S. No.	Course Code	Course Name	Course Type	Cd	L	T	P	Marks		
								Sessional	Final Exam	Total
1	ECE-301	Electronic Devices and Circuits	PCC	4	3	1	0	50	100	150

Course Outcomes:

At the end of the course the student will be able to:	
CO1	Understand the multistage amplifiers and different coupling methods.
CO2	Analyze different topologies of feedback amplifiers.
CO3	Understand the concepts to design various oscillators.
CO4	Classify different power amplifiers and analyze distortions
CO5	Illustrate various OP-AMP functions to design linear integrated circuits

Detailed Syllabus

Section-A

Unit 1: Need of cascading for Single and Multistage Amplifiers, Techniques for improving input resistance (Darlington transistor, Bootstrap emitter follower amplifiers), method of coupling multistage amplifiers (RC coupling, DC coupling, transformer coupling), Frequency response of amplifiers, Effect of emitter and bypass capacitors on the bandwidth and frequency response of a cascaded amplifiers.

(12 Hrs)

Unit 2: Feedback Amplifier, Need for feedback, Feedback concept, Gain with and without feedback, negative feedback, output resistance and bandwidth of the amplifier, their respective analysis for feedback amplifiers, Procedure for analysis of feedback amplifiers, Analysis of different topologies.

(10 Hrs)

Unit 3: Sinusoidal Oscillators Introduction, Barkhausen Criteria, Requirements of oscillators, Types of oscillators (RC phase shift, Wien Bridge, LC, Crystal).

(8 Hrs)

Section-B

Unit 4: Power Amplifiers Introduction, Classification of power amplifiers, crossover distortion, harmonic distortion in power amplifiers.

(7 Hrs)

Unit 5: Operational Amplifiers: Block Diagram of Op-Amp, Ideal & Practical Op-Amp & Characteristics, measurement of Op-Amp parameters, Inverting and Non-Inverting configuration, Comparator, Schmitt Trigger, Differentiator, Integrator, Op-Amp Waveform generators (sawtooth, triangular, square wave), 555 Timers.

(9 Hrs)

Text Books

S.No	Name of Books	Name of Author	Publisher Name	Edition (Pub. Yr.)
1	Electronic Devices & Circuit Theory	Boylstead	Pearson Education	11th (2015)
2	Op-Amps and Linear Integrated circuits	Ramakant A. Gayakwad	PHI	4th (2002)

Reference Books

S.No	Name of Books	Name of Author	Publisher Name	Edition (Pub. Yr.)
1	Microelectronic Circuits	Adel S. Sedra and Kenneth C. Smith	Oxford University Press	7th (2014)
2	Electronic Principles	Malvino Leach	TMH	7th (2017)