

# ANALOG INTEGRATED ELECTRONICS

EEC – 509

L T P: 3 1 0

Units	Topics	No. of Lectures	Remarks
I	<b>Frequency response and stability of an Op-Amp:</b> Frequency response, Compensating networks, Frequency response of internally compensated and uncompensated Op-Amps, High frequency Op-Amp's equivalent circuit, stability in constant GBP Op-Amp circuits.	8	
II	<b>Op-Amp Circuits Applications:</b> Current to Voltage (I to V) converters, V to I converters, Current Amplifier, Difference Amplifiers, Instrumentation Amplifiers, Integrators and Differentiators.	8	
III	<b>Active filters and Converters:</b> First and second order low pass and High pass filters, Band Pass and Band Reject filters, All-Pass filter, Filter design using MATLAB. Voltage to Frequency and Frequency to voltage Converters, Analog to Digital and Digital to Analog Converters.	8	
IV	<b>Non Linear Circuits and Regulators:</b> Voltage Comparators, Precision Rectifiers, Schmitt Triggers, Analog Switches, Peak detectors, Sample and Hold circuit, Square and Triangular Wave Generators, Linear Regulators, Switching Regulators.	8	
V	<b>Non Linear Amplifiers and Phase-Locked Loops:</b> Log/Antilog Amplifiers, Analog Multipliers, Operational Trans conductance Amplifiers (OTAs), Phase-Locked loops (PLL), Monolithic PLLs, Noise in Integrated Circuits.	8	

## Text Books:

1. Franco Sergio, "Design with Operational Amplifiers and Analog Integrated Circuits" Tata McGraw-Hill.
2. Ramakant A. Gayakwad, "Op-Amps and Linear Integrated Circuits" Prentice Hall of India.

## Reference Books:

1. James M. Fiore, "Op-Amps and Linear Integrated Circuits: Theory and Applications", Thomson Asia Pvt. Ltd., Singapore.
2. J. Millman and C. Halkias, "Integrated Electronics Analog and Digital Circuits and Systems", McGraw Hill.
3. S. Soclof, "Application of Analog Integrated Circuits", Prentice Hall of India.
4. David Bell, "Operational Amplifiers and Linear ICS", Prentice Hall of India.