SYLLABUS
KENNESAW STATE UNIVERSITY
ELECTRICAL & COMPUTER ENGINEERING
EE 3701: SIGNALS AND SYSTEMS
SPRING 2025

Course Information

Class meeting time: *no in-person meetings*
Modality and Location: *Online/D2L*
Syllabus is posted in D2L

Instructor Information

Name: Sheila Hill
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Office Location: Q337C
Office phone: (470) 578-2408
Office Hours: Posted on D2L
Preferred method of communication:

- For general questions about course content, assignments, due dates, etc, use the **Ask the Professor a Question** discussion board (you may post anonymously if you wish).
- For specific questions, whether they are personal questions concerning absences, extensions, etc OR if you want me to check your work to see if it's correct before submitting it, email me directly.

Communications will be answered within 24 hours on weekdays and 48 hours on weekends, but in general responses from me are much sooner than that.

Course Description

3 Class Hours, 0 Laboratory Hours, 3 Credit Hours
Prerequisites: EE 2302 and Engineering Standing
This course explores discrete and continuous-time systems analysis, with emphasis on linear time-invariant (LTI) systems, the classification of continuous-time systems, convolution, and its application to LTI systems and analysis of LTI systems via the Laplace transform, Fourier transform, and Fourier series.

Course Materials

Required Text:

- ZyBook EE 3701: Signals and Systems, ISBN 979-8-203-35209-5

Reference Texts (current or older editions will work equally well as references):

- Signals and Systems, 2nd edition, AV Oppenheim and AS Willsky, Prentice Hall, 1997.
- Signal Processing and Linear Systems, 2nd Edition, BP Lathi and RA Green, Oxford University Press, 2021.
- Signals and Systems, S Mitra, Oxford University Press, 2015.

Technology requirements:

- This class can only be completed by accessing D2L.
- Many course resources and assignments are presented online through D2L.
- As a result, students are expected to access the internet outside of the classroom.
- While most MATLAB assignments are contained within the textbook, a few will require access to MATLAB directly. MATLAB can be downloaded using your KSU credentials.

Calculator Policy:

- **Only calculators that are allowed on the FE exam are permitted** (for example: TI-36X, Casio fx-115, HP 33s). A complete list can be found by going to NCEES (National Council of Examiners for Engineering and Surveying), scrolling down the page and clicking on Calculator Policy from the list on the lower right.
- All other calculators are not permitted.

Course Software Skills

- Students are expected to be familiar with Microsoft Word and Microsoft Excel and should be able to create a pdf file. Some familiarity with MATLAB is helpful but not required.

Learning Outcomes

Upon successful completion of this course, you should be able to perform the following tasks:

1. Be able to mathematically represent signals and systems
2. Be able to describe and analyze the common continuous time signals and systems
3. Be able to use continuous time tools to solve problems such as differential equations and Laplace Transforms
4. Be able to analyze continuous time problems using Fourier Analysis and Transforms
5. Be able to describe and analyze the common discrete time signals and systems
6. Be able to use discrete time tools to solve problems such as difference equations and Z Transforms
7. Be able to analyze discrete time problems using Discrete Fourier Analysis and Transforms
8. Be able to describe and analyze the sampling process
9. Be able to design and analyze DT and CT filters
10. Be able to design and implement practical problem solutions using MATLAB

The course objectives listed above represent the overall learning objectives of this course. You achieve a course objective by achieving the module objectives related to that course objective. The instructional material and activities found within a module are designed with the intent of assisting you in achieving the module objectives.

Course Requirements and Assignments

Assessment Descriptions:

NOTE: Signals and Systems is primarily a math course. It is vitally important to practice working problems, which is why working assigned exercises in the textbook is so important.

Tests:

- The purpose of the exams is to assess a student's ability to successfully perform tasks associated with the course objectives.
- Three tests will be given during the semester.
- Tests will typically cover 5 weeks of class material, but past material may also be included.
- Tests will be administered on D2L during weeks 6, 11, and 15.
- New material will NOT be covered during test weeks.

Final Exam

- Similar to the semester exams, the purpose of the final exam is to assess a student's ability to successfully perform tasks associated with the course objectives.
- The primary difference between a semester exam and the final exam is that the scope of topics assessed in the final exam is comprehensive.
- The final exam will be administered on D2L during final exam week.

Participation

- Participation assignments consist of ZyBook participation problems that assist with the module objectives.
- The problems can be repeated until correct
- **Late assignments will not be accepted**

Homework

- The homework assignments are collections of ZyBook challenge problems that assist in learning the module objectives.
- The problems may be repeated until correct
- **Late assignments will not be accepted**

Labs

- Labs are interactive ZyBook MATLAB assignments
- The problems may be repeated until correct
- **Late assignments will not be accepted**

Semester Group Project

- The semester project is a group MATLAB exercise starting during Week 13 and due at the end of Week 15
- This is a signal processing assignment that involves both audio and image files.
- **Late projects will not be accepted**

Evaluation and Grading Policies

Midterm Grade:

A midterm grade will be assigned by the midterm grade due date identified on this semester's academic calendar. This midterm grade is for assessing mid-semester performance prior to the last day to withdraw without academic penalty. You may view your midterm grade in Owl Express. Note that only your final grade will be officially recorded on your academic transcript.

Grading Scale:

The grading scale that relates your final grade percentage to the letter grade you will be awarded for this course is presented in the table below:

EE 3701 Grading Scale	
Final Grade Percentage	Letter Grade
90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

Final grades will be rounded up to the nearest whole number.

EE 3701 Grade Composition	
Assessment Category	Percentage Weighting (%)
Tests (3)	30
Final Exam	20
Participation Assignments	10
Homework	20
MATLAB Labs	10
Semester Group Project	10

Course Policies

Attendance Policy:

There is no official attendance policy for this class. However, students are responsible for any information covered in class.

Students are solely responsible for managing their enrollment status in a class; failure to log in to the class on D2L or attend in-person meetings does not constitute a withdrawal.

Appealing a Grade:

Any grade can be appealed – all appeals for re-evaluation of a grade must be made within one week of the assessment being returned. The instructor reserves the right to re-grade the entire exam, homework assignment, or project if an appeal is made.Feedback in a Timely Manner:

The following table lists the maximum turn-around times on the different types of assessments used in this course.

EE 3701 Feedback Times	
Assessment Category	Max. Turn-around Times
Semester Exams	1 week
Final Exam	1 week
Participation Assignments	Immediate
Homework Assignments	Immediate

Institutional Policies

Federal, BOR, & KSU Required Syllabus Policies

KSU Student Resources

This link contains information on help and resources available to students: KSU Student Syllabus Resources

Course Schedule

KEY: P = Participation H = Homework

EE 3701 Course Schedule Spring 2025				
Week	**Dates**	**Content Covered**	**ZyBook Coverage**	**ZyBook Assignments**
1	01/06 – 01/12	Introduction; Signals; Nonperiodic Waveforms	1.1 – 1.5	P01
2	01/13 – 01/19	LTI Systems & Impulse Response; Convolution	2.1 – 2.5	P02 Lab 01
3	01/20 – 01/26	BIBO; LTI Sinusoidal Response	2.6 – 2.9	P03, H01 Lab 02
4	01/27 – 02/02	Laplace Transform; Inverse Laplace & Partial Fractions	3.1 – 3.8	P04 Lab 03
5	02/03 – 02/09	Laplace Applications	4.1 – 4.7	H02 Lab 04
6	02/10 – 02/16	**TEST 1 – no new material**		
7	02/17 – 02/23	Fourier Analysis Techniques	5.1 – 5.15	P05 Lab 05
8	02/24 – 03/02	Filters	6.1 – 6.17	P06, H03 Lab 06
9	03/03 – 03/09	DT Systems; DT Convolution	7.1 – 7.5	P07
	03/10 – 03/16	**Spring Break – no classes**		
10	03/17 – 03/23	Z-transform; Stability	7.6 – 7.13	H04 Lab 07
11	03/24 – 03/30	**TEST 2 – no new material**		
12	03/31 – 04/06	DT Fourier Analysis	8.1 – 8.6	P08
13	04/07 – 04/13	DT Filters; Spectral Leakage	9.1 – 9.5	P09 Lab 08
14	04/14 – 04/20	Modulation; Sampling and Aliasing	10.1 – 10.8	H05
15	04/21 – 04/27	**TEST 3 – no new material**		Semester Project due
	04/29 – 04/30	Final Exam available (due 04/30)		