

Course Code	Course Title	L	T	P	C
1151EC301	ANALOG INTEGRATED CIRCUITS LAB	0	0	4	2

**a) Course Category**

Program core

**b) Preamble**

The aim of this course is to understand the fundamental and design of Analog electronic circuits using transistor and op-amp.

**c) Prerequisite**

Nil

**d) Related Courses**

Nil

**e) Course Outcomes**

Upon the successful completion of the course, students will be able to

CO Nos.	Course Outcomes	Skill Level (Based on Dave's Taxonomy)
CO1	Design and construct amplifiers and Oscillators for the given parameters	S2
CO2	Demonstrate the switching characteristics of transistor in various electronics circuit such as multi-vibrator	S2
CO3	Design and construct simple mathematical circuits using Opamp	S2
CO4	Design Opamp based application circuits such as PPL, Schmitt trigger and filters etc	S2

**f) Correlation of COs with POs**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
<b>CO1</b>	H	H	M	M	M	-	-	-	-	L	-	L	M	-
<b>CO2</b>	H	H	M	M	M	-	-	-	-	L	-	L	M	-
<b>CO3</b>	H	H	-	M	-	-	-	-	-	L	-	L	M	-

## **g) Course Content**

### **List of Experiments**

#### **[Design and testing of following Circuits and Simulation using PSPICE]**

##### **CYCLE 1: (Analog Electronics Circuit)**

1. Design an amplifier using different biasing techniques.  
(Frequency Response / gain and Bandwidth Calculation)
2. Design a RC and LC oscillator.
3. Study and Construct a differential amplifier using BJT and determine its CMRR
4. Demonstrate the working of transistorized Multi-vibrator.  
(Astable/ Mono/Bistable)
5. Demonstrate the working of Class C tuned amplifier.

##### **CYCLE 2: (Linear Integrated Circuits)**

1. Design of Inverting, Non Inverting Amplifier and Adder using OPAMP
2. Design of Integrator and Differentiate using OPAMP.
3. Design of Active Low Pass and High Pass Filters Using OpAmp
4. Design of Schmitt Trigger and Phase Shift Oscillator using OpAmp.
5. Study of PLL Characteristics using Frequency Multiplier Circuits.

**Note:** Op-Amps uA741, LM 301, LM311, LM 324 & AD 633 may be used