Description: EE353: Electronic Circuits Laboratory, Credit: 3
An engineering design lab. 50 min lecture and 230 min of lab per week. Design, analysis, and characterization of electronic circuits using FET, BJT, opamp, and optoelectronic devices.

Coordinator: Pao-Lo Liu, Professor
Goals: Students gain laboratory experiences and learn how electronic circuits work by performing experiments. They will also learn computer automated data acquisition and analysis. They will be able to design application circuits and perform diagnosis after taking the course.

Prerequisite: EE202, 203, 310, 352, Circuits and Physical Electronics
Corequisite: ECE311 Electronic Circuits

Topics:
1. Introduction to Electronic Circuits Laboratory
2. Operational Amplifier*
3. Field-Effect Transistor Amplifier
4. MOSFET*
5. Bipolar Junction Transistor Amplifier*
6. Two-Stage Amplifier
7. Differential Amplifier*
8. Multiple Stage Amplifier Design*
9. Applications of Operational Amplifiers*
10. Computer-Assisted Data Acquisition and Analysis*
11. Amplifiers With Negative Feedback*
12. Electronic Alarm
13. Traffic Controller
14. Optical Transceiver
15. Counter

Laboratory Projects: Ten projects, including, all experiments marked with "*"; one from Exp. 12, 13; and one from Exp. 14, 15.

ABET Category: Engineering Science, 33%; Engineering Design, 67%

Grading: Summary (3 Exp.) - 30 pts
Report (2 Exp.) - 30 pts
Written Examination - 20 pts, open book, all materials covered.
In-Lab Examination - 20 pts, perform one project (Exp. 2-15).
Total: 100 pts = 100%
88-100% A- to A, 78-87% B- to B+, 68-77% C- to C+, 58-67% D- to D+, <57% F

Schedule: Lecture: Th. 5:00-5:50 pm Norton 218
Laboratories: ML1 Mon. 1:00-4:50 pm, MFL Tue. 5:00-8:50 pm
ML3 Wed. 1:00-4:50 pm

Office Hour: Mon. 11:00-12:00, Bonner 215A, 645-2422x1207, paololiu@eng.buffalo.edu