

## CMOS ANALOG CIRCUIT DESIGN LECTURES

Lecture Number	Section Number	Topic
1	1.1-1.4	Introduction
2	2.1	Submicron CMOS Technology
3	2.1	Deep Submicron CMOS Technology
4	-	Ultra-Deep Submicron CMOS and BiCMOS Technology
5	2.2	PN Junctions and CMOS Transistors
6	2.4	Capacitors
7	2.4	Resistors and Inductors
8	-	Latchup and ESD
9	3.1	Large Signal MOSFET Model
10	3.2	MOSFET Capacitor Model and Large Signal Model Dependence
11	3.3	Small Signal Models, Noise, Passive Component Models
12	-	Component Matching
13	3.6	Computer Models and Extraction of the Simple Large Signal Model
14	4.1	MOS Switch
15	4.3	Current Sinks and Sources
16	4.4-4.5	Current Mirrors and Simple References
17	4.6	Bandgap References
18	5.1	Inverting Amplifier
19	5.2	Differential Amplifier
20	5.3	Low Input Resistance Amplifiers – CG, Cascode and Current Amplifiers
21	5.4	Output Amplifiers
22	6.1-6.2	Compensation of Op Amps
23	6.3	Two-stage Op Amp Design
24	6.4-6.5	Cascode Op Amps
25	6.6	Simulation and Measurement of Op Amps
26	7.1	Buffered Op Amps
27	7.2	High Speed Op Amps
28	7.3	Differential-In, Differential-Out Op Amps
29	7.4	Low Noise and Low Power Op Amps
30	7.5	Low Voltage Op Amps
31	8.1	Open-Loop Comparators
32	8.2	Improved Open-Loop Comparators and Latches
33	8.3	High speed comparators
34	10.1	Characterization of DACs and Current Scaling DACs
35	10.2	Voltage, Charge Scaling and Serial DACs, Improved Resolution
36	10.3	Characterization of ADCs and Sample and Hold Circuits
37	10.4	Moderate Speed Nyquist ADCs
38	10.5	High Speed Nyquist ADCs
39	10.6	Oversampling ADCs – Part I
40	10.7	Oversampling ADCs – Part II