

**SIR PADAMPAT SINGHANIA UNIVERSITY**  
**School of Engineering**

**COURSE PLAN**

Name of the Course Teacher : Shilpi Birla  
 Subject : Integrated Circuits & Applications  
 Branch: E& CE Semester: IV Year: II  
 Course Code: EC 207 L-T-P-C: 3-0-1-4 **w.e.f. 29.12.2009**

Sr. No.	Topic	Contact Hours (Lectures)
1.	Basic differential amplifier analysis, Op-Amp configurations, Op-Amp parameters	1
2.	Characteristics and performance parameters of an Op-Amp, Ideal Op-Amp	1
3.	Equivalent circuit of an Op-Amp, Open loop configurations: Differential	1
4.	Inverting & Non Inverting. Practical Op-Amp	1
5.	Input offset voltage, Input bias current, Input offset current	1
6.	Common Mode configuration and Common Mode Rejection Ratio. Frequency response of Op-Amp.	1
7.	Closed loop frequency response, Slew rate, causes of slew rate.	1
8.	Inverting Amplifier Configuration and its derivation	1
9.	Non-Inverting configuration and its derivation	1
10.	Summing, Weighted and Averaging Amplifier	1
11.	Instrumentation Amplifier, Comparator	1
12.	Voltage to Current and Current to Voltage converter	1
13.	Integrating & differentiating amplifiers	1
14.	Log and Antilog Amplifier	1
15.	Voltage Controlled Oscillators	1
16.	Phase shift oscillator	1
17.	Wein Bridge Oscillator	1
18.	Square wave generator	1
19.	Triangular wave generator, Saw-tooth wave generator	1
20.	Basic comparator, Zero crossing, detector	1
21.	Schmitt trigger, Sample & Hold Circuits	1
22.	Distinction between passive & active filter, Active filters & their types	1

23	Design of First Order & higher order Low Pass Filter	1
24	Design of First Order & higher order High Pass Filter	1
25	Design of Band Pass filter	1
26	Design of Band Reject filter	1
27	Design of All Pass filter	1
28	Basic blocks of linear IC voltage regulators	1
29	Three terminal voltage regulators.	1
30	Positive and negative voltage regulators	1
31	Voltage regulators using LM317	1
32	Block diagram & schematic of IC 555	1
33	Internal working of IC 555	1
34	Working of timer 555 as Astable multivibrator	1
35	Various Applications of Astable Multivibrator	1
36	Working of timer 555 as Bistable multivibrator and its applications	1
37	Operation of phase locks loop system. Lock range and capture range of PLL	1
38	Study of PLL IC-LM 565	1
39	Applications as AM detector, FM detector	1
40	Applications as frequency translator	1
<b>Total Lectures-40</b>		

Head E& CE