ANALOG CIRCUITS LAB

Course Code	20EC3451	Year	II	Semester	II
Course Category	Program Core	Branch	ECE	Course Type	Lab
Credits	1.5	L-T-P	0-0-3	Prerequisites	EDAC
Continuous Internal Evaluation	15	Semester End Evaluation	35	Total Marks	50

Course Outcomes	
Upon successful completion of the course, the student will be able to	
CO1	**Analyze** the feedback amplifiers using FET (L4)
CO2	**Evaluate** the performance of Power Amplifiers using BJT(L5)
CO3	**Design** the various applications using Op-amp (L6)
CO4	**Design** the various applications using IC 555 Timer (L6)
CO5	Make an effective report based on experiments.

Mapping of course outcomes with Program outcomes (CO/ PO/PSO Matrix)

Note: 1- Weak correlation 2-Medium correlation 3-Strong correlation

* - Average value indicates course correlation strength with mapped PO

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		1			3				3				3	
CO2				2	3				3				3	
CO3			3		3				3				3	
CO4			2		3				3				3	
CO5										3				
Average* (Rounded to nearest integer)		1	3	2	3				3	3			3	

Syllabus		
Expt. No.	**Contents**	**Mapped CO**
I	Calculation of gain, input resistance, output resistance of a feedbackamplifier with and without feedback using FET	**CO1,CO5**
II	Design and verify an RC phase-shift oscillator for a given frequencyusing Op-Amp	**CO3,CO5**
III	Design and verify a Wein-bridge Oscillator for a given frequency using Op-Amp	**CO3,CO5**
IV	Design and verify a Colpitt's Oscillator for a given frequency using Op- Amp	**CO3,CO5**
V	Evaluate the Conversion efficiency of a Class A power amplifier using BJT	**CO2,CO5**
VI	Evaluate the Conversion efficiency of Class B Push - pull power amplifier using BJT	**CO2,CO5**
VII	Design and Simulate the RC differentiator using Op-Amp	**CO3,CO5**

VIII	Design and Simulate the RC integrator using Op-Amp	**CO3,CO5**
IX	Design and verify Adder and Subtractor circuits using OperationalAmplifier	**CO3,CO5**
X	Design and verify an Astable multivibrator using 555 timer	**CO4,CO5**
XI	Design and verify Monstable multivibrator using 741Op-Amp	**CO3,CO5**
XII	Design and verify Monstable multivibrator using 555 timer	**CO4,CO5**
XIII	Design and verify an Astable multivibrator using 741 Op-Amp	**CO3,CO5**
XIV	Design and verify LPF and HPF using Op-Amp	**CO3,CO5**
XV	Design and verify a 4 bit DAC using OP-Amp	**CO3,CO5**

Learning Resources

Text Books

1. Adel S. Sedra, Kenneth C. Smith, Arun N. Chandorkar, Microelectronic Circuits, 6/e,Oxford University Press, 2013.
2. D Choudhury Roy, Shail B. Jain, Linear Integrated Circuits, New Age International, 2003
3. Ramakanth Gayakward, Op-Amps and Linear Integrated Circuits, 4/e, Pearson Education,2007

Reference Books

1. Behzad Razavi, Fundamentals of Microelectronics, 2/e, Wiley Student Edition, 2013.
2. R.F Coughlin, F.F Driscoll, Op-Amps and Linear Integrated Circuits, 6/e, Pearson, 2008.
3. Sergio Franco, Design with Operational Amplifiers and Analog Integrated Circuits, 3/e,Tata Mc-Graw Hill, 2002.