

Course Name: Analog and Digital Electronic Circuits lab

Course Code: EC (EE) 391

Credit: 2

Prerequisites:

Sl. No.	Subject	Description	Level of Study
01	Analog and Digital Electronic Circuits	Theory regarding Analog and Digital electronic Circuit	B.Tech 3 rd Sem

Course Objective:

- To illustrate the students different electronic circuit and their application in practice.
- To impart knowledge on assessing performance of electronic circuit through monitoring of sensitive parameters.
- To evaluate the use of computer-based analysis tools to review performance of semiconductor device circuit.

Course Outcomes:

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

1. **Identify** relevant information to supplement to the Analog Electronic Circuit EC (EE) 301 course.
2. **Set up** testing strategies and select proper instruments to evaluate performance characteristics of electronic circuit.
3. **Choose** testing and experimental procedures on different types of electronic circuit and **analyze** their operation different operating conditions.
4. **Evaluate** possible causes of discrepancy in practical experimental observations in comparison to theory.
5. **Practice** different types of wiring and instruments connections keeping in mind technical, Economical, safety issues.
6. **Prepare** professional quality textual and graphical presentations of laboratory data and Computational results, incorporating accepted data analysis and synthesis methods, Mathematical software and word-processing tools.

CO- PO mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	3	3	-	3	3	-	3	-	3	3	-	-
2	2	2	1	2	2	2	1	3	2	3	2	3
3	3	-	3	3	2	3	-	3	2	2	3	3
4	3	-	3	-	3	3	3	-	3	-	3	-
5	1	-	3	2	2	3	1	-	3	2	1	2
6	3	3	2	3	3	2	3	3	2	3	3	2

Correlation levels 1, 2 or 3 as defined above: 1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High) and "-" if there is no correlation.

Syllabus Indicating CO:

Sl no	Experiment name	Relevant CO's
1	Study of Ripple and Regulation characteristics of full wave rectifier with and without capacitor filter.	CO1 CO2 CO3 CO4 CO5 CO6
2	Study of Zener diode as voltage regulator.	CO1 CO2 CO3 CO4 CO5 CO6
3	Construction of two stage R-C coupled amplifier & study of its gain and Bandwith.	CO1 CO2 CO3 CO4 CO5 CO6
4	Study of class A ,C & Push pull amplifier.	CO1 CO2 CO3 CO4 CO5 CO6
5	Realisation V-I & I-V converter using Operational Amplifier.	CO1 CO2 CO3 CO4 CO5 CO6
6	Study of timer circuit using NE 555 and configuration of Monostable and Astable Multivibrator.	CO1 CO2 CO3 CO4 CO5 CO6
7	Study of DAC & ADC	CO1 CO2 CO3 CO4 CO5 CO6
8	Realisation of basic gates using Universal logic gates.	CO1 CO2 CO3 CO4 CO5 CO6
9	Realisation of RS-JK & D filflop using logic gates.	CO1 CO2 CO3 CO4 CO5 CO6
10	Design of Combinational circuit for BCD to decimal conversion to drive 7-segment display using Multiplexer.	CO1 CO2 CO3 CO4 CO5 CO6
11	Realisation of Synchronous Up/Down counter.	CO1 CO2 CO3 CO4 CO5 CO6
12	Construction of simple Decoder & Multiplexer circuits using logic gates.	CO1 CO2 CO3 CO4 CO5 CO6
13	Construction of adder circuit using Shift register & Full adder.	CO1 CO2 CO3 CO4 CO5 CO6