EE P 538 Analog Integrated Circuit Design
University of Washington Electrical & Computer Engineering
Winter Quarter 2021

Course Syllabus

Lectures: TBD

Instructor: Jason Silver
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Teaching Assistant: TBD
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Required Textbook: B. Razavi, *Design of Analog CMOS Integrated Circuits*, 2nd Ed, McGraw-Hill, 2016.

Additional References: Gray, Hurst, Lewis, Meyer, *Analysis and Design of Analog Integrated Circuits*, 5th Ed, Wiley, 2009.

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.