DIGITAL COMMUNICATIONS LABORATORY

V Semester: ECE

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
AEC105	Core			3	2	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 42				Total Classes: 42		

OBJECTIVES:

The course should enable the students to:

I. Analyze various Digital Modulation techniques.
II. Verify the Sampling Theorem.
III. Understand the spectral characteristics of PAM , PWM, PPM.
IV. Analyze various Pulse digital modulation Techniques.

COURSE LEARNING OUTCOMES (CLOs):

CLO 1: Understand Sampling theorem.

CLO 2: Analyze Pulse Amplitude Modulation.

CLO 3: Understand Pulse Width Modulation.

CLO 2: Understand Pulse Position Modulation.

CLO 4: the generation and detection of PCM.

CLO 5: Analyze the generation and detection of DPCM.

CLO 6: Analyze the generation and detection of Delta Modulation.

CLO 7: Analyze the generation and detection of Frequency Shift Keying.

CLO 8: the generation and detection of Phase Shift Keying.

CLO 9: Analyze the generation and detection of DPSK.

CLO 10: Analyze the generation and detection of Amplitude Shift Keying.

CLO 11: Study of the Spectral Characteristics of PAM and QAM.

CLO 12: Analyze the generation and detection of Quadrature Phase Shift Keying.

CLO 13: Determine the bandwidth and phase of the signals using MATLAB for QPSK & DPSK.

LIST OF EXPERIMENTS	
Week-1	**SAMPLING THEOREM VERIFICATION**
Verification of sampling theorem for under, perfect, over sampling cases.	
Week-2	**PULSE AMPLITUDE MODULATION AND DEMODULATION**
Generation of Pulse Amplitude modulation and demodulation using hardware and Matlab.	
Week-3	**PULSE WIDTH MODULATION AND DEMODULATION**
Generation of Pulse width modulation and demodulation using hardware and Matlab.	
Week-4	**PULSE POSITION MODULATION AND DEMODULATION**
Generation of pulse position modulation and demodulation using hardware and Matlab.	
Week-5	**PULSE CODE MODULATION**
Generation of pulse code modulation and demodulation using hardware and understanding the concept analog to digital conversion.	
Week-6	**DIFFERENTIAL PULSE CODE MODULATION**
Generation of differential pulse code modulation and demodulation using hardware.	
Week-7	**DELTA MODULATION**
Generation of delta modulation and demodulation using hardware .Understanding difference between PCM and DM.	
Week-8	**FREQUENCY SHIFT KEYING**
Generation of Frequency shift keying modulation and demodulation using hardware.	
Week-9	**PHASE SHIFT KEYING**
Generation of Phase shift keying modulation and demodulation using hardware.	
Week-10	**DIFFERENTIAL PHASE SHIFT KEYING**
Generation of Differential Phase shift keying modulation and demodulation using hardware.	
WeeK-11	**AMPLITUDE SHIFT KEY(ASK)**
Generation of Amplitude Shift Key modulation and demodulation using hardware.	
Week-12	**STUDY OF THE SPECTRAL CHARACTERISTICS OF PAM AND QAM**
Understand frequency domain description of PAM and QAM.	
Week 13	**QUADRATURE PHASE SHIFT KEYING**
Generation of QPSK modulation and demodulation using hardware.	
Week 14	**MATLAB for QPSK & DPSK**
Understand frequency domain description of amplitude modulation and frequency modulation.	