

CSE 361: Linear Systems 4 Credits – Winter 2020-21

Course Logistics

Time and Location:

- Lecture: Tu 1:30 PM - 4:45 PM
- Format: Online Synchronous

Instructor:

- Dr. Umer Huzaifa (mhuzaifa@depaul.edu)
- Please include "[CSE 361]" in your email subject line.
- Office Hours: M 02:00 PM – 03:00 PM, Th 02:00 PM – 03:00 PM

Recommended Textbook:

- Design of Feedback Control Systems, by Stefani, Shahian, Savant, and Hostetter. Oxford University Press
- Linear Systems Theory, by João P. Hespanha

Online Resources:

- D2L CSE 361 page
- Discord group [link](#)

Catalog Description

A comprehensive overview of modeling and analysis of dynamic systems including mechanical, electrical, electro-mechanical, thermal, and fluid systems. Topics include modeling using state-variable equations, input-output differential equations, transfer functions, and block diagrams, analytical solutions using the Laplace transform, and applications to modeling and designing feedback control systems.

After you have taken this class, you will:

- be able to mathematically model a given dynamical system
- be able to determine system representations like input-output differential equations, state space, and transfer functions
- be able to determine key properties from finding the solutions to differential equations
- be able to design a feedback controller for these systems

Prerequisites: CSE 333 (Cyber-physical Systems Engineering III) and MAT 304 (Differential Equations)

Evaluation and Grading

Attendance:

Mandatory. In case of an event that prohibits you to join the class, you must inform the instructor in advance.

Grading:

Course elements contribute to the overall course grade as follows:

Grading Category	Percentage Grade
Weekly Homework	20 %
Weekly Quizzes	10 %
One Mid Exam	35 %
One Final Exam	35 %

Course Evaluation Tools – Gradescope and D2L:

Gradescope will be used for grading and feedback in this term. This platform allows to provide fast and accurate feedback on your work. As soon as grades are posted, you will be notified immediately so that you can log in and see your feedback. You may also submit regrade requests if you feel we have made a mistake. You will be enrolled in this tool by the first lecture.

D2L will be used for providing all the necessary course content, communicating the course information, and grading. You are automatically enrolled in this tool as you register for the course.

If you are not enrolled in any of the above online tools by the first lecture, please contact the instructor as soon as possible.

Exams:

The two exams are scheduled as follows:

- Mid Exam - February 9, 2021
- Final Exam - March 16, 2021

Homework:

Weekly homework (a total of 8) will be posted on D2L. No late submissions will be accepted.

It is recommended to start the homework early and communicate with the instructor as soon as you face difficulties.

Honor Code

- This course adheres to the DePaul University's policy on Academic Integrity. For complete information, please see: <http://academicintegrity.depaul.edu/>
- Cheating is any action that violates university norms or instructor's guidelines for the preparation and submission of assignments. This includes, but is not limited to:
 - Unauthorized access to examination materials prior to the examination itself.
 - Use or possession of unauthorized materials during the examination or quiz.
 - Having someone take an examination in one's place.
 - Copying from another student.
 - Unauthorized assistance to another student; or acceptance of such assistance.
- Plagiarism involves the presentation of the work of another as one's own.
- Plagiarism includes, but is not limited to the following:
 - The direct copying of any source, such as written and verbal material, computer files, audio disks, video programs or musical scores, whether published or unpublished, in whole or part, without proper acknowledgment that it is someone else's.
 - Submitting as one's own work a report, examination paper, computer file, lab report or other assignment that has been prepared by someone else (including research papers purchased from any other person or agency).
 - The paraphrasing of another's work or ideas without proper acknowledgment.
 - Working so closely with another person so as to produce identical code.

- Avoid any form of or the appearance of any form of academic misconduct, which will result in a minimum penalty of zero credit for the work in question, and may result in a maximum penalty of a failing course grade.

Important: All of the course content is copyright protected by the instructor or relevant individuals/organizations. No part of the course content can be uploaded or shared to any entity. One specific example of this violation would be Chegg and Coursehero. In case this violation is discovered, strict action will be taken against the perpetrator.