# Analog and Digital Communication Lab

| Course Code | 23EC3552 | Year | III | Semester | I |
|---|---|---|---|---|---|
| Course Category | PC | Branch | ECE | Course Type | Lab |
| Credits | 1.5 | L-T-P | 0-0-3 | Prerequisites | --- |
| Continuous Internal Evaluation: | 30 | Semester End Evaluation: | 70 | Total Marks: | 100 |

| Course Outcomes | | |
|---|---|---|
| Upon successful completion of the course, the student will be able to | | BL |
| **CO1** | Analyze the parameters of Analog modulation Techniques | L4 |
| **CO2** | Analyze the parameters of Pulse modulation Techniques | L4 |
| **CO3** | Evaluate the performance baseband and Band pass modulation techniques. | L5 |
| **CO4** | Analyze the performance of source coding and channel coding techniques. | L4 |

**Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of Correlations ( 3:High, 2:Medium, 1:Low )**

| COs | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PSO1 | PSO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | | | 3 | | | 2 | | | 2 | 3 | |
| **CO2** | 3 | 3 | | | 3 | | | 2 | | | 2 | 3 | |
| **CO3** | 3 | 3 | 3 | | 3 | | | 2 | | | 2 | 3 | |
| **CO4** | 3 | 3 | | | 3 | | | 2 | | | 2 | 3 | |
| Average | 3 | 3 | 3 | | 3 | | | 2 | | | 2 | 3 | |

**Note:** All the below experiments are to be executed/completed using either hardware boards or MATLAB. Minimum of **Ten** Experiments has to be performed

| Syllabus | | |
|---|---|---|
| **Expt. No.** | **Contents** | **Mapped CO** |
| 1 | Amplitude Modulation and Demodulation | CO1 |
| 2 | DSBSC modulation and Demodulation | CO1 |
| 3 | Frequency modulation and Demodulation | CO1 |
| 4 | Pre-emphasis and De-emphasis | CO1 |
| 5 | PAM, PWM, PPM Signal Generation and Demodulation | CO2 |
| 6 | Time Division Multiplexing | CO2 |
| 7 | Verification of Sampling Theorem | CO2 |
| 8 | Pulse code modulation | CO3 |
| 9 | Delta modulation. | CO3 |
| 10 | Phase shift keying. | CO3 |
| 11 | Frequency shift keying. | CO3 |
| 12 | Spread Spectrum modulation | CO3 |
| 13 | Source Encoder and Decoder | CO4 |
| 14 | Channel Encoder and Decoder | CO4 |

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| Learning Resources |
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| **Text Books** |
| 1. Simon Haykin,Michael Moher, Communication Systems, Wiley India, 5th Ed., 2022<br>2. John G Proakis, Masoud Salehi ,Digital Communications ,McGraw Hill Education , 5th Ed., 2014 |
| **Reference Books** |
| 1. H Taub & D. Schilling, Gautam Sahe, . Principles of Communication Systems, Mc Graw Hill Education, 4th Ed.,2013<br>2. 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<br>2. https://nptel.ac.in/courses/108/105/108105159/ |