ESOGU ELECTRICAL-ELECTRONICS ENGINEERING DEPARTMENT
COURSE INFORMATION FORM

Course Title	Course Code
OBJECT ORIENTED PROGRAMMING II	151228620

Semester in Program	Number of Course Hours per Week		ECTS Credit
	Theory	Practice	
Spring	3	2	7

Course ECTS Credit Distribution				
Basic Sciences	Engineering Sciences	Design	General Education	Social
20	40	30	10	0

Language of Instruction	Course Level	Course Type
English	Undergraduate	Elective

Prerequisite	NONE
Objectives of the Course	To introduce basic concepts of object-oriented programming. To be able to use decision and repetition structures, functions, file processing and exception handling while developing software. To know data structures such as lists and strings in order to implement software. To design software by using classes.
Brief Course Content	Basic Concepts, Input/Output, Decision and Repetition Structures, QT-IDE, Functions, File Processing, Exception Handling, String and Lists, Classes.

	Learning Outcomes of the Course	Contributed POs	Teaching Methods *	Assessment Methods **
1	Students will learn basic concepts about the object-oriented programming.	2, 3, 4, 5a, 6b	1,3,5,11,14,15	A,D,E,G,I,J
2	Students will learn and use decision and repetition structures.	2, 3, 4, 5a, 6b	1,3,5,11,14,15	A,D,E,G,I,J
3	Students will learn and use functions concept.	2, 3, 4, 5a, 6b	1,3,5,11,14,15	A,D,E,G,I,J
4	Students will learn why exception handling is an important concept and how it is implemented.	2, 3, 4, 5a, 6b	1,3,5,11,14,15	A,D,E,G,I,J
5	Students will learn and use data structures such as list and string.	2, 3, 4, 5a, 6b	1,3,5,11,14,15	A,D,E,G,I,J
6	Students will learn how to be used classes while developing software.	2, 3, 4, 5a, 6b	1,3,5,11,14,15	A,D,E,G,I,J
7	Students will learn how to be used QT while developing user interface.			
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:Induvidual 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

Main Textbook	Tony Gaddis, Starting Out with Python, 4th Edition, Pearson Education, 2009.
Supplementary Resources	Robert Sedgewick, Kevin Wayne, Robert Dondero, Introduction to Programming in Python: An Interdisciplinary Approach, First Edition, Addison-Wesley Professional, 2015.
Necessary Course Material	NONE

Course Weekly Schedule	
1	Introduction to Python programming
2	Basic Concepts (Input/Output, Variables, Comments, Arithmetic and so on)

3	Decision Structures	
4	Repetition Structures	
5	Functions	
6	Data Structures (lists,tuples,strings,dictionaries, and sets)	
7	Libraries (numpy, pandas, matplot)	
8	Mid-Term Exams	
9	Classes 1	
10	Classes 2	
11	Inheritance and Polymorphism	
12	QT- IDE 1	
13	QT- IDE 2	
14	QT- IDE 3	
15	Exception Handling and File Processing	
16,17	Final Exams	

Calculation of Course Workload			
Activities	**Count**	**Time (Hour)**	**Total Workload (Hour)**
Weekly classroom time	14	3	42
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
Lab Project (Preparation and presentation time included)	1	20	20
Project (Preparation and presentation time included)	1	20	20
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
		Total workload	213
		Total workload / 30	7.1
		Course ECTS Credit	7

Assessment	
Activity Type	**%**
Mid-term	25
Experimental Skill	15
Project Observation	20
Bir öğe seçin.	
Bir öğe seçin.	
Final Exam	40

		Total	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.		3
3	Skill of designing a complicated process, system, equipment or product by applying modern design methods under realistic constraints and conditions.		4
4	To analyze and solve the complicated engineering problems:		5
	a.	skill of developing, selecting and applying the required techniques and devices	
	b.	skill of using information technologies effectively	5
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				
Prepared by	Dr. Burak KALECİ			

Date: 06.07.2024