Techno College of Engineering Agartala

An Engineering College Approved by AICTE, MHRD, Govt. of India
Affiliated to Tripura University (A Central University),
Department of Electronics and Communication Engineering

List of Laboratory Experiments

Analog and Digital Communication Lab							
Course Code	**Hours / Week**				**Maximum Marks**		
PC CE 509	L	T	P	C	**CIA**	**SEE**	**Total**
	0	0	2	1	40	60	100
Number of classes: 24 hours			**Prerequisites: Signals and systems**				
Branch: ECE			**Semester: V**				

Course overview:

This course provides a comprehensive understanding of analog and digital modulation techniques, covering their principles, implementation, and demodulation. It explores various modulation schemes, including Amplitude, Frequency, and Pulse Code Modulation, alongside an analysis of noise effects and mitigation strategies in communication systems. The course also delves into different digital shift keying techniques and their software simulation.

Course objectives:

i. To understand the fundamental principles of various analog modulation (AM, FM) and demodulation techniques.
ii. To analyze the characteristics and applications of Double Side Band Suppressed Carrier (DSB-SC) and Single Side Band Suppressed Carrier (SSB-SC) modulation.
iii. To study the impact of noise in communication systems and explore techniques like pre-emphasis and de-emphasis for noise reduction.
iv. To comprehend the concepts of pulse code modulation (PCM), differential PCM (DPCM), and delta modulation, along with different digital shift keying (ASK, FSK, PSK) techniques and their software simulation.

Course outcomes:

CO Number	CO Description	K-level
CO-1	Experiment with different amplitude modulation schemes (AM, SSB, DSB).	K-3
CO-2	Experiment with frequency modulation, demodulation.	K-3
CO-3	Analyze the noise effects, pre-emphasis and de-emphasis.	K-3
CO-4	Experiment with pulse code, diferential pulse code and delta modulation.	K-3
CO-5	Compare and analyze various digital modulation techniques (ASK, FSK, PSK)	K-4
Sl. No.	**EXPERIMENT NAME**	**CO**
1.	Study of amplitude modulation and demodulation.	CO-1

2.	Study of Double Side Band Suppressed Carrier (DSB-SC) & Demodulation technique.	CO-1
3.	Study of Single Side Band Suppressed Carrier (SSB-SC) & Demodulation technique.	CO-1
4.	Study of Frequency Modulation and demodulation.	CO-2
5.	Study of Noise Effect in communication system.	CO-3
6.	Study of pre-emphasis and de-emphasis.	CO-3
7.	Study of Pulse code modulation.	CO-4
8.	Study of Differential pulse code modulation.	CO-4
9	Study of Delta modulation.	CO-4
10	Study of Amplitude, Frequency and Phase shift keying.	CO-5
11	Software simulation of Amplitude, Frequency and Phase shift keying.	CO-5