

3/4 B.Tech - FIFTH SEMESTER

EC5L1

Digital Communications Lab

Credits: 2

Lecture : ---

Internal assessment: 25 marks

Lab : 3 periods/week

Semester end examination: 50 marks

Course Objectives:

- The purpose of this lab is to train the students to analyze various base band and pass band modulation and demodulation techniques and understand their performance using both hardware and MATLAB.

Learning Outcomes:

At the end of the lab session, students are able to demonstrate

- Generation and demodulation of PCM and DM waves
- Generation and demodulation of PSK,FSK and DPSK waves.
- Study of different error control coding techniques.

NOTE: Minimum of 10 experiments has to be performed and recorded by the candidate to attain eligibility for External Practical Examination.

List of Experiments:

1. Time division multiplexing & demultiplexing.
2. Pulse code modulation & Demodulation.
3. Companding.
4. Differential pulse code modulation & Demodulation.
5. Delta modulation & Demodulation.
6. Phase shift keying modulation & Demodulation.
7. Differential phase shift keying modulation & Demodulation.
8. Frequency shift keying modulation & Demodulation.
9. Phase shift keying modulation using MATLAB
10. Frequency shift keying modulation using MATLAB
11. Direct sequence spread spectrum using MATLAB
12. Implementation of Shannon Fano coding using MATLAB.
13. Implementation of Huffman coding algorithm using MATLAB.
14. Implementation of cyclic code encoder using MATLAB.
15. Implementation of convolutional code encoder using MATLAB