

BMEN 3302 Course Syllabus – The University of Texas at Dallas

Course Information

Course Number: BMEN3302.002.25F

Course Title: Bioengineering Signals and Systems (3 Credits)

Term: Fall 2025

Course Meeting: Tuesday & Thursday 4:00 – 5:15 pm

Classroom: CB 1.219

Professor Contact Information

Instructor: Eric Meyers, PhD

Email: eric.meyers@utdallas.edu

Office location: BSB 14.641

Office phone number: 972-883-4023

Office Hours: Monday 3-5 pm

Office hours format: In person and via MS Teams (**please email instructor ahead of time**)

TA Contact Information

Teaching Assistant: Santhosh Giddaluru

Email: santhoshgowtham.giddaluru@utdallas.edu

Please contact the instructor via email if the existing office hour schedules are unworkable for you so that reasonable accommodation can be made.

Course Modality and Expectations

Instructional Mode	Traditional
Course Platform	eLearning (Blackboard) and MS Teams
Expectations	

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

Prerequisite or Corequisite: BMEN 1208 and ENGR 3300

Course Description

In this course, fundamentals of continuous and discrete-time signal processing are introduced. The main time and frequency-domain concepts covered in the course are convolution, impulse response, Fourier transform, and sampling theorem. The course also acquaints students with signal processing in MATLAB

Student Learning Objectives/Outcomes

After completing this course, students are expected to be able to:

- Represent signals and systems in time domain.
- Represent signals and systems in frequency domain.

- Demonstrate an understanding of sampling theorem and relationship between continuous and discrete time signals.
- Apply MATLAB tools to analyze and simulate signals and systems with emphasis on Biomedical signals and systems.

Required Textbooks and Materials

One of the following textbooks:

- James H. McClellan, Ronald W. Schafer, and Mark A. Yoder, Signal Processing First, 1st edition, Pearson Prentice Hall, ISBN 0-13-090999-8
- S. Soliman & M. Srinath, Continuous and Discrete Signals and Systems, 2nd edition. Prentice- Hall ISBN 0-13-518473-8
- A.V. Oppenheim et al., “Signals & Systems,” 2nd Edition, Prentice Hall, 1997.

Suggested Course Materials

- J.H. McClellan et al., “Signal Processing First,” Prentice Hall, 2003.

Tentative Academic Calendar

Week	Dates	Topic	Assignment	Due
1	8/25 8/27	-Introduction to signals and systems Introduction to sinusoidal signal (MATLAB)		
2	9/2 9/4	-Introduction to complex numbers -Discrete signals and systems (Elementary signals)	Assignment 1	9/9
3	9/9 9/11	-Discrete signals and systems (Types of systems)	Quiz 1	9/18
4	9/16 9/18	-Discrete signals and systems (Convolution)	Assignment 2	9/30
5	9/23 9/25	-Discrete signals and systems (Convolution, MATLAB)		
Exam 1 (Date: 10/7)				
6	9/30 10/2	- Review for Exam 1 (9/30) - Continuous signals and systems (Elementary signals)		
7	10/7 10/9	Exam 1 (10/1) -Continuous signals and systems (Types of systems, Convolution)	Assignment 3 MiniProject 1	10/23 (A3) 11/20 (MP1)

Week	Dates	Topic	Assignment	Due
8	10/14 10/16	-Continuous signals and systems (Convolution, MATLAB)	Quiz 2	10/28
9	10/21 10/23	-Fourier Series	Assignment 4	11/4
10	10/28 10/30	-Fourier Series		
Exam 2 (Date: 11/13)				
11	11/4	-Continuous time Fourier transform (Fourier transform)	Assignment 5	11/20
	11/6	- Review for Exam 2 (11/6)		
12	11/11	-Continuous time Fourier transform (Properties, Transfer function)	Quiz 3	11/21
	11/13	Exam 2 (11/13)		
13	11/18	- Filtering	Assignment 6 Miniproject 2	12/2 12/12
	11/20	- Filtering / Modulation		
Fall Break (11/26, 11/28)				
14	12/2	- Modulation		
	12/4	- Review for Exam 3 (12/4)		
Exam 3 (Date: 12/9)				

Grading Policy

Assessment Type	Portion of Overall Grade
Participation	10%
Assignments	10%
Miniprojects	10%
Quizzes	15%
Minimum (Exam1, Exam 2, Exam3)	15%
Median (Exam1, Exam2, Exam3)	17.5%
Maximum (Exam1, Exam2, Exam3)	22.5%

Participation: In-person attendance is required.

Assignments: Assignments will be posted on e-Learning. Working through these assignments will help you do well in quizzes and exams. You are encouraged to do the homework problems in groups.

Mini Projects: 2 MATLAB projects will be posted to e-Learning. You are expected to have the MATLAB programming skills thought in BMEN 1208.

Quizzes: There will be three in-person quizzes.

Exams: There will be three exams. The exams will be in-person format.

Grade	Points	Grade	Points	Grade	Points	Grade	Points
A+	97-100	B+	87-89.99	C+	77-79.99	D+	67-69.99
A	93-96.99	B	83-86.99	C	73-76.99	D	63-66.99
A-	90-92.99	B-	80-82.99	C-	70-72.99	D-	60-62.99
						F	<60

Note: Grading policy subject to change.

Course Policies

- In-class instructions:
 - Do not check your email, messages, social media, or any page or application unrelated to our course discussion.
 - Do not use headphones.

You will lose your class participation credits associated to the day(s) if you do not follow the instructions above.
- You may discuss background issues and general solution strategies with others. You are encouraged to help each other to understand the course materials. However, **copying or sharing files/solutions is never acceptable**. Never use someone else's file or solution – doing so will be considered a violation of academic integrity.
- The quizzes/exams must be individual efforts. You are not allowed to reach out to other people or resources (such as online websites) for your quizzes/exams. The quizzes/exams questions and your responses may not be shared or distributed in any form. Such communication or distribution will constitute a violation of academic integrity.
- Online submissions to the eLearning must be in pdf format (except for MATLAB files). Do not forget to add a heading (Full name, Assignment Name, Date, Class Number, Class Section, TA's Name) to your submission.
- All assignments will be due on the assigned dates. Late assignments turned in after the deadline will be penalized 20%. No credit is given to the assignments submitted later than 120 hours (5 days) after the deadline.
- Check your online submission to assure that the file has been successfully submitted and is the correct file. **No credit will be assigned to incomplete (in-progress), or incorrectly submitted files**. Make sure you received submission confirmation email from eLearning. Do not delete the confirmation email from your mailbox.

- Students have one week to review graded homework, quizzes, or exams with the professor for any possible grading corrections. After one week no changes will be allowed.
- As noted in the UT Dallas policies and procedure, use your UTD email account to contact the instructor and **check eLearning weekly for possible update/course changes**. All changes will be announced in class.
- When you send an email to your instructor or TA, include **BMEN3302** in the title of your email.

Technical Requirements

In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the [Getting Started with eLearning](#) webpage.

Course Access and Navigation

This course can be accessed using your UT Dallas NetID account on the [eLearning](#) website. Please see the course access and navigation section of the [Getting Started with eLearning](#) webpage for more information.

To become familiar with the eLearning tool, please see the [Student eLearning Tutorials](#) webpage. UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The [eLearning Support Center](#) includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

Communication

This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the [Student eLearning Tutorials](#) webpage for video demonstrations on eLearning tools.

Student emails and discussion board messages will be answered within 3 working days under normal circumstances.

Class Materials

The instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. **Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).**

Classroom Conduct Requirements Related to Public Health Measures

UT Dallas will follow the public health and safety guidelines put forth by the Centers for Disease Control and Prevention (CDC), the Texas Department of State Health Services (DSHS), and local public health agencies that are in effect at that time during the Fall 2021 semester to the extent allowed by state governance. Texas Governor Greg Abbott's Executive Order [GA-38](#) prohibits us from mandating vaccines and face coverings for UT Dallas employees, students, and members of

the public on campus. However, we strongly encourage all Comets to get vaccinated and wear face coverings as recommended by the CDC. Check the [Comets United: Latest Updates webpage](#) for the latest guidance on the University's public health measures. Comets are expected to carry out [Student Safety](#) protocols in adherence to the Comet Commitment. Unvaccinated Comets will be expected to complete the [Required Daily Health Screening](#). Those students who do not comply will be referred to the Office of Community Standards and Conduct for disciplinary action under the [Student Code of Conduct – UTSP5003](#).

Class Attendance

The University's attendance policy requirement is that individual faculty set their course attendance requirements. Regular and punctual class attendance is expected. Students who fail to attend class regularly are inviting scholastic difficulty. In some courses, instructors may have special attendance requirements; these should be made known to students during the first week of classes.

Class Participation

Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Class Recordings

Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

The instructor may record meetings of this course. These recordings will be made available to all students registered for this class if the intent is to supplement the classroom experience. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law.

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."

Academic Support Resources

The information contained in the following link lists the University's academic support resources for all students.

Please go to <http://go.utdallas.edu/academic-support-resources> webpage for these policies.

Student AccessAbility

It is the policy and practice of The University of Texas at Dallas to make reasonable accommodations for students with properly documented disabilities. However, written notification from the Office of Student AccessAbility (OSA) is required. If you are eligible to receive an accommodation and would like to request it for this course, please discuss it with me and allow one week advance notice. Students who have questions about receiving accommodations, or those who have, or think they may have, a disability (mobility, sensory, health, psychological, learning, etc.) are invited to contact OSA for a confidential discussion. OSA is located in the Student Administration Building, AD 2.224. They can be reached by phone at 972-883-2098, or by email at studentaccess@utdallas.edu.

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 review the catalog sections regarding the [credit/no credit](#) or [pass/fail](#) grading option and withdrawal from class.

Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.