analyze	Computation of probability and moments, standard distributions of discrete and continuous equations
C101.3	Understand and Apply	random variables and functions of a random variable. Conceptualize the principle of optimality and sub-optimization, formulation and computational
C101.4	Understand, Apply and Evaluate	procedure of dynamic programming Exposing the basic characteristic features of a queuing system and acquire skills in analyzing
C101.5	Understand, Apply and Evaluate	queuing models. Using discrete time Markov chains to model computer systems

Year / Sem: I / I

Course Code: C102

Course: Advanced Digital System Design

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C102.1	Analyze	Analyze and design sequential digital circuits
C102.2	Apply	Design and use programming tools for implementing digital circuits of industry standards
C102.3	Understand	Identify the requirements and specifications of the system required for a given application
C102.4	Apply	Design and used programming tools for using programmable devices.
C102.5	Understand, Apply	Discuss about system design using very log

Year / Sem: I / I

Course Code: C103

Course: CMOS Digital VLSI Design

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C103.1	Understand	Carry out transistor level design of the most important building blocks used in digital CMOS VLSI circuits
C103.1	Understand,	Discuss design methodology of arithmetic building block
C103.1	Analyze	Analyze tradeoffs of the various circuit choices for each of the building block.
C103.1	Understand,	Discuss about arithmetic building blocks and memory architecture
C103.1	Understand,	Understand and apply interconnect and clocking strategy

Year / Sem: I / I

Course Code: C104

Course: DSP Integrated Circuits

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C104.1	Understand	Knowledge about the Digital Signal Processing concepts and its algorithms
C104.2	Understand	Knowledge about finite word length effects in digital filters•
C104.3	Understand	Knowledge about the Concept behind multi rate systems is understood
C104.4	Understand and Apply	To get familiar with the DSP processor architectures and how to perform synthesis of processing elements
C104.5	Understand	Discuss about arithmetic unit and processing elements

Year / Sem: I / I

Course Code: C105

Course: CAD for VLSI Circuits

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C105.1	Understand	Outline floor planning and routing
C105.2	Understand	Explain Simulation and Logic Synthesis
C105.3	Applying	Discuss the hardware models for high level synthesis
C105.4	Understand	Explain simulation and logic synthesis
C105.5	Understand	Explain High Level Synthesis

Year / Sem: I / I

Course Code: C106

Course: Analog IC Design

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C106.1	Applying	To design MOS single stage, multistage amplifiers and OPAMP for desired frequencies
C106.2	Analyze	Analyze Stability, frequency response, and Noise in MOS amplifiers
C106.3	Applying	Construct the Frequency Response Of Single Stage And Two Stage Amplifiers.
C106.4	Understand	Explain the Current Mirrors And Reference Circuits
C106.5	Applying	To design the operational amplifier circuits.

Year / Sem: I / I

Course Code: C107

Course: VLSI Design Laboratory I

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C107.1	Applying	Students will be able to characterize and model the circuit behaviours
C107.2	Analyze	student will be able to map it onto FPGA platform and carry out a series of validations design starting from design entry to hardware testing
C107.3	Applying	students will be able to design and carry out time domain simulations of simple analog building blocks
C107.4	Understand	student will be able to design and carry out frequency domain simulations of simple analog building blocks
C107.5	Applying	To study the pole zero behaviors of feedback based circuits and compute the input/output impedances.

Year / Sem: I / II

Course Code: C108

Course: Testing of VLSI Circuits

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C108.1	Creating	Design for testability
C108.2	Creating	Discuss test algorithms
C108.3	Understanding	Explain fault diagnosis
C108.4	Applying	Model the Testing knowledge skills get improved
C108.5	Creating	Solve the practical engineering problems pertaining to the field of VLSI designs.

Year / Sem: I / II

Course Code: C109

Course: VLSI Signal Processing

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy	DESCRIPTION
C109.1	Applying	Apply modification of the existing or new DSP architectures suitable for VLSI.
C109.2	Creating	Design pipeline-based architectures in the design.
C109.3	Understanding	Explain the metallization techniques to create three dimensional devices structures and devices.
C109.4	Creating	Design architecture for DSP algorithms
C109.5	Creating	Optimize design in terms of area, speed and power.

Year / Sem: I / II

Course Code: C110

Course: Low Power VLSI Design

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy	DESCRIPTION
C110.1	Understanding	Know the basics and advanced techniques in low power design which is a hot topic in today's market where the power plays major role.
C110.2	Remembering	List The reduction in power dissipation by an IC earns a lot including reduction in size, cost and etc.
C110.3	Understanding	Understand the concept of low power design and physics of power
C110.4	Creating	Develop logical level and circuit level power optimization techniques.
C110.5	Applying	Apply advance techniques and special techniques for reducing power consumption in memories.

Year / Sem: I / II

Course Code: C111

Course: Device Modeling - I

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C111.1	Creating	To design and model MOSFET and BJT devices to desired
C111.2	Creating	Completed one of the important prerequisites for professionals in the area of VLSI design
C111.3	Evaluating	Able to carry out transistor level hand calculation-based design of the most important building blocks used in digital CMOS VLSI circuits.
C111.4	understanding	Understanding of the design methodology and tradeoffs of the various circuit choices for each of all the blocks discussed.
C111.5	Analyzing	Real time application development.

Year / Sem: I / II

Course Code: C112

Course: Signal Integrity for High Speed Design

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C112.1	Analyzing	Ability to identify sources affecting the speed of digital circuits.
C112.2	Analyzing	Able to improve the signal transmission characteristics.
C112.3	Understanding	Knowledge of signal conditioning techniques and the necessary guide lines in a Mixed signal IC environment.
C112.4	Evaluating	Able to apply the suitable algorithm according to the given optimization problem.
C112.5	Analyzing	Ability to modify the algorithms to refine the complexity parameters.

Year / Sem: I / II

Course Code: C113

Course: Embedded System Design

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C113.1	Understanding	Explain different protocols
C113.2	Creating	Discuss state machine and design process models
C113.3	Remembering	List the Outline embedded software development tools and RTOS
C113.4	Analyzing	Able to select and design suitable embedded systems for real world applications.
C113.5	Understanding	Understanding of the fundamental Computational Intelligence models

Year / Sem: I / II

Course Code: C114

Course: VLSI Design Laboratory II

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C114.1	Understanding	The student would have hands on experience in the carrying out a complete VLSI based experiments using / CADENCE/ TANNER/
C114.2	Understanding	Have knowledge about digital system design
C114.3	Analyzing	Have analysis knowledge of various parameters
C114.4	Creating	Design and implement the embedded systems
C114.5	Creating	Have knowledge of layout level design entries

Year / Sem: I / II

Course Code: C115

Course: Term Paper Writing and Seminar

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C115.1	Understanding	Read and write the research article and publish a technical paper.
C115.2	Remembering	Prediction and Estimation concepts are well understood
C115.3	Understanding	Gather basic knowledge
C115.4	Understanding	Understanding of the fundamental Concepts
C115.5	Understanding	To demonstrate practical competence in these areas.

Year / Sem: II / III

Course Code: C201

Course: Analog to Digital Interfaces

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C201.1	Creating	Design Analog to Digital and Digital to Analog data converters based on data precision requirements
C201.2	Analyzing	Able to analyze and model the behavior analog interfaces and systems
C201.3	Understanding	Understand the principles of analog and digital interface
C201.4	Understanding	Know and understand the optimal solution to the filtering problem
C201.5	Evaluating	Ability to solve linear and nonlinear filtering problem

Year / Sem: II / III

Course Code: C202

Course: Digital Image Processing

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C202.1	Creating	To design and model MOSFET and BJT devices to desired
C202.2	Creating	Discuss image enhancement techniques
C202.3	Understanding	Explain color image processing
C202.4	Understanding	Compare image compression schemes
C202.5	Creating	Able to design and implement image enhancement schemes.

Year / Sem: II / III

Course Code: C203

Course: Hardware – Software Co-Design

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C203.1	Evaluating	To evaluate prototyping and emulation techniques
C203.2	Understanding	To compare hardware / software co-synthesis.
C203.3	Applying	To formulate the design specification and validate its functionality by simulation
C203.4	Creating	Able to design and implement image enhancement schemes.
C203.5	Creating	Able to design and implement compression schemes.

Year / Sem: II / III

Course Code: C204

Course: Project Work Phase-I

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C204.1	Applying	Identify a topic in advanced areas of Electronics and communication Engineering
C204.2	Analyzing	Examine literature to identify gaps and define objectives & scope of the work
C204.3	Create	Plan and implement innovative ideas for social benefit
C204.4	Applying	Develop a prototypes/models, experimental set-up and software systems necessary to meet the objectives
C204.5	Analyzing	Analyze and discuss the results to draw valid conclusions and Prepare a report as per recommended format and defend the work

Year / Sem: II / III

Course Code: C205

Course: Project Work Phase-II

On completion of this course the Students will be able to

S.NO.	Blooms' Taxonomy Level	DESCRIPTION
C205.1	Apply	The fundamental knowledge of Electrical and Electronics Engineering in developing novel products/solutions and thereby contributing to society
C205.2	Create	Capable of designing and developing system prototypes independently by utilizing latest software's and equipment's
C205.3	Knowledge	Intellectual capability and innovative thinking of the students are ignited
C205.4	Understand	Identify technical issues and solve them effectively in a systematic manner
C205.5	Create	Develop professionalism, build self-confidence and practice ethical