

### OSTIM TECHNICAL UNIVERSITY COMPUTER ENGINEERING

# **ELEC4 PROGRAMMING IN PYTHON**

### **ELEC4** Programming in Python

Course Name	Course Code	Term	Hour	Practice	Lab	Credit	ECTS
Programming in Python	CENG	7	4	0	0	4	4

Language of the Course	English
Type of Course	Compulsory
Course Level	Undergraduate
Method of Teaching	Face-to-face, online
Instructor	
Course Learning and Teaching Techniques	Lecture, Homework, Project

#### **Purpose of the Course**

The aim of this course is to develop the students basic knowledge of programming and ability to create simple applications by using Phyton programming language.

#### Learning Outcomes

Students who successfully complete this course will;

- Describe the semantics of Python programming language
- Illustrate the process of structuring the data using lists, dictionaries, tuples, strings and sets.
- Illustrate the Object-oriented Programming concepts in Python.
- Demonstrate the basic database design for storing data as part of a multi-step data gathering, analysis, and processing.

### **Course Content**

Provides basic knowledge on fundamentals of phyton programming language application, introduction to Python; basic and container data types; variables, expressions, statements; repetitive programming; algorithmic thinking; functions; working with files; exception handling and debugging.

Weekly Plan and Related Preparation Studies				
Week	Subjects			
1	Introduction to Phyton Programming Language			
2	Basic operations, Values and Variables			
3	Expressions and Arithmetic, conditional Statements			
4	Loops			
5	Function and User defined functions			
6	Object			
7	List			



8	Midterm
9	Tuples, Dictionaries, and Sets
10	Class Design
11	File Operations
12	Object oriented design
13	GUI Programming
14	Network Programming
15	Project Presentations
16	Final

## **Resources (Textbook and supplementary book)**

Python Crash Course, Eric Matthes *(No Starch Press, 2016)* Kenneth A. Lambert, The Fundamentals of Python: First Programs, 2011, Cengage Learning,

ISBN: 978-1111822705

3. Fundamentals of Python Programming, Richard L. Halterman

Evaluation System						
Studies	Number	Contribution				
Attendence						
Lab						
Application						
Field Study						
Course Specific Internship (if applicable)						
Quizzes/Studio/Critical						
Homework						
Presentation	1	% 20				
Projects						
Report						
Seminar						
Midterm Exams/Midterm Jury	1	% 30				
General Exam/Final Jury	1	% 50				
	Total	% 100				
Contribution of Mid-Semester Studies to Success Grade		% 50				
Contribution of End of Semester Studies to Success Grade		% 50				
	Total	% 100				

Course Category				
Basic Vocational Courses				
Specialization/Field Courses	х			
Support Lessons				
Communication and Management Skills Lessons				
Transferable Skills Lessons				

Course Learning Outcomes and Program Qualifications								
No. Drogrom Qualifications / Quitasmas				Contribution Level				
NO	No Program Qualifications / Outcomes		2	3	4	5		
1	Solve, test and debug basic problems using python script.					x		
2	To learn how to use lists, tuples, and dictionaries in Python programs				х			
3	To learn how to design object-oriented programs with Python classes				х			



4	Usage of inheritance and polymorphism for reusability		х	
5	Identify the commonly used operation involved in files for I/O processing		х	
6	To learn how to use exception handling in Python applications for error handling		x	
7	To learn how to read and write files in Python			х

ECTS/Workload Table						
Activities	Count	Duration (Hours)	Total Workload			
Lesson hours (Including the exam week: 16 x total lesson hours)	16	2	32			
Lab						
Application						
Course Specific Internship						
Field Study						
Out of Class Study Time						
Presentation/Seminar Preparation						
Projects	1	10	10			
Reports						
Homeworks						
Quizzes/Studio Critic						
Preparation Time for Midterm Exams/Midterm Jury	1	20	20			
Preparation Time for the General Exam/General Jury	1	40	40			
Total Workload			102			