

Fall 2015
TR 9:35 – 10:50
Room 1003 ETB

ELEN 457

OPERATIONAL AMPLIFIERS AND APPLICATIONS

Instructor: **Edgar Sánchez-Sinencio**

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Office Hours: 11:00 – 12:00 p.m. MW

Text: S. Franco, “*Design with Operational Amplifiers and Analog Integrated Circuits*,” New York, McGraw-Hill (3rd Edition) 2001

Reference: E.J. Kennedy, “*Operational Amplifier Circuits Theory and Applications*,” Holt, Rienhart and Winston, Inc. 1988.

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Emphasis will be placed on basic concepts, op amp practical circuits and applications. The topics covered in this course aims at developing op amp circuit design applications expertise in the student through quick approximation circuit analysis and reinforced through more precise circuit simulation. Obtain your computer account and a SPICE manual as soon as possible.

Grading Policy

Term Paper	15% (due Nov. 26, 2015)
6 Laboratories	24%
Two Midterm Exams	30%
Final Exam	20%
Homework Assignments	6%
Weekly Quizzes	5%

Term Paper could consist of:

- A title, an abstract indicating the application, introduction and motivation, main discussion section, conclusion and references.
- Special Hardware Projects chosen by you, ideas from *Popular Electronics Magazine* or other trade-magazine are acceptable. You will need to include the theoretical aspects of the design that is a justification of the design is mandatory. Experimental vs. theoretical results are needed, including a working prototype with a printed circuit is desirable.

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ECEN 457 (ESS)
TENTATIVE COURSE SCHEDULE

Week	Date	Topic	Reference Chapter	Activity
1	Sept. 1 & 4	Introduction & Motivation OP Amp Fundamentals	1	
2	Sept.8 & 11	Circuits with Resistive Feedback	1, 2	Lab 1
3	Sept 15 & 17	Basic Operators: Differential, Integrator, Low Pass	3	
4	Sept.22 & 24	Filters	3.1, 3.7	Lab 2
5	Sept. 29 & Oct. 1	Static Op Amp Limitations	5	EXAM 1
6	Oct. 6 & 8	Dynamic Op Amp Limitations	6	
7	Oct. 13 & 15	Noise	7	Lab 3
8	Oct.20 & 22	Nonlinear Circuits	9	
9	Oct.27 & 29	Signal Generators	10	Lab 4
10	Nov. 3 & 5	Signal Generators	10	
11	Nov.10 & 12	Voltage Reference and Linear Regulators	11	EXAM 2
12	Nov.17 & 19	Regulators	11	Lab 5
13	Nov. 24	Operational Transconductance Amplifier	13.3 + Notes	
	Nov. 26-27	THANKSGIVING HOLIDAY		
14	Dec. 1 & 3	Multipliers	13.2 + Notes	Lab 6
15	Dec. 8	Review	-----	Discussion on final exams and Mid-term

Academic Integrity Statement

“An Aggie does not lie, cheat, or steal or tolerate those who do.”

Honor Council Rules and Procedures are on the web <http://www.tamu.edu/aggiehonor>

Final Exam on Friday, Dec. 11 from 12:30-2:30 p.m.