

Electronics and Telecommunication Engineering
Course Outcomes of All Courses of B.E. Fourth Semester

Subject	CO No.	CO Statements	Blooms Level
4ETC01 Analog and Digital Communication	4ETC01.1	Analyze AM (DSB-FC, DSB-SC, SSB-SC) and superheterodyne receivers for power efficiency, bandwidth, and fidelity in analog communication.	Analyzing (L4)
	4ETC01.2	Apply the concepts of FM generation, demodulation, and comparison of FM and AM system performance.	Applying (L3)
	4ETC01.3	Apply random process statistics and noise analysis to assess noise impact on communication, including FM threshold effects.	Applying (L3)
	4ETC01.4	Utilize pulse modulation (PAM, PWM, PPM) and PCM to digitize analog signals while addressing issues like aliasing, quantization noise, and companding	Applying (L3)
4ETC02 Analog Circuits	4ETC02.1	To understand the basic concepts and parameters of Op-Amp-741, Voltage regulator IC723, timer IC555 and PLL565.	Understanding (L2)
	4ETC02.2	To make use of Op-Amp for implementation of linear and non-linear applications.	Applying (L3)
	4ETC02.3	To Analyze various analog circuits using IC741, IC723, IC555 and IC565.	Analyzing (L4)
	4ETC02.4	To Design of various analog circuits using IC741, IC723, IC555 and IC565.	Creating (L5)
4ETC03 Network Theory	4ETC03.1	Apply Mesh and Node analysis techniques to formulate and solve electrical circuit equations involving resistive, inductive, and capacitive components	Applying (L3)
	4ETC03.2	Utilize appropriate Network Theorems to simplify and analyze electrical circuits for determining voltage, current, and power relationships	Applying (L3)
	4ETC03.3	Construct and analyze oriented graphs of electrical networks using incidence, tie-set, and cut-set matrices to determine network currents and voltages systematically	Analyzing (L4)
	4ETC03.4	Implement Laplace Transform techniques to solve electrical circuit problems involving initial conditions, transient responses, and steady-state behavior	Analyzing (L4)
	4ETC03.5	Examine the characteristics of Two-Port networks by determining impedance, admittance, transmission, and hybrid parameters for analyzing interconnected circuits	Analyzing (L4)
	4ETC03.6	Interpret network functions by evaluating poles and zeros, driving point functions, and transfer functions to predict circuit behavior in time and frequency domains	Analyzing (L4)

4ETC04 Signals and Systems	4ETC04.1	Demonstrate the continuous-time signals and systems mathematically and illustrate their classification with the mathematical operations performed on them.	Understand (L2)
	4ETC04.2	Analyze the spectral characteristics of continuous-time periodic signals and systems using Fourier series. Apply the spectral characteristics of continuous-time aperiodic signals and systems using Fourier Transform.	Applying (L3)
	4ETC04.3	Apply the Laplace transform for analysis of continuous-time systems. Evaluate the classical Solution of Linear Difference Equations. Apply the discrete-time signals and systems mathematically and analyze their classifications.	Applying (L3)
	4ETC04.4	Evaluate the spectral characteristics of Discrete Time signals and systems using DTFT and its properties	Evaluate (L4)
4ETC05 Values and Ethics	4ETC05.1	Understand Possibilities of better Life through Value education	Understanding(L2)
	4ETC05.2	Demonstrate the concept of coexistence in life situation	Understanding (L2)
	4ETC05.3	Develop harmony in nature through emphasis on dimensions of human endeavor	
	4ETC05.4	Apply the concept of ethical human conduct	Applying (L3)
4ETC06 Analog and Digital Communication Lab	4ETC06.1	Illustrate modulation and demodulation in communication system.	Applying (L3)
	4ETC06.2	Analyze performance characteristics of AM/FM receiver.	Analyzing (L4)
	4ETC06.3	Analyze the performance of digital communication system.	Analyzing (L4)
	4ETC06.4	Model communication concepts using simulation software.	Applying (L3)
4ETC07 Analog Circuits Lab	4ETC07.1	Demonstrate linear and nonlinear applications of Op-Amp	Applying (L3)
	4ETC07.2	Design voltage regulators using IC723 and IC317	Applying (L3)
	4ETC07.3	Analyze and design application of timer IC555	Analyzing (L4)
	4ETC07.4	Study characteristic of PLL using IC565	Understanding (L2)
4ETC08 Network Theory Lab	4ETC08.1	Apply knowledge of Mesh and Node analysis for a given network	Analyzing (L4)
	4ETC08.2	Apply various network theorems to solve networks	Analyzing (L4)
	4ETC08.3	Apply knowledge of Two Port network to analyze given network.	Analyzing (L4)
	4ETC08.4	Apply knowledge of Network Functions to analyze given network.	Analyzing (L4)

4ETC09 Signal and Systems Lab	4ETC09.1	Familiarize with the signal processing functions and verify each function.	Applying (L3)
	4ETC09.2	Generate different types of signals and explore results to draw valid conclusions in Signal Processing.	Applying (L3)
	4ETC09.3	Enable on how to evaluate the signal processing and system design using simulation tools.	Evaluating(L5)
	4ETC09.4	Analyze signals using different transform methods.	Analyzing (L4)


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