

ANALOG CIRCUITS LAB

Course Code	19EC3452	Year	II	Semester	II
Course Category	Program Core	Branch	ECE	Course Type	Lab
Credits	1.5	L-T-P	0-0-3	Prerequisites	Nil
Continuous Internal Evaluation	25	Semester End Evaluation	50	Total Marks	75

Course Outcomes	
Upon successful completion of the course, the student will be able to	
CO1	Design and analyze feedback amplifiers
CO2	Design and analyze Power amplifiers and oscillators
CO3	Realize linear and non-linear applications using Op-amp
CO4	Design and understand various modes of IC 555
CO5	Analyze the performance of data converters

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3-High, 2: Medium, 1:Low)														
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	2	3							2	3	2
CO2	3	3	2	2	3							2	3	2
CO3	3	3	2	2	3							2	3	2
CO4	3	3	2	2	3							2	3	2
CO5	3	3	2	2	3							2	3	2

Syllabus		
Expt. No.	Contents	Mapped CO
I	Calculation of gain, input resistance, output resistance of a feedback amplifier with and without feedback using FET	CO1
II	Design and verify an RC phase-shift oscillator for a given frequency using Op-Amp	CO1
III	Design and verify a Wein-bridge Oscillator for a given frequency using Op-Amp	CO1
IV	Design and verify a Colpitt's Oscillator for a given frequency using Op-Amp	CO2
V	Evaluate the Conversion efficiency of a Class A power amplifier using BJT	CO2
VI	Evaluate the Conversion efficiency of Class B Push - pull power amplifier using BJT	CO2
VII	Design and Simulate the RC differentiator using Op-Amp	CO2
VIII	Design and Simulate the RC integrator using Op-Amp	CO3
IX	Design and verify Adder and Subtractor circuits using Operational Amplifier	CO3
X	Design and verify an Astable multivibrator using 555 timer	CO4
XI	Design and verify Monstable multivibrator using 741Op-Amp	CO3
XII	Design and verify Monstable multivibrator using 555 timer	CO4

XIII	Design and verify an Astable multivibrator using 741 Op-Amp	CO3
XIV	Design and verify LPF and HPF using Op-Amp	CO3
XV	Design and verify a 4 bit DAC using OP-Amp	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 Education, 2008.
3. Sergio Franco, Design with Operational Amplifiers and Analog Integrated Circuits, 3/e, Tata Mc-Graw Hill, 2002.
