



**HASAN KALYONCU UNIVERSITY**  
**Faculty of Engineering**  
**Course Description Form**

<b>COURSE: COMPUTER PROGRAMMING II</b>				
<b>CODE: CENG112</b>		<b>SEMESTER: SPRING</b>		
<b>LANGUAGE: ENGLISH</b>		<b>TYPE: COMPULSORY</b>		
<b>PRE-REQUISITES: NONE</b>	<b>THEORY</b>	<b>PRACTICAL</b>	<b>CREDIT</b>	<b>ECTS</b>
<b>CO-REQUISITES: NONE</b>				
<b>WEEKLY HOURS:</b>	3	2	4	5

**CONTENT OF THE COURSE:**

This second course in a sequence of two courses as covering subjects at higher level in Python Programming language and an introduction to programming concept by using C programming language. As a continuation of the first course following subjects will be covered in Python Programming Language. Tuples and applications. Strings and string processing. Dictionaries and Sets. As second part of this course, the following subjects will be taught in C programming language. Introduction to C programming. Structured programming. Program control statements and structures. Functions. Arrays and applications including sorting, searching algorithms and multidimensional arrays. Pointers and applications.

**OBJECTIVE OF THE COURSE:**

The course aims to present higher level programming subjects in Python and make an introduction to C programming language. It presents knowledge about structural programming, algorithm concept and design of algorithms from an elementary level to an advanced level. At the end of this course, the students will have learned how to develop a program in Python programming language for various problems. Also students will learn C programming language at sufficient level to be able to follow up the future courses like Data Structures and Object Oriented Programming with C#.

**WEEKLY SCHEDULE AND PRE-STUDY PAGES**

<b>Week</b>	<b>Topics</b>
1	Chapter 7 Lists and Tuples
2	Chapter 8 More About Strings
3	Chapter 8 More About Strings
4	Chapter 9 Dictionaries and Sets
5	Chapter 9 Dictionaries and Sets
6	Chapter 2 Introduction to C Programming
7	Chapter 3 Structured Program Development in C
8	Midterm Examination
9	Chapter 4 C Program Control
10	Chapter 5 C Functions
11	Chapter 6 C Arrays
12	Chapter 6 C Arrays
13	Chapter 7 C Pointers
14	General course review and advices on the things students should practice through summer term.

**TEXTBOOK:**

- Starting Out with Python Global Edition (4E) by Tony Gaddis Pearson (2018).
- C How to Program, 6th Edition by Paul Deitel and Harvey Deitel, Pearson (2010).

**REFERENCE BOOKS:**

- Introduction to Programming using Python, 1E by Y. Daniel Liang, Pearson (2012).
- Python Programming for the Absolute Beginner, 3E by M. Dawson, Course Technology (2010).
- Introduction to Programming Concepts with Case Studies in Python, 1E by Üçoluk & Kalkan, Springer (2012).
- Python How to Program, 1E by Paul Deitel and Harvey Deitel, Pearson (2001).
- Problem Solving and Program Design in C, 6th Ed. by Jeri R. Hanly and Elliot B. Koffman, Pearson (2010).
- Programming in C, 3rd Edition by Stephen G. Kochan, Pearson (2005).

**EVALUATION SYSTEM:**

<b>IN-TERM STUDIES</b>	<b>QUANTITY</b>	<b>PERCENTAGE (%)</b>
Midterm Exam	1	25
Attendance	1	5
Laboratory works	13	25
Quiz		
Final Exam	1	45
<b>TOTAL</b>	<b>16</b>	<b>100</b>
CONTRIBUTION OF INTERM STUDIES TO OVERALL GRADE	15	55
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE	1	45
<b>TOTAL</b>	<b>16</b>	<b>100</b>

<b>COURSE CATEGORY:</b>	<b>PERCENTAGE (%)</b>
Mathematics and Basic Sciences	20
Engineering	40
Engineering Design	40
Social Sciences	0

<b>TABLE OF ECTS / WORKLOAD:</b>			
<b>Activities</b>	<b>QUANTITY</b>	<b>Duration (Hour)</b>	<b>Total Workload</b>
Course Duration	13	3	39
Hours for off-the-classroom study (Pre-study, practice)	14	5	70
Laboratory works	13	2	26
Mid-term	1	2	2
Final examination	1	2	2
Homework			
Quiz			
<b>Total Work Load</b>			<b>139</b>
<b>Total Work Load / 30</b>			<b>4,63</b>
<b>ECTS Credit of the Course</b>			<b>5</b>

	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>
<b>LO1</b>	1	2	3	0	0	2	0	2	0	0	0
<b>LO2</b>	1	3	3	0	0	3	0	2	0	0	0
<b>LO3</b>	2	3	3	0	0	3	0	2	0	0	0
	PO: Program Outcomes   LO: Learning Outcomes Values: 0: None   1: Low   2: Medium   3: High										

<b>INSTRUCTOR(S):</b>	Assoc. Prof. Dr. M. Fatih HASOĞLU
<b>FORM PREPARATION DATE:</b>	22.05.2019

<b>LEARNING OUTCOMES OF THE COURSE:</b>	<b>PROGRAM OUTCOMES:</b>
<p><b>LEARNING OUTCOMES OF THE COURSE:</b></p> <p><b>LO1:</b> Gain knowledge about programming.</p> <p><b>LO2:</b> Gain knowledge about structural programming, algorithm concept and design of algorithms.</p> <p><b>LO3:</b> Learn how to develop a program in Python and C programming languages for various problems.</p>	<p><b>PO1:</b> Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied knowledge in these areas in complex engineering problems.</p> <p><b>PO2:</b> Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.</p> <p><b>PO3:</b> Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.</p> <p><b>PO4:</b> Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in engineering practice; ability to employ information technologies effectively.</p> <p><b>PO5:</b> Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions.</p> <p><b>PO6:</b> Ability to work efficiently in intra-disciplinary</p>

	<p>and multi-disciplinary teams; ability to work individually.</p> <p><b>PO7:</b> Ability to communicate effectively in Turkish, both orally and in writing; knowledge of a minimum of one foreign language; ability to write effective reports and comprehend written reports, prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions.</p> <p><b>PO8:</b> Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.</p> <p><b>PO9:</b> Consciousness to behave according to ethical principles and professional and ethical responsibility; knowledge on standards used in engineering practice.</p> <p><b>PO10:</b> Knowledge about business life practices such as project management, risk management, and change management; awareness in entrepreneurship, innovation; knowledge about sustainable development.</p> <p><b>PO11:</b> Knowledge about the global and social effects of engineering practices on health, environment, and safety, and contemporary issues of the century reflected into the field of engineering; awareness of the legal consequences of engineering solutions.</p>
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