Course Objective: This course focuses on analog integrated circuit design in the CMOS technology for various applications such as communications, sensors, instruments, data converters, and PLLs. Topics covered include MOS devices and models, amplifiers, current mirrors, frequency responses, operational amplifiers; and Bandgap references.

Learning Outcomes:
1. Describe the models for active devices in MOS IC technology.
2. Analyze and design CMOS current sources and voltage references.
3. Analyze and design CMOS operational amplifiers and Bandgap references.
4. Analyze circuits noise performance

Office Hours: 4111, Faculty Block 4; After class, or by appointment.

References: This is a restricted list of various interesting and useful books

Prerequisites:
EL213 Analog Circuits
EL103 Basic Electronics Circuits

Tentative Grading Policy: Homework and quizzes (20%), Project (10%), Mid Exam (30%), Final Exam (40%).

Teaching Assistants: TBA

Course Policies:
- General
– Quizzes and exams are closed book, closed notes.
– No makeup quizzes or exams will be given.

• Labs and Assignments
  – Students are expected to work independently. Offering and accepting solutions from others is an act of plagiarism, which is a serious offense and all involved parties will be penalized according to the Academic Honesty Policy.
  – No late assignments will be accepted under any circumstances.

• Attendance and Absences
  – 80% Attendance is expected and will be taken in each class/lab
  – Students are responsible for all missed work, regardless of the reason for absence. It is also the absentee’s responsibility to get all missing notes or materials.

**Tentative Course Outline**: The weekly coverage might change as it depends on the progress of the class.

1. Basic MOS Devices
2. Single Stage Amplifiers
3. Differential Amplifiers
4. Current Mirrors
5. Frequency Response of Amplifiers
6. Noise Analysis of Amplifiers
8. Band Gap References