

Branch Name:	Information and Communication Technology
Program Code:	ET107
Semester/Year:	Semester V / Third Year
Course Title:	Analog and Digital Communication Practical
Course Code:	2ET1070502P
Pre-requisite:	Basic Electronics, Signals and Communication

Course Objectives:

1. To explain basics of analog and digital communication.
2. To explain analog and digital modulation schemes.
3. To explain analog and digital demodulation scheme.
4. To study analog and digital communication system.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min .	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	-	-	-	-	10	25	10	25	50

Sr. No	List of Practical	Content Hours
1.	To Study and Perform Amplitude Modulation and De Modulation.	2
2.	To Study and Perform Frequency Modulation and De Modulation.	2
3.	To Study and Perform Phase Modulation and De Modulation.	2
4.	To Study and Perform Sampling and Reconstruction.	2
5.	Implement and observe the PAM, PWM, PPM.	2
6.	To Study and Perform ASK.	2
7.	To Study and Perform FSK.	2
8.	To Study and Perform PSK.	2
9.	To Study and Perform QPSK.	2
10.	To Study and observe the performance QPSK with Rayleigh fading and additive white Gaussian Noise.	2
11.	To Study and Perform BPSK.	2

12.	To Study and observe the performance QAM.	2
13.	To Study and observe the performance Digital Detection Techniques.	2
14.	To Study and Perform one Digital Communication System.	2
15.	Implement and observe the performance Behavior of OFDM.	2

List of Reference Books:

1. Analog and Digital Communication System”, Martin S.Roden, SPD Publications 5th edition 2002.
2. “Communications Systems: Analog and Digital”, R.P. Singh and S.D.Sapre, TMH 1995.

e-Resources (If any):

1. https://edisciplinas.usp.br/pluginfile.php/5251120/mod_resource/content/1/B.%20P.%20Lathi%2C%20Zhi%20Ding%20-%20Modern%20Digital%20and%20Analog%20Communication%20Systems-Oxford%20University%20Press%20%282009%29.pdf
2. <https://vardhaman.org/electronics-and-communication-engineering/e-resources/>

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Understand difference between analog and digital communication	1 Remembering 2 Understanding
CLO2	Understand various analog and digital modulation Techniques	2 Understanding
CLO3	Application of analog and digital modulation Techniques	3 Applying
CLO4	Evaluate Performance of Digital Modulation System	5 Evaluate
CLO5	Understand analog and digital demodulation techniques.	2 Understanding 3 Applying
CLO6	Design Analog and Digital Modulator and Demodulator	6 Create

Mapping of CLOs with POs & PSOs

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	H	M	M	L	L	M			L				H	L	L	M
CLO2		L	M	H	L	L					L	L	M	L	M	M
CLO3	L	M	M	L	M	H		M		L			M	L	M	M
CLO4	M	M	M	L	M	H		M	L				M	L	L	L
CLO5	M	L	L	L	M	H		M		L			H	L	M	M
CLO6	L	M	L	L	M	H		M			L		H	L	M	M

H: High, M: Medium, L: Low