

# EENG 2620 - Signals and Systems

## Spring 2020

### Course Description:

Characteristics and properties of continuous-time and discrete-time signals and systems. Analysis of linear time-invariant systems using differential and difference equations and convolution. Analysis of these systems using Fourier series, Fourier transforms, Laplace transforms and Z transforms. Examples from applications to sampling, communication systems and linear feedback systems.

### Learning Objectives:

Students will

1. Understand types and describe elementary properties of continuous-time and discrete time signals and systems
2. Analyze continuous-time and discrete-time linear time-invariant systems using differential and difference equations, convolution and Laplace and Z Transforms
3. Analyze continuous-time and discrete-time signals and systems using Fourier Series and Fourier Transforms
4. Understand and apply sampling theorem
5. Describe some elementary applications of the techniques above to communication systems and linear feedback systems

### Lectures:

Mo, We, 14:30 - 15:50, NTDP B155.

### Instructor:

Hua Sun. Office: NTDP B225. Email: Hua.Sun@unt.edu. Phone: 940-369-5167.

Office Hours: Mo, We, 13:30 - 14:30, NTDP B225.

**TA:** Lisha Yao. Email: LishaYao@my.unt.edu. Office Hours: Mo, We, 10:00 - 11:00, NTDP B241.

### Textbook:

*Signals and Systems*, Alan V. Oppenheim, Alan S. Willsky, S. Hamid Nawab, 2nd Edition, Prentice Hall.

Lecture notes and other supplementary materials are posted online.

### Grading Policy:

Attendance and Participation: 5%

Homework: 15%

Midterm Exam 1: 25% (in class)

Midterm Exam 2: 25% (in class)

Final Exam: 30% (1:30 p.m. - 3:30 p.m., Monday, May 4, NTDP B155)

### General Policies:

- **Academic Integrity Standards and Consequences.** According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

- **ADA Accommodation Statement.** UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website at [disability.unt.edu](http://disability.unt.edu).

- **Emergency Notification & Procedures.** UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Blackboard for contingency plans for covering course materials.