DIGITAL COMMUNICATIONS LAB

Course Code	20EC3551	Year	III	Semester	I
Course Category	Program Core	Branch	ECE	Course Type	Lab
Credits	1.5	L-T-P	0-0-3	Prerequisites	Communication Theory Lab
Continuous Internal Evaluation:	15	Semester End Evaluation:	35	Total Marks:	50

Course Outcomes	
Upon successful completion of the course, the student will be able to	
CO1	**Demonstrate** the performance of Analog to Digital Conversion techniques. (L4)
CO2	**Analyze** different Digital Modulation & Demodulation schemes (L4)
CO3	**Evaluate** various Source & Channel Coding Techniques (L5)
CO4	**Design** Multiplexing & Demultiplexing scheme (L4)
CO5	**Make** an effective report based on experiments.

Mapping of course outcomes with Program outcomes (CO/ PO/PSO Matrix)
Note: 1- Weak correlation   2-Medium correlation   3-Strong correlation
       * - Average value indicates course correlation strength with mapped PO

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO1	PSO2
CO1		2			2				3				2	
CO2		2			2				3				2	
CO3				2	2				3				2	
CO4		3			3				3				3	
CO5									3	2				
Average * (Rounded to nearest integer)		2		2	2				3	2			2	

Have to perform a minimum of 10 Experiments in the given concepts using Hardware or MATLAB programming.

Syllabus		
Expt. No.	Contents	Mapped CO
I	Generation and Reconstruction of Analog to Digital conversion. (PCM, DPCM & DELTA MODULATION)	CO1
II	Implementation of Digital Modulation & Demodulations. (BPSK,DPSK& BFSK)	CO2
III	Implementation of Source Coding Techniques. (HUFFMAN CODING, SHANNON FANO CODING & LZ CODING)	CO3
IV	Implementation of Channel Coding Techniques.	CO4

	(LINEAR BLOCK CODES, CYCLIC CODES & CONVOLUTION CODES)	
V	Implementation of Spread Spectrum concepts. (DSSS & FHSS)	CO4

NOTE: OCTAVE/MATLAB/LABVIEW software tools may be used for conducting the experiments

❖ A Minimum of TEN experiments covering all the above topics need to be conducted

Learning Resources
Text Books
1. Simon Haykin - Digital communications - John Wiley, 4th Ed.
2. John G Proakis - Digital Communications – McGraw Hill , 5th Ed., 1995
Reference Books
1. Sam Shanmugam - Analog and Digital Communication System-John Wiley and Sons,3rd Ed.,2009
e- Resources & other digital material
1.https://www.youtube.com/playlist?list=PLC7D3EAEFA0CC0420&app=desktop
2.https://nptel.ac.in/courses/108/105/108105159/