ECE 308 – Signals and Systems
Spring 2027

Instructor: Professor Jia Wang (jwang34@illinoistech.edu)

Prerequisite: Math 251 and **Math 252**

Class Time and Location: Mon./Wed. 1:50 PM – 3:05 PM, TBD

Class Home Page: `https://wngjia.github.io/ece308-web/`

Required Textbook: "Signals and Systems", M. D. Adams, Edition 6.0, 2024. ISBN 978-1-990707-07-0 (PDF). Available at `https://www.ece.uvic.ca/~mdadams/sigsysbook`.

Computer Requirements: MATLAB will be used for course projects. Create an account using your school email and access it in a browser from `https://www.mathworks.com/academia/tah-portal/illinois-institute-of-technology-31722313.html`.

Course Descriptions: Time and frequency domain representation of continuous and discrete time signals. Introduction to sampling and sampling theorem. Time and frequency domain analysis of continuous and discrete linear systems. Fourier series, convolution, transfer functions. Fourier transforms, Laplace transforms, and Z-transforms.

Grading: Homeworks: 5%; Quizzes: 5%; Projects: 20%; Midterm Exam 1: 20%; Midterm Exam 2: 20%; Final Exam: 40%.

Homework, Quiz, and Project Policy: Homeworks are graded for completion. Quizzes are graded for attendance. Late homeworks and project reports will not be graded. Discussions on homeworks and projects are encouraged, but copying will call for disciplinary action.

Exam Policy: Close book, close note, cheat sheet allowed. Makeup exams will NOT be given.

Lecture Schedule (tentative):

Lectures	Dates	Topics	Chapters	HW/Project Out
1,2	1/11, 1/13	Introduction	1, 3, 8	
3	~~1/18~~, 1/20	Discrete-Time LTI Systems	9	HW #1
4,5	1/25, 1/27	Continuous-Time LTI Systems	4	PRJ #1
6,7	2/1, 2/3	Eigensequences and Eigenfunctions	9, 4	
8,9	2/8, 2/10	Continuous-Time Fourier Series I	5	HW #2
10,11	2/15, 2/17	Continuous-Time Fourier Series II	5	
12,13	2/22, 2/24	**Midterm Exam 1**		
14,15	3/1, 3/3	Discrete-Time Fourier Series	10	HW #3
16,17	3/8, 3/10	Continuous-Time Fourier Transform	6	
	3/15–3/19	**Spring Break**		
18,19	3/22, 3/24	Discrete-Time Fourier Transform	11	HW #4
20,21	3/29, 3/31	**Midterm Exam 2**		
22,23	4/5, 4/7	Discrete Fourier Transform	10, 11	PRJ #2
24,25	4/12, 4/14	Sampling	6, 11	HW #5
26,27	4/19, 4/21	Laplace Transform	7	
28,29	4/26, 4/28	z Transform	12	
	5/3–5/7	**Final Exam** (date/time TBD)		

ECE 308 Course Objectives (ABET)
After completing this course, you should be able to:

1. Represent a continuous or discrete time signal as a linear combination of basis signals, including step functions, ramp functions, and sinusoidal signals.
2. Determine the response of a linear system to a given signal using time domain analysis techniques.
3. Determine the response of a linear system to a given signal using frequency domain analysis techniques.
4. Determine the response of a linear system to a given signal using transform domain analysis techniques.
5. Choose representations for signals and systems appropriate for addressing a given question about system behavior and apply these representations in signal and system analysis.
6. Use computer-based analysis and design tools (such as Matlab software) in the analysis of signals and systems.

AI Usage Policy: The instructor may use AI tools to develop course content and please be assured that the instructor maintains final oversight, review, and ultimate responsibility for all course materials.

You are encouraged to use AI tools as part of learning and project development in this course with proper acknowledgment. Nevertheless, you are ultimately responsible for the content you submit, regardless of its source.

ADA Statement: Reasonable accommodations will be made for students with documented disabilities. In order to receive accommodations, students must obtain a letter of accommodation from the Center for Disability Resources and make an appointment to speak with me as soon as possible. The Center for Disability Resources is located in the Life Sciences Building, room 218, 312-567-5744 or `disabilities@iit.edu`.

Sexual Harassment and Discrimination Information: Illinois Tech prohibits sexual harassment by any member of the community. This includes harassment among students, staff, or faculty. Sexual harassment by a faculty member or teaching assistant of a student over whom they have authority can be particularly serious. Such conduct may easily create an intimidating, hostile, or offensive environment. Accordingly, Illinois Tech strives to provide for its students, faculty and staff an educational and employment environment free of sexual harassment.

Illinois Tech encourages anyone experiencing sexual harassment to speak with the Office of Title IX Compliance for information on support options and the resolution process. You can report sexual harassment electronically at iit.edu/incidentreport or contact either the Title IX Coordinator, Virginia Foster at foster@illinoistech.edu, the Title IX Specialist, Ryley Andrews at randrews2@illinoistech.edu

To speak with someone confidentially, contact Illinois Tech's Confidential Advisor at (773) 275 8340 or a licensed practitioner in Illinois Tech's Student Health and Wellness Center by emailing student.health@illinoistech.edu or calling (312)567-7550. For a comprehensive list of resources, visit the Office of Title IX Compliance website at `https://www.iit.edu/title-ix/resources`.

University Resources for Students' Rights, Responsibilities, and Related Policies:

- The Center for Disability Resources (CDR) Rights and Responsibilities
  `https://www.iit.edu/cdr/faqs/rights-and-responsibilities`
- The Family Educational Rights and Privacy Act (FERPA)
  `https://www.iit.edu/registrar/students-and-alumni/ferpa`
- Code of Conduct (from Student Handbook)
  `https://www.iit.edu/student-affairs/student-handbook/fine-print/code-conduct`
- Policies, Procedures, and Regulations (from Student Handbook)
  `https://www.iit.edu/student-affairs/student-handbook/fine-print/policies-regulations-and-procedures`