



# TED UNIVERSITY

## Syllabus for EE 311 Signals and Systems

Fall 2016-2017

<b>Instructor:</b>	Asst. Prof. Dr. H. Ugur Yildiz
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<b>Time Schedule:</b>	Monday (11.00 – 12.50) @D028 Friday (11.00 – 11.50) @D028
<b>Office Hours:</b>	Wednesday (16.00 – 18.00) (or by appointment)

<b>Course Code &amp; Number</b>	EE311	<b>Course Title</b>	Signals and Systems
<b>Type of Course</b>	<input checked="" type="checkbox"/> Compulsory <input type="checkbox"/> Elective	<b>Semester</b>	<input checked="" type="checkbox"/> Fall <input type="checkbox"/> Spring <input type="checkbox"/> Summer
<b>Level of Course</b>	BSc	<b>Year of Study</b>	Junior
<b>Course Credit Hours / ECTS</b>	(3+0+0) 3 / 5 ECTS	<b>Pre-requisite / Co-requisite</b>	Pre-requisite: EE202 or MATH 203 Co-requisite:
<b>Mode of Delivery</b>	<input checked="" type="checkbox"/> Face-to-face <input type="checkbox"/> Distance learning	<b>Language of Instruction</b>	<input checked="" type="checkbox"/> English <input type="checkbox"/> Turkish
<b>Course Coordinator</b>	Asst. Prof. Huseyin Ugur Yildiz Phone: 0312-585-0221 E-mail: <a href="mailto:hugur.yildiz@tedu.edu.tr">hugur.yildiz@tedu.edu.tr</a>		
<b>Computer Usage</b>	-		
<b>Textbook</b>	Alan V. Oppenheim, Alan S. Willsky, S.Hamid Nawab, "Signals and Systems: Pearson New International Edition", 2 <sup>nd</sup> Edition, Pearson, 2013.		
<b>Supplementary Reading</b>	J.H. McClellan, R.W. Schafer, MMA. Yoder, "Signal Processing First", 2 <sup>nd</sup> Edition, Pearson/Prentice Hall, 2003.		
<b>Module and Instructor Evaluation Date</b>	Evaluation will be held on the last day of the class		

<b>Course Catalog Description</b>	Continuous-time and discrete-time signals and systems, Linear time-invariant systems: impulse response, convolution, Fourier series, Continuous-time Fourier transform, Discrete-time Fourier transform, Sampling theory, and z-transform.					
<b>Course Objectives</b>	This course aims to introduce the fundamentals of the signals, linear time-invariant systems, and Fourier transform of the signals.					
<b>Course Learning Outcomes (LO)</b>	Having successfully completed this course, students will be able to: LO-1: Define continuous-time and discrete-time signals and systems. LO-2: Identify linear time-invariant systems. LO-3: Calculate impulse response and convolution. LO-4: Calculate Fourier series coefficients. LO-5: Define and calculate continuous-time Fourier transform. LO-6: Define and calculate discrete-time Fourier transform. LO-7: Express sampling theory. LO-8: Calculate z-transform.					
<b>TENTATIVE COURSE OUTLINE</b>						
	<b>Week</b>	<b>Month / Day</b>	<b>Topics</b>	<b>Learning Outcome (LO)</b>	<b>Textbook Reading</b>	<b>Assignments / Exams</b>
	1	09/26 09/30	Signals and Systems	1	Ch. 1.0-1.3	
	2	10/03 10/07	Signals and Systems	1	Ch. 1.4-1.6	
	3	10/10 10/14	Linear Time-Invariant Systems	2,3	Ch. 2.0-2.3	Quiz #1

4	10/17 10/21	Fourier Series Representation of Periodic Signals	4	Ch. 3.0-3.3	Quiz #2
5	10/24 10/28	Fourier Series Representation of Periodic Signals	4	Ch. 3.4-3.7	
6	10/31 11/04	<b>Recitation</b>			Quiz #3 <b>Make-up Homework #1</b>
7	11/07 11/11	<b>No Lecture</b>			<b>Midterm</b>
8	11/14 11/18	The Continuous-Time Fourier Transform	5	Ch. 4	
9	11/21 11/25	The Continuous-Time Fourier Transform	5	Ch.4	
10	11/28 12/02	The Discrete-Time Fourier Transform	6	Ch. 5	Quiz #4
11	12/05 12/09	The Discrete-Time Fourier Transform	6	Ch. 5	
12	12/12 12/16	Sampling Theorem	7	Ch. 7	Quiz #5
13	12/19 12/23	Sampling Theorem	7	Ch. 7	
14	12/26 12/30	z-Transform	8	Ch. 10	Quiz #6 <b>Make-up Homework #2</b>
<b>FINAL EXAMS WEEK (date and time to be announced later).</b>					

<b>COURSE ASSIGNMENTS</b>	
<b>A. Midterm Exam [30%]</b>	
There will be a <u>closed-book</u> midterm exam that will be on the 7 <sup>th</sup> . Date and time of the midterm exam will be announced later.	
<b>B. Final [40%]</b>	
There will be a cumulative <u>closed-book</u> final exam covering all topics. Date and time of the final exam will be announced at the end of the semester.	
<b>C. Quizzes [30 %]</b>	
There will be 6 <u>closed-book</u> quizzes, 5% for each quiz.	
<b>D. Make-up Homeworks [5-10%]</b>	
There will be 2 <u>optional</u> homeworks which can be used to <u>replace a bad quiz score</u> . There will be <u>no</u> extra credits for doing homeworks. A student who would like to replace a bad quiz score with the homework should send an e-mail to the instructor. Due dates will be announced at the class.	
<b>COURSE ASSESSMENTS &amp; LEARNING OUTCOMES MATRIX</b>	
Assessment Methods	Course Learning Outcomes
1 <sup>st</sup> Make-up homework	LO # 1...4
2 <sup>nd</sup> Make-up homework	LO # 5...8
Quizzes	LO # 1...7
Midterm Exam	LO # 1...4
Final Exam	LO # 1...8

<b>Teaching Methods &amp; Learning Activities</b>	<input checked="" type="checkbox"/> Telling/Explaining <input checked="" type="checkbox"/> Questioning <input checked="" type="checkbox"/> Reading <input checked="" type="checkbox"/> Problem Solving	<input checked="" type="checkbox"/> Collaborating <input checked="" type="checkbox"/> Web Searching <input checked="" type="checkbox"/> Other(s): Make-up Homeworks
<b>Assessment Methods</b> (Formal & Informal)	<input checked="" type="checkbox"/> Test/Exam <input checked="" type="checkbox"/> Quiz	<input checked="" type="checkbox"/> Other(s): Make-up Homeworks
<b>Student Workload</b> (Total 118 Hrs)	<input checked="" type="checkbox"/> Lectures ..... <b>42 hrs</b> <input checked="" type="checkbox"/> Course Readings ..... <b>28 hrs</b> <input checked="" type="checkbox"/> Problem Solving ..... <b>14 hrs</b> <input checked="" type="checkbox"/> Exams/Quizzes ..... <b>30 hrs</b>	<input checked="" type="checkbox"/> Other: Homework ..... <b>4 hrs</b>

## COURSE POLICIES

### I. Attendance

- Regular class attendance is expected for all students at the University. You are not required but advised to attend all classes.
- Please send your professor a brief e-mail to explain your absence in advance.
- Your absence will not reduce your attendance rate *if and only if* you have a legitimate reason for missing a class (such as illness, death in family, a traffic accident, etc.). In case of an illness or emergency, you must supply a formal documentation that supports your claim.
- Classes start on the hour. Please be respectful of your classmates by being on time.
- All electronic equipment should be turned off and kept out of sight before lecture starts.

### II. Make-up Exams

Make-up for the Midterm Exam will be available *if and only if* you have a legitimate reason for missing the exam (such as illness, death in family, a traffic accident, etc.). In case of an illness or emergency, you must supply a formal documentation that supports your claim.

### III. Late Submission Policy

Late submissions will not be graded. Missed quizzes without any clarification will result in a grade of zero (0).

### IV. Participation

In their book, *The Adult Student's Guide to Survival & Success*, Al Siebert and Mary Karr suggest that the most effective learning technique of all is to study by *asking and answering questions*. Develop the habit of reading textbooks, taking lecture notes, and studying by asking and answering questions. When you do this, you save many hours of studying and have time to spend with your family or friends.

There are several ways to go about asking and answering questions.

- When studying on your own, write questions that occur to you while you're reading and then go back and find the answers.
- If you're part of a study group, make a list of questions to ask the group.
- In the classroom, participate fully by asking questions and answering the ones posed by your instructor.

Curiosity is one of the cornerstones of learning. Be curious. Ask questions. Learn faster.

## **V. Cheating & Plagiarism**

Collaboration is strongly encouraged; however, the work you hand in must be solely your own. Cheating and plagiarism are very serious offenses and will be penalized accordingly by the university disciplinary committee.

Cheating has a very broad description which can be summarized as "acting dishonestly". Some of the things that can be considered as cheating are the following:

- Copying answers on exams, home works and lab works,
- Using prohibited material on exams,
- Lying to gain any type of advantage in class,
- Providing false, modified or forged data in a report,
- Plagiarizing (see below),
- Modifying graded material to be re-graded,
- Causing harm to colleagues by distributing false information about an exam, homework or lab.

All of the following are considered plagiarism:

- Turning in someone else's work as your own,
- Copying words or ideas from someone else without giving credit,
- Failing to put a quotation in quotation marks,
- Giving incorrect information about the source of a quotation,
- Changing words but copying the sentence structure of a source without giving credit,
- Copying so many words or ideas from a source that it makes up the majority of your work, whether you give credit or not.

([www.plagiarism.org](http://www.plagiarism.org))

## **VI. Disability Support**

If you have a disabling condition which may interfere with your ability to successfully complete this course, please contact Dr. Asli Bugay (email: [asli.bugay@tedu.edu.tr](mailto:asli.bugay@tedu.edu.tr)) or Dr. Huseyin Ugur Yildiz (email: [hugur.yildiz@tedu.edu.tr](mailto:hugur.yildiz@tedu.edu.tr)). For more information please see Handbook for Registered Students.

\*\*\* GOOD LUCK \*\*\*