



**ESOGU ELECTRICAL-ELECTRONICS ENGINEERING DEPARTMENT  
COURSE INFORMATION FORM**

Course Title	Course Code
COMPUTER PROGRAMMING	151222137

Semester in Program	Number of Course Hours per Week		ECTS Credit
	Theory	Practice	
Spring	2	2	5

Course ECTS Credit Distribution				
Basic Sciences	Engineering Sciences	Design	General Education	Social
40	40	0	20	0

Language of Instruction	Course Level	Course Type
English	Undergraduate	Required

<b>Prerequisite</b>	NONE
<b>Objectives of the Course</b>	To introduce pointers to implement call-by-reference concepts and C dynamic data structures. To use characters and strings in programs. To be able to collect related data under C structures and implement programs with structures. To be learned why dynamic data structures are important for programming languages. To able to select appropriate techniques for file processing operations.
<b>Brief Course Content</b>	Pointers, Characters and Strings, Structures, C Data Structures, and File Processing

Learning Outcomes of the Course	Contributed POs	Teaching Methods *	Assessment Methods **
1 Students will learn pointers to implement call-by-reference concepts and C dynamic data structures.	2, 4, 5b, 6a	1,3,5,10,11	A, D, I, K
2 Students will learn how to use characters and strings together with corresponding libraries.	2, 4, 5b, 6a	1,3,5,10,11	A, D, I, K
3 Students will learn and use structures.	2, 4, 5b, 6a	1,3,5,10,11	A, D, I, K
4 Students will learn why dynamic data structures are an important concept and how they are implemented.	2, 4, 5b, 6a	1,3,5,10,11	A, D, I, K
5 Students will learn how to use file processing operations.	2, 4, 5b, 6a	1,3,5,10,11	A, D, I, K
6			
7			
8			

\*Teaching Methods 1:Lecture, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

\*\*Assessment Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

<b>Main Textbook</b>	Paul Deitel and Harley Deitel, C How to Program, 7th Edition, Pearson Education.
<b>Supplementary Resources</b>	Web sites and other sources.
<b>Necessary Course Material</b>	NONE

Course Weekly Schedule	
1	Review of C functions and arrays.

2	Pointers 1. Pointer variables, definition and initialization, pointer operators, pass argument to function by reference.
3	Pointers 2. Pointer expressions and arithmetic, relationship between pointers and arrays, const qualifier with pointers.
4	Examples for pointers.
5	Characters and Strings 1. Fundamentals of characters and strings, character-handling library.
6	Characters and Strings 2. String-handling library for manipulation, comparison and search for strings.
7	Structures 1. Definition and initialization of structures, accessing structure members.
8	Mid-Term Exams
9	Solving midterm questions
10	Structures 2. Using structures with functions, typedef, unions, and enumeration constants.
11	Data Structures 1. Dynamic memory allocation, linked lists.
12	Data Structures 1. Linked lists, stacks, and queues.
13	File Processing 1. Files and streams, sequential-access files reading, writing and updating.
14	File Processing 2. Random-access files reading, writing and updating.
15	Examples for structures, data structures, and file processing.
16,17	Final Exams

Calculation of Course Workload			
Activities	Count	Time (Hour)	Total Workload (Hour)
Weekly classroom time	14	2	28
Weekly study time (review, reinforcing, preparation)	14	2	28
Working Questions	5	3	15
Lab Experiments	11	2	22
Studying for experiments	11	2	22
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	20	20
Final Exam	1	2	2
Studying for Final Exam	1	20	20
<b>Total workload</b>			<b>159</b>
<b>Total workload / 30</b>			<b>5.3</b>
<b>Course ECTS Credit</b>			<b>5</b>

Assessment	
Activity Type	%
Mid-term	30
Experimental Skill	30
Bir öge seçin.	
Bir öge seçin.	
<b>Final Exam</b>	40
<b>Total</b>	100

**COURSE CONTRIBUTION TO THE PROGRAM OUTCOMES**

(5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)

NO	PROGRAM OUTCOMES	Contribution
1	a. Sufficient knowledge of mathematics	
	b. Sufficient knowledge of basic sciences	
	c. Sufficient basic engineering and Electrical-Electronics engineering knowledge	
	d. Skill of applying all these knowledge and experience to complicated Electrical-Electronics engineering problems	
2	Skill of defining, identifying, formulating and solving the complicated problems in Electrical-Electronics engineering and related areas by applying appropriate analysis and modelling methods.	2
3	Skill of designing a complicated process, system, equipment or product by applying modern design methods under realistic constraints and conditions.	
4	To analyze and solve the complicated engineering problems: a. skill of developing, selecting and applying the required techniques and devices	5
	b. skill of using information technologies effectively	4
5	To study the complicated on the complicated Electrical-Electronics engineering problems and research subjects: a. skill of experimental design	
	b. skill of performing the experiments, collecting the data and analyzing and interpreting the results	5
6	a. Skill of performing individual studies	2
	b. Skill of performing intra and interdisciplinary and multidisciplinary teamwork and studies	
7	a. Skill of effective oral and written communication in Turkish and English	
	b. Skill of improving and using foreign language knowledge	
	c. Skill of effective reporting, understanding the reports and preparing the design and production reports	
	d. Skill of effective presentation and giving and getting clear and understandable instructions.	
8	Awareness of the necessity of life-long learning and skill of accessing to information and following the improvements in contemporary science and technology	
9	a. Awareness of necessity of behaving in accordance with the ethical principles and awareness of the importance of having professional ethical responsibilities	
	b. Knowledge about legal regulations and standards of engineering	
10	a. Knowledge about project management, risk management and change management	
	b. Awareness of the significance of entrepreneurship and innovation	
	c. Knowledge about sustainable development	
11	Knowledge about the effects of engineering applications and practices on the global and social health, ecology and safety, knowledge about the current problems in relation to the working areas of Electrical-Electronics engineering; and awareness of the legal issues resulting from engineering solutions	
12	Knowledge about modern problems in local and universal scale	

**INSTRUCTORS**

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**Date:**06.07.2024