ANALOG ELECTRONICS LAB

(Core Subject)

Course Code:	10B17EC372	Semester:	3rd Semester, B. Tech (ECE)
Credits:	1	Contact Hours:	L-0, T-0,P-2

Course Objectives

1. To provide students basic experimental experiences in constructing Analog circuits, measuring the experimental data and analysis of the results.
2. To develop skills to design various Amplifier and Oscillator Circuits using BJTs, and FETs circuits.

CourseLearning Outcomes
After studying this course the students shall be able to:

1. To acquire knowledge about electronic components and hardware devices required for designing analog electronics circuits.
2. Demonstrate basic skills on using analog electronic devices and on applying them on complex engineering problems.
3. Develop skills to build, and troubleshoot Analog circuits
4. Foster ability to identify, analyze and design of Amplifier circuits.
5. Design, construct, and take readings of various analog circuits to compare experimental results in the laboratory with theoretical analysis.

List of Experiments

1. To compare the performance of fixed bias circuit, emitter stabilized bias circuit and Voltage divider bias circuit.

2. To investigate the effect of R_2 and R_E on the stability of operating point for voltage divider bias circuit.

3. To plot the drain and transfer characteristics of a JFET in common source configuration.

4. To design single stage CE amplifier using BJT and calculate the h-parameter model.

5. To design a RC coupled amplifier and observe frequency response.

6. To plot the frequency response of RC Coupled amplifier for different values of R_E.

7. To plot the frequency response of RC Coupled amplifier for different values of C_E.

8. Design two stage RC coupled amplifier.

9. To study the performance of Darlington Pair Circuit.

10. To observe the effect of negative feedback on the performance of the amplifier.
11. To verify the operation of RC phase shift oscillator. Find the value of *R* for sustained oscillations. Also find out the frequency of oscillations.

Evaluation Scheme

1. Mid Sem Evaluation   20 Marks
2. End Sem Evaluation   20 Marks
3. Attendance   15 Marks
4. Class response   30 Marks
5. File   15 Marks

Total Marks   **100 Marks**

Text Books

1. R L Boylestad and Nachelsky: Electronic Devices & circuit Theory, 10th Ed.Pearson.

2. Adel S. Sedra, Kenneth C. Smith : Microelectronics Circuits, 5th Ed., Oxford University Press, 2004