

MALTEPE UNIVERSITY
FACULTY OF ENGINEERING AND NATURAL SCIENCES
COMPUTER ENGINEERING (ENGLISH)
2018-2019 Spring Term

Course name: Fundamentals of Signals and Systems			Course code: CEN 252
ECTS: 7	2nd year - 4th semester	Undergraduate	Required
4 h/week	Lectures:2 h/week Application:2 h/week		Course language:English

Lecturer of the Course and contact info:

Assist. Prof. Dr. Salih BAYAR (Spring)
,e-mail:salihbayar@maltepe.edu.tr,extension:

Section Code:

Office Hours:

Friday 11:00-12:00

(If any) Web address of the course or the lecturer:

www.salihbayar.com

Objectives of the Course:

The goal of this course is to provide an introduction of some basic concepts related to the signals and systems. In the course MATLAB will be used for practical purposes and the application of basic concepts related to signals and systems will be explained through MATLAB.

Learning Outcomes and Subordinate Skills:

At the end of the semester the students will be able to:

1. Learning basic MATLAB usage.
2. Learning continuous signals and systems.
3. Gain of linear system analysis skills.
4. Applicability of Convolution and Laplace transformations in MATLAB.
5. Applicability of Fourier Series and Fourier transformations in MATLAB.

Generic Competencies:

1. Productive, Rational, Questionable, Creative

Instructional Methods and Techniques:

There will be ten MATLAB programming laboratories in this course. Each laboratory will be related to the theory part of the course. There will also be times when the sample questions related to the basic concepts of the signals and systems topics are solved.

Mode of Delivery:

Face to face

Place of Special Course Internship (If any):

None.

Pre-requisites:

None.

Co-requisites:

None.

Recommended Optional Programme Components:

None.

Course Contents:

Introduction to the MATLAB Continuous signals and systems Linear system analysis Convolution Laplace transform Fourier series Fourier transform discrete-time signals and systems

Course Category:

1.	Core Courses	X
2.	Major Area Courses	
3.	Supportive Courses	
4.	Transferable Skill Courses	
5.	Communication and Management Skills Courses	

Textbooks:

1. Luis F. Chaparro, Signals and Systems Using Matlab, Academic Press, 2010. ISBN :978-0-12-374716-7

Course Outline:

Weeks	Subjects to be Discussed / Covered
1 . Week	Introduction to the signals and systems & basic MATLAB usage.
2 . Week	Signals & Classifications
3 . Week	Basic Signal Operations
4 . Week	Elementary Signals
5 . Week	Classifications of continuous-time system
6 . Week	Linear time-invariant system (LTI)
7 . Week	Properties of LTI system
8 . Week	System described by differential equations
9 . Week	Laplace Transform & Inverse Laplace Transform
10. Week	Applications of Laplace Transform with MATLAB
11. Week	Fourier series & Systems with periodic inputs
12. Week	Fourier Transform
13. Week	Applications of Fourier Transform with MATLAB
14. Week	Discrete-Time System
15. Week	Final Exam
16. Week	Final Exam

In Maltepe University, there is no general mid-term week for all courses. Each midterm for each course is given by the instructor of the course, by adding an extra week to the above 16 weeks course outline.

Evaluation System

Semester Requirements	Number	Percentage of grade
Attendance	14	-
Laboratory	10	20 (%)
Application	-	-
Field Work	-	-
Special Course Internship (If any)	-	-
Homework Assignments	-	-
Presentations	-	-
Project	-	-
Seminar	-	-
Quiz	-	-
Listening	-	-
Mid-Terms	1	30 (%)
Final	1	50 (%)
Total		100

ECTS Student Workload Table

Activities	Number	Duration (hours)	Workload
Course Hours (Including exam week 14x hours/week)	14	2	28
Laboratory	14	2	28
Application	-	-	-
Field Work	-	-	-
Special Course Internship (If any)	-	-	-
Study Hours-out of Class (pre/after studies)	14	5	70
Presentation / Seminar Preparation	-	-	-
Project	-	-	-
Homework Assignments	-	-	-
Quiz	-	-	-
Listening	-	-	-
Mid-Terms	1	19	19
Final	1	30	30
Total Workload			175

Relationship Between Course Learning Outcomes and COMPUTER ENGINEERING (ENGLISH)(ENGLISH) Programme Key Learning Outcomes

		Level of Contribution				
No	Programme Key Learning Outcomes	1	2	3	4	5
1	Applies mathematics, science and engineering knowledge towards solving computer engineering problems.					X
2	Solves computer engineering problems by identifying the problem, and, determining the appropriate modeling and solution methods					X
3	Has the skills to design and develop computer engineering solutions to meet the requirements of various systems problems					X
4	The ability to use computer engineering tools and skills effectively					X
5	Gathers data, processes analyzes, and, reports the results.				X	
6	Follows the technological advances and the awareness for life-long learning.				X	
7	Takes active and effective duties in team studies as well as interdisciplinary activities and shows leadership.		X			
8	Has the skills to have effective oral and written communication			X		
9	Has the skills to follow and utilize international publications			X		
10	Takes professional and ethical responsibilities			X		
11	Aware of real life applications and problems			X		
12	Understand the national and international level legal, social, and cultural and environmental effects of engineering applications.			X		