Techno College of Engineering Agartala

An Engineering College Approved by AICTE, MHRD, Govt. of India
Affiliated to Tripura University (A Central University),
Department of Electrical Engineering

List of Laboratory Experiments

Analog Electronics Laboratory							
Course Code	**Hours / Week**				**Maximum Marks**		
PC EE 309	L	T	P	C	**CIA**	**SEE**	**Total**
	0	0	2	1	40	60	100
Number of classes: 24 hours			**Prerequisites:** Physics				
Branch: EE			**Semester: III**				

Course overview:

The Analog Electronics Laboratory is designed to provide students with practical knowledge and hands-on experience in fundamental analog electronic circuits and devices. The course covers identification and testing of passive and active components, use of electronic instruments (CRO, DMM, Function Generator), and experimental analysis of diode and transistor characteristics. Students will explore rectifiers, transistor biasing, amplifier configurations, FET operations, and oscillator circuits. This lab builds foundational skills essential for understanding, designing, and analyzing analog systems in real-world applications.

Course objectives:

1. Understand and test passive and active electronic components including resistors, capacitors, diodes, and transistors.
2. Operate and utilize electronic test equipment such as CRO, DMM, and function generators effectively.
3. Analyze and verify the characteristics of semiconductor devices like diodes and transistors through experiments.
4. Design, build, and evaluate fundamental analog circuits including rectifiers, amplifiers, and oscillators.

Course outcomes:

CO Number	CO Description	K-level
CO-1	Determine the value of Resistance by colour codes, use of different components used in Electronic Circuits and their testing methods.	K-3
CO-2	Explain the Characteristics of Diodes, Transistors and their applications.	K-2
CO-3	Demonstrate the basics of different Transtorised Amplifiers in the fields of Electrical Engineering	K-3
CO-4	Interpret the applications of Rectifiers and their characteristics.	K-2
CO-5	Explain different types of Oscillators.	K-2

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Experiment No. & Description	Mapped CO
1. Identification, Specifications, Testing of R, L, C Components (Colour Codes), Potentiometers, Switches, PCBs	CO-1
2. Study and Operation of DMM, Function Generator, Regulated Power Supply, CRO: Amplitude, Phase and Frequency	CO-1
3. Experimental Verification of PN Junction Diode Characteristics (Forward, Reverse Bias) and Zener Diode	CO-2
4. Study of Characteristics of Semiconductor Diode based Half Wave and Full Wave Rectifiers	CO-4
5. Study of Different Biasing Techniques of Transistors at Different Modes	CO-2
6. Study of Input and Output Characteristics of CE and CB Transistor Amplifiers	CO-3
7. Study of Characteristics of Class A, AB, and Push-Pull Transistorized Amplifiers	CO-3
8. Study of Drain and Transfer Characteristics of JFET in Common Source Configuration	CO-2
9. Study of Transistorized RC Phase Shift and Wien Bridge Oscillators	CO-5