This course deals with fundamental building blocks (sub-circuits) of analog integrated circuits and design of analog integrated circuits using SPICE as the simulation tool.

The following topics will be covered: Dates on which the topics are covered are also indicated.

1. CMOS Device Modeling: Large-Signal and Small-Signal MOS Transistor Models: 8/30
2. Differential Amplifiers: 9/6, 9/13
3. Passive and Active Current Mirrors, 9/20, 9/27
4. Operational Amplifiers: 10/4, 10/11 (Project – I due), 10/18 (Exam – I), 10/25
5. Stability and Frequency Compensation of Amplifiers: 11/1, 11/8
7. Switched-Capacitor Circuits: 11/29 (Project – II due)
8. Noise: 12/6

Projects: This course has two design projects. One on actively loaded differential amplifier and the second on operational amplifier.


Grading: 2 Exams - 70%, Projects - 25 %, Homework - 5 %

Late projects or homeworks will not be accepted.