

EE 350 – Continuous Time Linear Systems

Course Overview

Purpose: Through an emphasis on problem solving, this course provides students with a working knowledge of linear systems and how they interact with continuous-time signals. The skills and knowledge gained in this course are essential to the analysis and design of systems in diverse technical areas such as communications (television, radio, cellular telephone), signal processing (radar, sonar, speech processing, audio), and automatic control (industrial process control, automotive cruise control, airplane flight control). This course provides the foundation for several technical electives including: i) EE 311 Electronic Circuit Design II ii) EE 412 Optical Fiber Communications iii) EE 365 Energy Conversion iv) EE 423 Power Electronics v) EE 367 Introduction to Communications Systems vi) EE 380 Linear Control Systems.

Prerequisites: MATH 220, MATH 250 (or MATH 251) and EE 210 (a grade of C or better is required).

Class Schedule: M. W. F. 12:20-1:10 pm, Room 220 Hammond Bldg

Instructor: Constantino Lagoa
Room 205 EE West
phone: 865-0244,
e-mail: cml18@psu.edu

Office Hours: Tu. Th. 11:00-12:00 or by appointment

TAs: Yuxuan He yzh5474@psu.edu
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TA Office Hours: By Appointment.

Web Page: <https://psu.instructure.com>

EE 350 – Handout #2

Course Organization

Grading: Homework: 15%; Midterm Tests: 20% each; Final: 25%.
Attendance of recitations will count as one homework.

Exams: Midterm 1 on 02/01/2024 at 8:00 pm
Midterm 2 on 02/29/2024 at 8:00 pm
Midterm 3 on 04/04/2024 at 8:00 pm
Final on exam week (date TBA)
All exams are closed book but calculators are permitted. The Final is comprehensive.

Recitations: At the start of each recitation you will have the opportunity to ask questions regarding lecture material and homework sets. However, the instructor will not solve homework problems before their due date!

Homework: The homework problems will be handed out on Fridays and simultaneously posted on the course website. They will be due a week later **in the homework slot**. Solutions will be posted on the course website. The students are responsible for knowing which problems were given in class. Please contact other students if you miss a lecture. Late homework **will not** be accepted unless you have a very good reason and you get my permission. Students are encouraged to get together to discuss the homework but the work that you hand in should be your own.

Computer Use: Matlab.

Textbook: B. P. Lathi, Signal Processing and Linear Systems, Berkeley-Cambridge, 1998.

Lagoa Spring 2024

EE 350 – Handout #3

Syllabus

The course will cover Chapters 1,2,3,4,6 and first two sections of Chapter 7 of the textbook (not necessarily in this order).

1. Course Overview.
2. Introduction to Signals and Systems.
3. Classical Solution of Ordinary Differential Equations (ODEs).
4. Stability.
5. Signal Representation by Fourier Series.
6. Signal Analysis: The Fourier Transform.
7. System Analysis Using Laplace Transform.
8. Frequency Response.

Exam Proctoring

This course may require you to take exams using certain proctoring software that uses your computer's webcam or other technology to monitor and/or record your activity during exams. The proctoring software may be listening to you, monitoring your computer screen, viewing you and your surroundings, recording and storing any and all activity (including visual and audio recordings) during the proctoring process. By enrolling in this course, you consent to the use of the proctoring software selected by your instructor, including but not limited to any audio and/or visual monitoring which may be recorded. **Please contact your instructor with any questions.**

Academic Integrity

Academic integrity is the pursuit of scholarly activity in an open, honest and responsible manner. Academic integrity is a basic guiding principle for all academic activity at The Pennsylvania State University, and all members of the University community are expected to act in accordance with this principle. Consistent with this expectation, the University's Code of Conduct states that all students should act with personal integrity, respect other students' dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts.

Academic integrity includes a commitment by all members of the University community not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others.

Accommodating Students with Disabilities

Penn State welcomes students with disabilities into the University's educational programs. Every Penn State campus has an office for students with disabilities. Student Disability Resources (SDR) website provides [contact information for every Penn State campus](#). For further information, please visit [Student Disability Resources website](#).

In order to receive consideration for reasonable accommodations, you must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: [See documentation guidelines](#). If the documentation supports your request for reasonable accommodations, your campus disability services office will provide you with an accommodation letter. Please share this letter with your instructors and discuss the accommodations with them as early as possible. You must follow this process for every semester that you request accommodations.

Counseling and Psychological Services

Many students at Penn State face personal challenges or have psychological needs that may interfere with their academic progress, social development, or emotional wellbeing. The university offers a variety of confidential services to help you through difficult times, including individual and group counseling, crisis intervention, consultations, online chats, and mental

health screenings. These services are provided by staff who welcome all students and embrace a philosophy respectful of clients' cultural and religious backgrounds, and sensitive to differences in race, ability, gender identity and sexual orientation.

[Counseling and Psychological Services at University Park \(CAPS\)](#): 814-863-0395

Counseling and Psychological Services at [Commonwealth Campuses](#)

Penn State Crisis Line (24 hours/7 days/week): 877-229-6400

Crisis Text Line (24 hours/7 days/week): Text LIONS to 741741

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Accommodating Military Personnel

Veterans and currently serving military personnel and/or spouses with unique circumstances (e.g., upcoming deployments, drill/duty requirements, disabilities, VA appointments, etc.) are welcome and encouraged to communicate these, in advance if possible, to the instructor in the case that special arrangements need to be made.

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