SYLLABUS – CE 3303 – Discrete-Time Signals and Systems

Course Information

Course Prefix Number: CE 3303

Course Title: Discrete-Time Signals and Systems

Term: Fall 2023

Monday & Wednesday

11:30 am - 12:45 pm

Location: SLC 2.303

Instructor Contact Information

Instructor: Berrak Sisman

Email: berrak.sisman@utdallas.edu

Office Hours: Wednesday 2:00 - 3:00 pm (virtual or physical, email for an appointment)

Course Website: eLearning

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Pre-requisite: MATH 2420

Course Description

Discrete-Time Signals and Systems (3 semester credit hours): Students learn the fundamentals of discrete-time signals and systems. Complex numbers, sampling and analog to digital signal conversion, digital signals and discrete-time linear time-invariant systems, linear difference equations, convolution, z-transform and transfer function, discrete-time Fourier transform, discrete Fourier transform, fast Fourier transform, digital images, and two-dimensional discrete Fourier transform.

Course Learning Objectives

• Ability to use complex numbers/exponentials for signals and systems

• Ability to generate discrete-time signals via sampling

• Ability to solve discrete-time linear time-invariant systems by convolution

• Ability to use z-transform and discrete Fourier transform for discrete-time signals and systems

• Ability to solve discrete-time linear time-invariant systems in frequency domain

Open Access Textbook

Signals and Systems: Theory and Applications by F. Ulaby and A. Yagle,

https://ss2.eecs.umich.edu/, Michigan Publishing, 2018; free download.

Additional Reading Materials

https://ocw.mit.edu/resources/res-6-007-signals-and-systems-spring-2011/

https://www.pearsonhighered.com/assets/samplechapter/0/1/3/1/0131988425.pdf

Grading Distribution and Policies

• Two closed books/notes midterm exams; first exam on the time-domain analysis part of the course and second exam on the frequency-domain analysis part of the course.

- Tentative exam 1 date: Wednesday, October 4th (25%)
- Tentative exam 2 date Wednesday, November 15th (25%)
  Exam date may change depending on the completion of the first part of the course.

• Two pages of cheat sheets (front and back or two sides of an unattached paper) are allowed for the midterm exams.

• The exams are graded using a 100-point scale.

• Final exam will be closed book (50%).

• Any grading issue must be brought into the instructor's attention within one week from the date of posting grades on eLearning. After one week, no change in grades will be made.

• The following scale indicates the way letter grades are normally assigned:

100-97 A+; 96.9-93 A; 92.9-90 A-; 89.9-87 B+; 86.9-83 B; 82.9-80 B-;

79.9-77 C+; 76.9-73 C; 72.9-70 C-; 69.9-67 D+; 66.9-63 D; 62.9-60 D-; below 60 F

Comet Creed

This creed was voted on by the UT Dallas student body in 2014.

It is a standard that Comets choose to live by and encourage others to do the same: "As a Comet, I pledge honesty, integrity, and service in all that I do."

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please go to http://go.utdallas.edu/syllabus-policies for these policies.