**Content for Lab Development**

* 1. Name of the Virtual Laboratory:

**Communication Systems Laboratory**

* 1. Name of the Experiment:

**AM Modulation and Demodulation**

* 1. **Objectives and Purpose of the Virtual Lab:**

**Objective:**

To Simulate virtually and Interpret Amplitude Modulation and De modulation waveforms

To Demonstrate Critical, Under and Over modulated AM waveforms

**Purpose:**

The basic knowledge of communication engineering starts with Amplitude Modulation. Interpreting AM and its waveform will simplify the understanding of other analog and digital modulation techniques.

* 1. Discipline to which the lab belongs: **Electronics and Communication Engineering**
  2. Syllabi of Lab at various universities:

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| --- | --- | --- | --- | --- | --- |
| **S.NO** | **ANNA UNIVERSITY** | **VISVESVARAYA TECHNICAL UNIVERSITY** | **INDIAN INSTITUTE OF TECHNOLOGY,**  **ROORKEY** | **JAWAHARLAL NEHRU TECHNICAL UNIVERSITY,HYDERABAD** | **NATIONAL INSTITUTE OF TECHNOLOGY –WARANGAL** |
|  | Signal Sampling and reconstruction | 10ECL58 - ANALOG COMMUNICATIONLAB + LIC LAB | ECN-352-Communication Systems Lab | **-** | EC357-Communication systems Lab |
|  | Time Division Multiplexing | 10ECL67-ADVANCED COMMUNICATION LAB | **-** | **-** | **-** |
|  | **AM Modulator and Demodulator** | **10ECL58 - ANALOG COMMUNICATIONLAB + LIC LAB** | **ECN-352-Communication Systems Lab** | **EC406PC: Analog and Digital communications lab** | **EC357-Communication systems Lab** |
|  | FM Modulator and Demodulator | 10ECL58 - ANALOG COMMUNICATIONLAB + LIC LAB | ECN-352-Communication Systems Lab | EC406PC: Analog and Digital communications lab | EC357-Communication systems Lab |
|  | Pulse Code Modulation and Demodulation | 10ECL67-ADVANCED COMMUNICATION LAB | ECN-352-Communication Systems Lab | EC406PC: Analog and Digital communications lab | EC357-Communication systems Lab |
|  | Delta Modulation and Demodulation | **-** | ECN-352-Communication Systems Lab | EC406PC: Analog and Digital communications lab | EC357-Communication systems Lab |
|  | Line coding schemes | **-** | **-** | **-** | EC357-Communication systems Lab |
|  | Simulation of ASK, FSK, and BPSK generation schemes | 10ECL67-ADVANCED COMMUNICATION LAB | ECN-352-Communication Systems Lab | EC406PC: Analog and Digital communications lab | EC357-Communication systems Lab |
|  | Simulation of DPSK, QPSK and QAM generation schemes | 10ECL67-ADVANCED COMMUNICATION LAB | **-** | EC406PC: Analog and Digital communications lab | EC357-Communication systems Lab |
|  | Simulation of signal constellations of BPSK, QPSK and QAM | 10ECL67-ADVANCED COMMUNICATION LAB | **-** | EC406PC: Analog and Digital communications lab | EC357-Communication systems Lab |
|  | Simulation of ASK, FSK and BPSK detection schemes | 10ECL67-ADVANCED COMMUNICATION LAB | **-** | EC406PC: Analog and Digital communications lab | EC357-Communication systems Lab |
|  | Simulation of Linear Block and Cyclic error control coding schemes | **-** | **-** | **-** | **-** |
|  | Simulation of Convolution coding scheme | **-** | **-** | **-** | **-** |
|  | Communication link simulation | **-** | **-** | **-** | **-** |

* 1. **List of experiments:**

Signal Sampling and reconstruction

Time Division Multiplexing

**AM Modulator and Demodulator**

FM Modulator and Demodulator

Pulse Code Modulation and Demodulation

Delta Modulation and Demodulation

Line coding schemes

Simulation of ASK, FSK, and BPSK generation schemes

Simulation of DPSK, QPSK and QAM generation schemes

Simulation of signal constellations of BPSK, QPSK and QAM

Simulation of ASK, FSK and BPSK detection schemes

Simulation of Linear Block and Cyclic error control coding schemes

Simulation of Convolution coding scheme

Communication link simulation

* 1. Target Group:

**Pre final year Students of Communication Engineering and faculty teaching engineering**