Course Outcomes (CO) - Department of Electronics &Communication Engineering

Course Outcomes are narrower statements that describe what students are expected to know, and be able to do at the end of each course/subject. While the POs define the departmental outcomes, the COs are more oriented towards the subjects and are mostly defined by the faculties consulting higher authorities. The COs aremore like statements that relate to the skills, knowledge, and behavior the students acquire as they go through a specific course within a program. They collectively contribute to the program outcomes. They are to be mapped to the POs, and not necessarily to a single one.

Course Outcomes from Semester 3 onwards are mentioned below

II Year/III Semester

Subject Name: Electronic Devices & Circuits   **Subject Code: 3EC4-01**

Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: Understand the basic concepts of semiconductor physics
CO-2: To analyze various diodes and its applications.
CO-3: To Design and analyze various diodes and its applications.
CO-4: To understand BJT and FET configurations.
CO-5: To design and analyze BJT and FET amplifiers.

3EC4-02: Digital Electronics

Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: Understand the basics of number systems and logic gates.
CO-2: Explain finite state model and minimization techniques
CO-3: Know structure and design of combinational and sequential logic circuits.
CO-4: Understand the concept different logic families.

3EC4-03: Network Theory

Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: Understand the concept of different network theorems.
CO-2: Analyze different type of electric circuit in transient time domain.
CO-3: Understand network functions in S plane.
CO-3: Study and analyze the two port network with different parameters and their interconnection. Analyze their application to different network.
CO-4: Understand Laplace Transformation and its applications.

3EC4-04: Signals & Systems

Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: Familiarization with sampling and processing of various signals.
CO-2: Ability to compute various transform analysis of LTI System.
CO-3: Analyze the Fourier Series for continuous and discrete time signals.
CO-4: Analyze the Fourier transform for continuous and discrete time signals.

CO-5: Evaluate the signals and systems using Z and Laplace Transforms.
CO-6: Understand the concept and application of sampling.

3EC4-05: Electronics Measurement and Instrumentation

Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: Understand basic concepts of measurement.
CO-2: Understand the behavior of electronic measuring instruments.
CO-3: Familiarization with CRO and working principal.
CO-4: Understand digital instruments and of analog to digital conversion techniques.
CO-5: Concepts of Strip chart recorder and Magnetic Tape recorder.

3EC3- 06: Advanced Engineering Mathematics-I

Course Outcomes: Upon successful completion of the course the students will be able to
CO-1: Study the numerical interpolations for equal and unequal intervals, numerical differentiation, integration and solving ordinary differential equations by numerical methods.
CO-2: Study the solution of polynomials, algebraic and transcendental by numerical methods including linear equations.
CO-3: Compute the discrete and continuous random variables, probability distributions, expectations, moments, MGF, mean and variances.
CO-4: Define and explain the different statistical distributions like Binomial, Poisson, Normal, Uniform, and Exponential distributions and compute the method of least squares, correlation and regression.
CO-5: Study the theory of partial differential equations by using the separation of variables.
CO-6: Study and understand the Fourier series, half range Fourier sine and cosine series

3EC4-20: Electronic Devices & Circuits Lab

Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: Understand the working of diodes, special purpose diodes, their characteristics and circuits.
CO-2: Analyze the transistor circuits and their characteristics.
CO-3: Application of diodes and transistors, working on mini projects.

3EC4-21: Digital Electronics Lab

Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: Define different types of logic gates, identify their ICs and verify their truth table.
CO-2: Design various adders and subtractors.
CO-3: Realization of multiplexers using logic gates.
CO-4: Design and counters and shift registers
CO-5: Realization of combinational and sequential circuits in VSM and VHDL.

3EC4-22: Electronic Measurement & Instrumentation Lab

Course Outcomes:

Upon successful completion of the course, the students will be able to:
CO-1: Understand the characteristics of temperature transducers.
CO-2: Examine the characteristics of photo transducers, Displacement transducers etc.
CO-3: Design signal conditioning circuits for transducers.

3EC4-23: Signals & Systems Lab

Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: Familiarization & working with MATLAB Tool.
CO-2: Generations and operations on different signals/sequences.
CO-3: Working with FT, IFT, LT and z-transforms in Matlab.
CO-4: Working with distribution and density functions of random variables.

II Year/ IV Semester
4EC4-01: Applied Electronics
Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: Understand different topologies of feedback amplifier and design them.
CO-2: Analyze different type of oscillators and design them.
CO-3: Develop the basic understanding of amplifier designing and its analysis using hybrid pie model. Also analyze amplifier operation at low and high frequency and its frequency responses.
CO-4: Inspect and analyze different type of tuned amplifier
CO-5: Demonstrate different type of large signal amplifier and design and analyze them.

4EC4-02: Microprocessor & Microcontroller
Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: Concept and architecture of 8085.
CO-2: Instruction set and assembly language programming.
CO-3: Interfacing with I/O Devices.
CO-4: Concept and architecture of 8051 Microcontroller.
CO-5: Programming and application of 8051 Microcontroller.

4EC4-03: Analog Communication

Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: Understand the basic behavior of LTI systems.
CO-2: Analyze the Fourier Series for continuous and discrete time signals.
CO-3: Analyze the Fourier transform for continuous and discrete time signals.
CO-4: Study of Receivers and its practical application in analog communication.
CO-5: Understand the use of sampling for analog communication

4EC4-04: Electromagnetic Field Theory

Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: Understand basics of electric and magnetic fields.
CO-2: Time varying fields and maxwell's equations.
CO-3: Concept of Uniform plane wave.

CO-4: Concept of transmission line equations and its application.
CO-5: TE and TM modes in rectangular and Circular wave guides

4EC4-05: Data Structure &Algorithms

Course Outcomes: Upon successful completion of the course the students will be able to
CO1: Understanding the fundamental analysis and time complexity for a given problem.
CO2: Articulate linear & non data structures and legal operations permitted on them.
CO3: Applying a suitable algorithm for searching and sorting.
CO4: Understanding graph algorithms, operations, and applications and the importance of hashing.
CO5: Application of appropriate data structures to find solutions to practical problems

4EC3-06: Advanced Engineering Mathematics-II

Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: To understand the concepts and to solve the problems of Laplace transform along with their properties and applications to ODE and PDE.
CO-2: To understand the concepts and to solve the problems of Fourier transform along with their properties.
CO-3: To study and understand the concepts of Z- transform along with their properties.
CO-4: To study the techniques of complex variables together with other concepts and properties of an analytic function, complex integration, classification of singularities, calculus of residues and evaluation of integrals.

4EC4-20: Applied Electronics Lab.

Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: Design and experiment with various amplifiers and oscillators circuits using BJTs and FETs
CO-2: Design Multivibrator circuit using BJT/FET
CO-3: Implement Mini Project related to amplifiers/Oscillators.

4EC4-21: Microprocessor & Microcontroller Lab

Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: To understand the working of a microprocessor/controller.
CO-2: To learn to program a processor using assembly language.
CO-3: Implement Mini Project related to amplifiers.

4EC4-22: Analog Communication Lab

Course Outcomes:
Upon successful completion of the course, the students will be able to:
CO-1: Demonstrate generation of continuous wave analog modulation techniques and its demodulation process.
CO-2: To learn practical aspects of TDM and FDM.

CO-3: Demonstrate generation of analog pulse modulation techniques and its demodulation process.

4EC4-23: Computer Programming Lab
Course Outcomes: Upon successful completion of the course/Lab the students will be able to
CO1: Be able to design and analyze the time and space efficiency of the data structure.
CO2: Understand the concept of static & Dynamic memory management
CO3: Be capable to identity the appropriate data structure for given problem.
CO4: Have practical knowledge on the applications of data structures.