EE3302.001.23S

Signals and Systems

The University of Texas at Dallas

Spring 2023

Day & Time: Tuesday & Thursday 4:00-5:15pm (FO 2.404)

Professor Contact Information

Prof. Carlos Busso
email: busso@utdallas.edu
phone: (972) 883-4351
Room ECSN 4.216
Office hours: Tuesday 5:15 - 6:15 pm
Thursday 11:00-12:00 pm (or by appointment)

Teacher Assistant (TA): TBA

Pre- or co-requisites: ENGR 3300.

Corequisite: EE 3102. (Same as CE 3302 and TE 3302) (3-0) S

Textbook: (one of these books)

A.V. Oppenheim et al.,(1997) Signals & Systems (2nd Edition), Prentice Hall

Suggested Texts, readings, & Materials:

S. Soliman & M. Srinath, Continuous and Discrete Signals and Systems, 2nd edition. Prentice- Hall

J.H. McClellan et al., (2003) Signal Processing First, Prentice Hall

C.L. Phillips et al., (2003) Signals, Systems and Transforms, (3rd Edition), Prentice Hall

Hwei P. Hsu Schaum's Outline of Theory and Problems of Signals and Systems, Schaum's Outline Series, McGraw-Hill

Course Description:

Introduces the fundamentals of continuous and discrete-time signal processing. Linear system analysis including convolution and impulse response, Fourier series, Fourier transform and applications, discrete-time signal analysis, sampling and z-transform.

Student Learning Outcomes:

Students are expected to be able to:

- Apply the convolution theorem for continuous time signals
- Evaluate the Fourier Series of periodic signals
- Determine the Fourier Transform of energy signals
- Make use of Fourier Transform Properties
- Analyze a discrete time LTI system using discrete linear convolution
- Use z-transform for analyzing discrete time signals and systems
- Convert a continuous time signal to the discrete time domain and reconstruct using the sampling theorem

Topics:

Chapter 1: Signals and systems	3 classes
Chapter 2: Linear time-invariant systems	4 classes
Chapter 3: Fourier Series representation of periodic signals	5 classes
Chapter 4: The continuous-time Fourier Transform	7 classes
Discrete Time (DT) Signals & Systems	4 classes
Chapter 8: The Z- Transform	4 classes

Assignment and Grading

Exam 1	(25%)	Tuesday, 02/21/2023 (4:00 - 5:15 pm)
Exam 2	(25%)	Tuesday, 04/04/2023 (4:00 - 5:15 pm)
Final	(35%)	Tuesday, TBD
Homework	(15%)	every Thursday

* Exams and final are in-class, closed book & notes
* Homework will be assigned every week, and they are due the following week. Selected questions will be graded
* No exam grades will be dropped. No Make-up exam will be given without medical excuses or prior arrangement
* Mandatory attendance
* **The final's score may replace the lower score from exam 1, and exam 2, if this change benefits the student.**

Tentative *percent* - *letter grade* conversion							
97-100	A+	87-90	B+	77-80	C+	60-70	D
93-97	A	83-87	B	73-77	C	<60	F
90-93	A-	80-83	B-	70-73	C-		

I preserve the right to curve/modify this conversion

Teacher Statement:

My goal as teacher is that you learn as much as possible about signals and systems, that you find the material interesting and that you finish the course wanting to know more about this subject. You can facilitate this by:

(i) ask me questions, make use of my office hours,
(ii) read something other than the required text book,
(iii) if you are struggling with the material, come and ask me about it as soon as you realize this and not the day before the midterm or final,
(iv) learn to use MATLAB,
(v) turn up for the lectures.
(vi) please be on time - late arrivals are very disturbing to other students in the class and also to me. I review the previous class at the start of each lecture and also make announcements at this time.

Important Dates:

Late Registration and Last Day to Add/Swap 01/24/2023
Last day to drop a class without a "W" 02/01/2023
Undergraduate Courses, WL Ends, 03/30/2023
Last day of classes: 05/05/2023

Course & Instructor Policies

Email
Emails are the preferred way to contact me. Please add <EE3302> in the subject of emails, so I can give priority to your emails. I only read eLearning mail periodically.

Late Work
Make-up exams or projects will not be given without advance notice to the instructor.

Extra Credit
I do not offer "extra credit" work or "special consideration" to allow students a chance to raise their grade. If a personal situation arises during the semester that may affect your classroom performance, please talk to me sooner rather than later. If you wait until the end of the semester, I won't be able to help you. I can work with you more easily if you speak to me when the situation arises. I cannot help you if I do not know you need help.

Classroom Citizenship
In keeping with this course's professional communication mandate, students are expected to use every opportunity in the course to practice communicating in a civil and professional manner. It is not allowed to exit the class during the lectures to avoid distracting other students. If a student need to leave early, he/she must let the instructor know before the class.

Technology Requirements
The course is taught using eLearning. The student should develop the habit of checking both eLearning and their UTD email often for assignments and announcements. Reliable and frequent internet connectivity is indispensable – not having internet access will make your learning more difficult and will not serve as a valid excuse for shortcomings. Failure to check UTD or eLearning email, errors in forwarding email, and email bounced from over-quota mailboxes are not acceptable excuses for missing course email. Additionally, to protect your privacy rights, I will only send email through your official UTD email address or eLearning email. If you choose, you can redirect both of these addresses to external addresses.

Classroom and Equipment Use Policies
No laptops, cell phones, pagers, or other electronic messaging services may be used in the classrooms, unless the student (1) needs a laptop for the presentation (2) has cleared it with me first and then only on an emergency basis.

Technical Support

If you experience any problems with your UTD account you may send an email to: assist@utdallas.edu or call the UTD Computer Helpdesk at 972-883-2911.

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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.

These descriptions and timelines are subject to change at the discretion of the Professor.