

University of North Texas, College of Engineering

Department of Electrical Engineering

EENG 5610: Digital Signal Processing

Fall 2019

Mondays and Wednesdays 10:00 - 11:20 AM

Classroom: D201

Instructor

- Dr. X. Li, Office: NTRP B231, Tel: (940) 891-6875, Email: Xinrong.Li@unt.edu
Office Hours: Tuesday and Wednesday, 1:30 – 2:30 PM
(Additional appointments can be requested by email.)
- TA: Lisha Yao, email: LiShaYao@my.unt.edu, Office: B241
Office Hours: Thursday, 10 – 11 AM.

Course Description

- Introduction to modern digital signal processing theory and techniques. Includes discrete time signals and systems, sampling theorem, Z-transform, frequency analysis of signals and systems, discrete Fourier transform, fast Fourier transform algorithms, and digital filter design.

Prerequisites

- EENG 2620 or equivalent

Course Objectives

By the end of the course, you will learn

- Basic theories of digital signal processing;
- Analysis and design of digital signal processing systems and computational techniques.

Required Textbook

- Digital Signal Processing: Principles, Algorithms, and Applications, Fourth Edition, 2007.
Author: John G. Proakis and Dimitris G. Manolakis, Publisher: Pearson Education, Inc.
ISBN: 0-13-187374-1

Course Requirements and General Policies

- Class attendance is mandatory.
- Copying other's homework is a violation of academic honesty, which will be penalized.
- Phones should be kept in silent mode during the class.
- Do not wait until the last minute if you have trouble with this class.
- Visit <http://www.unt.edu/csrr> for your rights and responsibilities.

Disability Accommodation

- The University of North Texas (UNT) complies with Section 504 of the 1973 Rehabilitation Act and with the Americans with Disabilities Act of 1990. UNT provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please see the instructor and/or contact the Office of Disability Accommodation (<http://www.unt.edu/oda>) at 940-565-4323 during the first week of class. It is the responsibility of students with certified disabilities to provide the instructor with appropriate documentation from the Dean of Students Office.

Assignments and Exams

- No late assignments will be accepted and no emailed assignments will be accepted, except in extenuating circumstances. Homework is due before the class in the following week.
- Exam will be based on textbook readings, handouts, class exercises, class lectures and discussions, and homework assignments. Students are responsible for all text material, regardless of whether we review the text material in class or not.

Grading Policies

- Attendance, 10%
- Homework, 20%
- Project, 20%
- Final Exam, 50%
- No extra credits.
- Final accumulated number score is on a 100-point scale.
- Final letter grade distribution: A=90-100, B=80-89, C=70-79, D=60-69, F=0-59

Course Outline and Tentative Schedule

All course materials, including syllabus, lecture notes, homework assignments, and grades are available in Canvas at <https://unt.instructure.com/>

- **First Day of Class, Aug. 26, Monday**
- Course Introduction;
Class 1: Introduction to Signals, Systems, and Signal Processing
- Class 2: Discrete-time signals and systems
- Class 3: The z-Transform and It's Applications
- Class 4: Frequency Analysis of Signals
- Class 5: Frequency-Domain Analysis of Systems
- Class 6: Sampling and Reconstruction of Signals
- Class 7: Discrete Fourier Transform
- Class 8: Implementation of Discrete-Time Systems
- Class 9: Design of Digital Filters
- Course project

- **Final Exam, Dec. 11, Wednesday, 8:30 - 10:00 AM**

Useful Links

- UNT Catalogs: <http://catalog.unt.edu/>
- Office of the Registrar: <http://essc.unt.edu/registrar/> (schedule of classes and exams, etc.)
- Eagle Student Services Center: <http://essc.unt.edu/>
- UNT Canvas: <https://unt.instructure.com/>

Last updated: 08/25/2019