

## III B.Tech I Semester

## 15AEC29 - ANALOG COMMUNICATION SYSTEMS LAB

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**Course Objectives:**

1. To provide a real time experience for different analog modulation systems and demodulation schemes
2. To provide exposure to the real time behavior of different elements available in analog communication system such as filters, amplifiers etc
3. To perform radio receiver measurements and antenna measurements

**List of Experiments: (All Experiments are to be conducted)**

1. Amplitude modulation and demodulation.
2. Frequency modulation and demodulation.
3. Characteristics of Mixer.
4. Pre-emphasis & de-emphasis.
5. Pulse amplitude modulation & demodulation.
6. Pulse width modulation & demodulation
7. Pulse position modulation & demodulation.
8. Radio receiver measurements – sensitivity, selectivity and fidelity.
9. Measurement of half power beam width (HPBW) and gain of a half wave dipole antenna.
10. Measurement of radiation pattern of a loop antenna in principal planes.

**Equipment required for the Laboratory:**

1. Regulated Power Supply : 0 – 30 V
2. CROs: 0 – 20 M Hz.
3. Function Generators: 0 – 3 M Hz
4. RF Signal Generators: 0 – 1000 M Hz
5. Multimeters
6. Required electronic components (active and passive) for the design of experiments from 1-7
7. Radio Receiver Demo kits or Trainers.
8. RF power meter frequency range: 0 – 1000 MHz
9. Spectrum Analyzer
10. Dipole antennas (2 Nos.): 850 MHz – 1GHz
11. Loop antenna (1 no.): 850 MHz – 1GHz
12. Bread Boards

**Course Outcomes:** After completion of the course the students will be able

To experience real time behavior of different analog modulation schemes

- a Technically visualize spectra of different analog modulation schemes
- b Analyze practical behavior of different elements available in analog communication system such as filters, amplifiers etc.
- c Measure characteristics of radio receiver and antenna measurements.