

**II Year II Semester**

**Code: 17EC412**

**L T P C**

**0 0 3 2**

### **ANALOG COMMUNICATIONS LAB**

#### **Course Objectives:**

To make the students exposed on

- Various analog modulation and demodulation schemes
- Verify sampling theorem
- Analyze various modulated schemes by using spectrum analyzer
- Various associated circuits of analog modulation schemes
- Demonstrate the action of PLL

At least Ten experiments to be done using equipment and Simulink- The students have to calculate the relevant parameters

- A. Amplitude -Modulation. & DeModulation.
- B. AM - DSB SC - Modulation. & DeModulation.
- C. Spectrum Analysis of Modulated signal using Spectrum Analyzer
- D. Diode Detector
- E. FM - Modulation. & DeModulation
- F. Pre-emphasis & De-emphasis
- G. AGC Circuits
- H. Sampling Theorem
- I. Generation of IF signal using mixer circuit.
- J. PAM - Modulation. & Demodulation
- K. PWM , PPM - Modulation. & Demodulation.
- L. PLL& FM Demodulation using PLL
- M. Radio receiver characteristics

#### **Equipment& Software required:**

Software: i.) Computer Systems with latest specifications ii) Connected in Lan (Optional) iii) Operating system (Windows XP) iv) Simulations software (Simulink & MATLAB)

#### **Equipment:**

1. RPS - 0 – 30 V
2. CRO - 0 – 20 M Hz.
3. Function Generators - 0 – 1 M Hz
4. Components
5. Multimeters
6. Spectrum Analyser

**Course Outcomes:**

At the end of the course the student will be able to:

CO1: Integrate and test AM and FM modulators and demodulators

CO2: Illustrate sampling theorem in different conditions

CO3: Analyze AM and FM signals using Spectrum analyzer

CO4: Test associated circuits such as AGC, pre-emphasis and de-emphasis

CO5: Integrate and test various pulse modulation and demodulation schemes

CO6: Estimate lock range and capture range of PLL