Spring 2018, ESE 311: Analog Integrated Circuits
Instructor: Dmitri Donetski, e-mail: dmitri.donetski@stonybrook.edu
Office Hours: Tues, Thurs, 3-5 PM, 247 Light Eng.

Prerequisites: ESE 372, Electronics
Description: Engineering design concepts applied to electronic circuits; basic network concepts, computational analysis and design technique; models of electronic devices; biasing and compensation methods; operational amplifiers designed by conventional and computer-aided techniques.

Lectures: 128 Chemistry, Mon, Wed, 2:30-3:50 PM


Grading: 11 homeworks (11 pts), 5 simulation assignments (5 pts), project (15 pts), 2 quizzes (4 pts), test 1 (10 pts), test 2 (20 pts), final exam (30 pts), portfolio (5 pts)

Topical outline:

1. MOSFET and BJT parameters: fabrication technology of integrated circuits, - 10%
2. Single-ended amplifiers: biasing, active load, frequency response, Miller’s theorem, cascode amplifier - 20%
2. Differential amplifiers: differential pairs with active load, differential gain, common-mode gain, common-mode rejection ratio, non-ideal characteristics, frequency response - 30%
3. Negative feedback: four basic feedback topologies, loop gain, stability and pole location, frequency compensation - 20%
4. Operational Amplifiers: OpAmp architectures, two-stage and folded cascode amplifiers, DC and small signal parameters, frequency response, slew rate - 20%

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Any suspected instance of academic dishonesty will be reported to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/uaa/academicjudiciary/