

San José State University
Electrical Engineering Department
EE210, Linear Systems, Fall 2009

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Office Hours:	MW 16:30-19:00pm (tentative). Other days by appointment
Class Days/Time:	TTh 19:30-20:45
Classroom:	ENGR 405
Prerequisites:	Graduate standing

Web Page

Located at <http://www.engr.sjsu.edu/rmorelos/ee210f09>

Course Description

Continuous and discrete convolution and correlation. Review of transform theory. Two-side transforms, including continuous and discrete Fourier transforms. Continuous and discrete state variable theory. Applications and computer simulations.

Course Goals and Student Learning Objectives

1. Understand the definitions and analytical tools of linear, time-invariant, causal systems.
2. Understand and analyze linear, time-invariant systems in terms of eigenvectors and eigenvalues.
3. Analyze periodic signals in terms of Fourier series.
4. Analyze linear, time-invariant systems in terms of Fourier transforms
5. Model continuous- and discrete-time systems by state-space techniques.
6. Analyze continuous-time, linear, time-invariant systems in terms of Laplace Transforms and their region of convergence.
7. Analyze discrete-time, linear, time-invariant systems in terms of Z-Transforms.

Required Texts/Readings

Textbook

Oppenheim, *Signals and Systems*, 2nd Ed., Prentice Hall, 1997.

Other Readings

Sturm and Kirk, *Contemporary Linear Systems using MATLAB*, PWS, 1999

Other material

Handouts either posted on the web page or distributed in class.

Classroom Protocol

Students will turn their cell phones off or put them on vibrate mode while in class. They will not answer their phones in class. Students whose phones disrupt the course and do not stop when requested by the instructor will be referred to the Judicial Affairs Officer of the University.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. Information on add/drops are available at <http://info.sjsu.edu/web-dbggen/narr/soc-fall/rec-298.html>. Information about late drop is available at <http://www.sjsu.edu/sac/advising/latedrops/policy/>. Students should be aware of the current deadlines and penalties for adding and dropping classes.

Grading Policy

Assignments	10 %
Midterm exam 1	20 %
Midterm exam 2	30 %
Final exam	40 %
Total	100%

Notes

- a. All exams are open book and notes.
- b. Homework assignments will be given regularly and due one week from the assigned date. Late homework will not be accepted.

Grading Percentage

94% and above	A
93% - 90%	A-
89% - 87%	B+
86% - 84%	B
83% - 80%	B-
79% - 77%	C+
76% - 74%	C
73% - 70%	C-
69% - 67%	D+
66% - 64%	D
63% - 60%	D-
below 60%	F

EE210, Linear Systems, Fall 2009 Course Schedule (subject to change with fair notice)

Week	Date	Lecture Topics
1	8/25	Introduction. Review of signals and systems
2	9/1	LTI systems and convolution
3	9/8	Properties of LTI systems
4	9/15	LTI systems specified by differential and difference equations
5	9/22	Eigenfunctions, eigenvalues and Fourier series
6	9/29	Review. Midterm exam 1 on 10/1/09
7	10/6	Fourier analysis of continuous-time signals

Week	Date	Lecture Topics
8	10/13	Fourier analysis of continuous-time LTI systems
9	10/20	Fourier analysis of discrete-time signals
10	10/27	Fourier analysis of discrete-time LTI systems
11	11/3	Filters, sampling, interpolation and decimation
12	11/10	Review. Midterm exam 2 on 11/12/09
13	11/17	The Laplace transform and its properties
14	11/24	Continuous-time LTI system analysis using the Laplace transform
15	12/1	The z-transform and its properties
16	12/8	Discrete-time LTI system analysis using the z-transform
Final Exam	12/15	19:45-22:00

University Policies

Academic integrity

Students should know that the University's Academic Integrity Policy is available at http://www.sa.sjsu.edu/download/judicial_affairs/Academic_Integrity_Policy_S07-2.pdf. Your own commitment to learning, as evidenced by your enrollment at San Jose State University and the University's integrity policy, require you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The website for Student Conduct and Ethical Development is available at http://www.sa.sjsu.edu/judicial_affairs/index.html.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include in your assignment any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Policy F06-1 requires approval of instructors.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the DRC (Disability Resource Center) to establish a record of their disability.

EE Department honor code

The Electrical Engineering Department will enforce the following Honor Code that must be read and accepted by all students.

“I have read the Honor Code and agree with its provisions. My continued enrollment in this course constitutes full acceptance of this code. I will NOT:

- Take an exam in place of someone else, or have someone take an exam in my place
- Give information or receive information from another person during an exam
- Use more reference material during an exam than is allowed by the instructor
- Obtain a copy of an exam prior to the time it is given
- Alter an exam after it has been graded and then return it to the instructor for re-grading
- Leave the exam room without returning the exam to the instructor.’’

Measures Dealing with Occurrences of Cheating

Department policy mandates that the student or students involved in cheating will receive an “F” on that evaluation instrument (paper, exam, project, homework, etc.) and will be reported to the Department and the University. A student’s second offense in any course will result in a Department recommendation of suspension from the University.