Course Syllabus

Lectures: TBD

Instructor: Jason Silver
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Teaching Assistant: TBD
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Course Description:
In this course, we will focus on theoretical and practical aspects of CMOS Integrated Circuit Design, with an emphasis on transistor-level analog circuit analysis and design. Our study will include a brief review of MOS device physics, an investigation of amplifier topologies, feedback, stability, and practical simulation and implementation issues. Although there are no official prerequisites for the course, you should be very comfortable with basic circuit theory and analysis techniques before enrolling.

After completing the course, students will have developed the insight and experience essential to the design of transistor-level integrated circuit building blocks (single-stage amplifiers, OTA/opamp design, bias circuits).

Weekly assignments will be given that match the lecture and textbook. These assignments will involve hand analysis, computer simulation, and a significant design component. Emphasis will be placed on conceptual understanding, “back-of-the-envelope” calculations/analysis, and circuit intuition.

There will be a single exam covering material from the entire course. The exam will be “take-home” format due to the online nature of the course.

Design Project:
Several design projects will be assigned. These projects will involve the design and simulation of integrated circuit blocks towards specifications which will be provided in class.
**Grading:**
- Weekly Assignments: 40%
- Midterm Exam 1: 20%
- Design Projects: 40%

Please submit your work by the assigned due dates. No late homework or projects will be accepted unless approved in advance by the instructor.