

Branch Name:	Electrical Engineering
Program Code:	ET109
Course Name:	Analog & Digital Electronics Practical
Course Code:	2ET1090304P
Pre-requisite Course:	Fundamental Knowledge of Semiconductor physics and Basic Electronics are required

Course Objectives:

1. The course has been designed to introduce fundamental principles of analog and digital electronics.
2. The students completing this course will understand basic analog and digital electronics, including semiconductor properties, operational amplifiers, combinational and sequential logic and analog-to-digital digital-to-analog conversion techniques.
3. students will gain experience in with the design of analog amplifiers, power supplies and logic devices.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								Total (Marks)
					Theory (Marks)				Practical (Marks)				
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	-	-	-	-	10	25	10	25	50

Course Contents:

Sr. No	Detail of Practical	Contact Hours
1	Op-amp as an inverting amplifier.	04
2	Op-amp as non-inverting amplifier.	02
3	Op-amp circuit as an integrator.	02
4	Op-amp circuit as a differentiator.	02
5	Develop understanding of number systems and Boolean algebra.	04
6	Understand the functioning of logic gates, their implementation and verification of truth tables.	02
7	Develop the understanding of the working of different combinational logic circuits.	04
8	Understand and verify the working of various sequential logic circuits.	02
9	Understand simulation tools for digital logic circuits and simulation of digital logic circuits.	02
10	Understand logic analyzer for testing the logic circuits.	02
11	Understand and verify the working of Various Types of D/A and A/D converters.	02

Reference Books:

1. Digital Computer Electronics by Malvino & Brown, Tata McGraw Hil.
2. Ramakant A Gayakwad, Op- Amps and Linear Integrated Circuits, Prentice Hall of India.
3. U. A. Bakshi and A. P. Godse, Analog Electronics, Technical Publications.

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Acquire the knowledge regarding concept of Boolean algebra and its different theorems, properties etc.	2 Understanding
CLO2	Understand different flip-flops and its applications.	2 Understanding
CLO3	Capable to understand sequential logic circuits and basic design of sequential circuits and counters.	3 Applying 1 Remembering
CLO4	Know working of D/A and A/D converters.	1 Remembering
CLO5	To test circuits with op-amps and other electronics components for different applications.	4 Analyze
CLO6	Acquire knowledge regarding various circuits using different ICs.	2 Understanding

Mapping of CLOs with POs & PSOs

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	M		M			L					M		L			
CLO2	H			L	H		M			L		L		L		H
CLO3				M	L				M					M		L
CLO4		L	H		M	M						M				L
CLO5	M				L					M					M	L
CLO6		H		H	L				M		M	M	L		H	L

H: High, M: Medium, L: Low