



İZMİR UNIVERSITY OF ECONOMICS

Faculty of Arts and Sciences
Physics

SE 113 - Introduction to Programming

COURSE INTRODUCTION AND APPLICATION INFORMATION

Course Name	Introduction to Programming
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Code	Semester	Theory (hour/week)	Application/Laboratory (hour/week)	Local Credits	ECTS
SE 113	Fall	2	2	3	6

Prerequisites	None
Course Language	English
Course Type	Required
Course Level	First Cycle
Mode of Delivery	-
	* Problem Solving * Q&A * Application: Experiment / Laboratory / Workshop * Lecture / Presentation
Course Coordinator	* <u>Dr. Öğr. Üyesi İlker KORKMAZ</u>
Course Lecturer(s)	* <u>Doç. Dr. Tarık Kışla</u> * <u>Dr. Öğr. Üyesi Lütfi Mutlu</u> * <u>Öğr. Gör. Ceren Kayalar</u> * <u>Öğr. Gör. Raif KAPLAN</u>
Course Assistants	* <u>Araş. Gör. Erdem Okur</u> * <u>Araş. Gör. Serhat Uzunbayır</u> * <u>Araş. Gör. Hande Aka Uymaz</u> * <u>Araş. Gör. Tuğay DİREK</u> * <u>Araş. Gör. Melek Büşra Temuçin</u>

Course Objectives	The main objective of this course is to provide the students with basic skills of programming. Python programming language will be used. Topics include the following
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concepts: fundamental types, variables, statements, control flow structures, functions, file operations and classes.

Course Learning Outcomes	<p>The students who succeeded in this course;</p> <ul style="list-style-type: none"> * Will be able to develop programs in Python programming language. * Will be able to use control structures (decision and loop statements) in Python language. * Will be able to design functions in Python language. * Will be able to use several data structures (strings, lists, dictionaries) in Python language. * Will be able to handle file input/output operations using Python programming language. * Will be able to define classes using Python programming language 		
Course Description	<p>Course Content □ This course introduces the students to the fundamental concepts of programming using Python programming language.</p>		
Course Category	Core Courses		
	Major Area Courses		
	Supportive Courses		
	Media and Managment Skills Courses		
	Transferable Skill Courses		

WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES

Week16	Subjects	Related Materials
1	Introduction to programming in Python.	Severance, Python for Everybody: Exploring Data in Python 3, Chapter 1.
2	Fundamental data types, constants, variables, operators; LAB#1.	Severance, Python for Everybody: Exploring Data in Python 3, Chapter 2.
3	Input statements, algorithm, pseudocode; LAB#2.	Severance, Python for Everybody: Exploring Data in Python 3, Chapters 3 and 5.
4	Flow control: Conditional execution; LAB#3.	Severance, Python for Everybody: Exploring Data in Python 3, Chapter 3.
5	Flow control: Loop/repetition statements, for, while; LAB#4.	Severance, Python for Everybody: Exploring Data in Python 3, Chapter 5.
6	Flow control: Nested loops, break, continue; LAB#5.	Severance, Python for Everybody: Exploring Data in Python 3, Chapter 5.
7	Functions; LAB#6.	Severance, Python for Everybody: Exploring Data in Python 3, Chapter 4.
8	Midterm exam.	
9	Strings; LAB#7.	Severance, Python for Everybody: Exploring Data in Python 3, Chapter 6.
10	Lists; LAB#8.	Severance, Python for Everybody: Exploring Data in Python 3, Chapter 8.
11	Dictionaries; LAB#9.	Severance, Python for Everybody: Exploring Data in Python 3, Chapter 9.
12	File handling: Input/output operations; LAB#10.	Severance, Python for Everybody: Exploring Data in Python 3, Chapter 7
13	Classes and objects: Using objects; LAB#11.	Severance, Python for Everybody: Exploring Data in Python 3, Chapter 14.
14	Classes and objects: Defining classes; LAB#12.	Severance, Python for Everybody: Exploring Data in Python 3, Chapter 14.

15	Review.	
16	Final exam.	

SOURCES

Course Notes / Textbooks	Python for Everybody: Exploring Data in Python 3, Charles Severance, CreateSpace Independent Publishing Platform, 978-1530051120
Suggested Readings/Materials	<ul style="list-style-type: none"> <input type="checkbox"/> Python Programming Fundamentals, Kent D. Lee, ISBN 978-1-4471-6642-9 <input type="checkbox"/> The Python Language Reference https://docs.python.org/3/reference/index.html <input type="checkbox"/> Interactive Python Tutorial https://www.learnpython.org/

EVALUATION SYSTEM

Semester Activities	Number	Percentage of Grade
Participation	-	-
Laboratory / Application	1	20
Field Work	-	-
Quiz/Studio Critic	-	-
Portfoilo	-	-
Homework Assignment	1	5
Presentation/Jury	-	-
Project	-	-
Seminar/Workshop	-	-
Oral Exam	-	-
Midterm	1	35
Final	1	40
Total	4	100

WEIGHTING OF SEMESTER ACTIVITIES ON THE FINAL GRADE	3	60
WEIGHTING OF END-OF-SEMESTER ACTIVITIES ON THE FINAL GRADE	1	40
Total	4	100

ECTS / WORKLOAD TABLE

Semester Activities	Number	Duration (Hours)	Total Workload
Course Hours (Including Exam Week: 16 x Total Hours)	16	2	32
Laboratory / Application Hours	16	2	32
Study Hours Out of Class	14	6	84
Field Work	-	-	-
Quiz / Studio Critique	-	-	-
Portfolio	-	-	-
Homework / Assignment	1	6	6
Presentation / Jury	-	-	-
Project	-	-	-
Seminar / Workshop	-	-	-
Oral Exam	-	-	-
Midterm	1	12	12
Final	1	14	14
		Total Workload	180

THE RELATIONSHIP BETWEEN COURSE LEARNING OUTCOMES AND PROGRAM QUALIFICATIONS

#	Program Qualifications / Outcomes	* Level of Contribution				
		1	2	3	4	5
1	To be able master and use fundamental phenomenological and applied physical laws and applications,					
2	To be able to identify the problems, analyze them and produce solutions based on scientific method,					
3	To be able to collect necessary knowledge, able to model and self-improve in almost any area where physics is applicable and able to criticize and reestablish his/her developed models and solutions,					
4	To be able to communicate his/her theoretical and technical knowledge both in detail to the experts and in a simple and understandable manner to the non-experts comfortably,					
5	To be familiar with software used in area of physics extensively and able to actively use at least one of the advanced level programs in European Computer Usage License,					X
6	To be able to develop and apply projects in accordance with sensitivities of society and behave according to societies, scientific and ethical values in every stage of the project that he/she is part in,			X		
7	To be able to evaluate every all stages effectively bestowed with universal knowledge and consciousness and has the necessary consciousness in the subject of quality governance,					
8	To be able to master abstract ideas, to be able to connect with concrete events and carry out solutions, devising experiments and collecting data, to be able to analyze and comment the results,					
9	To be able to refresh his/her gained knowledge and capabilities lifelong, have the consciousness to learn in his/her whole life,			X		
10	To be able to conduct a study both solo and in a group, to be effective actively in every all stages of independent study, join in decision making stage, able to plan and conduct using time effectively.					
11	To be able to collect data in the areas of Physics and communicate with colleagues in a foreign language ("European Language Portfolio Global Scale", Level B1).					
12	To be able to speak a second foreign at a medium level of fluency efficiently					
13	To be able to relate the knowledge accumulated throughout the human history to their field of expertise.					

*1 Lowest, 2 Low, 3 Average, 4 High, 5 Highest