EE 322 Advanced Analog Electronics

Course title:
Advanced Analog Electronics

Instructor:
Dr. Anders M. Jorgensen
Workman 227
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Class hours:
Monday, Wednesday, Friday 10:00-10:50
Occasionally Monday 13-13:50 or Wednesday 9-9:50

Classroom location:
Cramer 239
TBD

Laboratory hours:
Monday 14:00-16:45

Laboratory location:
Workman 189

Office hours:
Monday 8-10
Wednesday 8-9

Textbooks:

1. *Adel S. Sedra and Kenneth C. Smith*, Microelectronic Circuits, Fifth edition, Oxford University Press. (This is the textbook for EE 321)
2. *Paul Horowitz and Winfield Hill* , The Art of Electronics, Second edition, Cambridge University Press. (This book is available at the NMT bookstore)
3. *Ron Mancini, ed.*, Op Amps For Everyone, September 2001 edition. (This book is available as a pdf from the course website)

Learning objectives:

1. Apply basic concepts from previous courses to practical analog circuits and techniques.
2. Learn principles and good experimental technique through laboratory exercises.
3. Exposure to a selected variety of practical circuits.
4. Be able to use a new circuit or IC after reading the section in 'Horowitz and Hill' and the spec sheet.

Prerequisites:

EE 231 and EE 231L, EE 321 and 321L, EE 341.
EE 322 and EE 322L are integrated and must be taken together.

Topics covered:

1. Linear voltage regulators
2. Switching voltage regulators
3. Interference and grounding
4. Noise in circuits
5. Oscillators and comparators
6. Timers
7. Active filters
8. Phase-locked loops
9. Feedback op-amps and stability
10. Differential amplifiers

Course work:

1. Reading. You are expected to keep up with the course by reading the assigned sections in the books.
2. Do the suggested homework, although it is not graded, as preparation for exams and quizes.
3. Laboratory exercise. Scheduled most weeks.
4. Exams. There are three exams during the semester and one during finals week. They count equally.
5. Weekly quiz.

Grading policy:

EE 322

1. Quiz 40%, two dropped.
2. Exams 60%, one dropped.

EE 322L

Laboratory reports are graded, one laboratory report is dropped.