

# Introduction to Programming (C++)

Assist. Prof. Mehmet Şükrü Kuran

Instructor	Course Information <sup>1</sup>	
Office:	Terms	: Fall
Bahçeşehir University	Time	: 16:30 – 18:30 (Tuesday)
Faculty of Engineering and Natural Sciences	Course Credit/ECTS	: 3/6
Department of Computer Engineering	Classroom	: N/A
	Course Type	: Online

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Office Hours: Wednesday 10:00 – 12:00

CV (link): N/A

## Course Objective and Learning Objectives

This course aims to provide an overview of programming concepts, design and an introduction to coding using the C++ language. The course has a focus on creating working computer programs in C++. This course will address fundamental concepts of analysis, design, code development, and testing.

The students who have succeeded in this course

1. Identifying the components of a computer system
2. Defining and analyzing the problem, finding a logical sequence of precise steps, developing algorithms
3. Having knowledge of the fundamental programming concepts
4. Developing computer programs with C++
5. Understanding the basics of structured programming
6. Gaining hands-on experience to develop object oriented thinking
7. Becoming familiar with some major data structures and algorithms
8. Becoming familiar with advanced programming concepts of C++

## Course Structure

The course will be carried out via online sessions.

## Online Office Hours

Office hours will be available on Wednesdays between 10:30 – 13:00

## Course Policy

### Communication Channels and Methods:

You can use the following communication channels to communicate with the lecturer

- Messages via It's Learning platform
- Messages via the Microsoft Teams platform

<sup>1</sup> It is essential that the syllabus announced at the beginning of the term is not changed except when necessary. When a requirement occurs, the curriculum can be changed by the lecturer of the course by notifying this situation in writing or verbally beforehand. It is the student's responsibility to follow the current program.

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- Direct e-mail to the lecturer's official e-mail

You are encouraged to use your official BAU e-mail address while asking questions via e-mail.

Use a respectful and concise language in your messages, clearly explaining the problem. You can also attach images, code pieces, and screenshots if necessary. Since this is a computer programming course you can use various internet slang, l33t, emojis within the e-mail as long as you are respectful. Note that the lecturer can also use these languages too.

### Usage of Digital Tools:

You need to participate to the course with a computer on which a C++ integrated development environment (IDE) (e.g., CLion) and a C++ compiler (e.g., gcc). You are strongly encouraged to use your IDE to formulate solutions to the programming challenges given during the lectures.

You are also encouraged to use various online platforms (e.g., StackOverflow) to find solutions to the issues you will encounter during the programming challenges.

### Assignments and Project Deadline:

All submissions to the midterm exam, final exam, and quizzes, will be sent via the It's Learning platform.

### Attendance:

Since this is an online course, no attendance will be taken.

**Disabled Student Support** You can contact me directly regarding the issues that may be an obstacle for you (vision, hearing, etc.). In addition to this, there is a Disabled Student Unit in order to minimize the difficulties that our disabled students will encounter due to their disabilities and to eliminate the obstacles. You should contact this unit regarding your situation. [Click to access the web page of this unit.](#)

### Oral and Written Communication Ethics:

During the lectures and lab sessions, you have to express yourself respectfully in your communication with your friends, with the lecturer, and lab assistants. Same goes with written communication via the aforementioned communication channels.

### Privacy and Copyright:

In accordance with the Personal Data Protection Law (a.k.a. KVK in Turkish), the courses will be recorded on the online platform within the scope of your approval and knowledge.

### Course Resources

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"C++ How to Program," Deitel, P. and Deitel, H., 10th Edition, Pearson, 2016.  
"C++ Primer," Stanley B. Lippman, Josée Lajoie, and Barbara E. Moo, 5th Edition, Addison-Wesley, 2012.

### Grading and Evaluation

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Assignment	Description	Scoring	Weight (%)
Midterm Exams	You will have two (2) midterm exams where you will be responsible from the topics of <ul style="list-style-type: none"><li>- Week 1 – Week 6 for Midterm Exam #1</li><li>- Week 8 – Week 10 for Midterm Exam #2</li></ul>	100	40

	In both midterm exams, the students will be asked several questions and expected to submit a code for each question. Students' codes will be run with some test input – output couples.		
<b>Quizzes</b>	There will be eight (8) quizzes throughout the course within the course hours. Each quiz will be based on either the current week's topics or the previous week's topic. Each quiz will constitute 12.5 points of the overall quizzes assignment.	100	20
<b>Final Exam</b>	You will be responsible from all the topics covered in the course in the Final exam.  Final Exam will be conducted in a similar fashion to the Midterm Exams. The students will be asked several questions and expected to submit a code for each question. Students' codes will be run with some test input – output couples.	100	40
<b>TOTAL</b>		<b>100</b>	<b>100</b>

### Course Calendar

Week/Place	Course Topic	To Do	Assignments & Deadline
<b>W1 ON</b>	Introduction to Programming and C++ Development		-
<b>W2 ON</b>	Variables and Basic Operators	Review Lecture #1	-
<b>W3 ON</b>	Conditional Statements in C++, Part I - if, else, switch	Review Lecture #2	-
<b>W4 ON</b>	Conditional Statements in C++, Part II - if, else, switch	Review Lecture #3	-
<b>W5 ON</b>	Repetitive Statements in C++ (i.e., while, for)	Review Lecture #4	-
<b>W6 ON</b>	Functions in C++, Part I	Review Lecture #5	-
<b>W7 ON</b>	<i>Midterm Exam #1</i>		-
<b>W8 ON</b>	Functions in C++, Part II	Review Lecture #6	-
<b>W9 ON</b>	Arrays and Vectors in C++	Review Lecture #8	-

<b>W10 ON</b>	2D & Multidimensional Arrays in C++	Review Lecture #9	-
<b>W11 ON</b>	<i>Midterm Exam #2</i>		-
<b>W12 ON</b>	Pointers, Passing values to functions in C++	Review Lecture #10	-
<b>W13 ON</b>	Bitwise operators and File operations in C++	Review Lecture #12	-
<b>W14 ON</b>	Classes and Objects in C++	Review Lecture #13	-

### Matters Needing Attention

- Make sure that you install a C++ IDE (e.g., CLion) and a C++ compiler (e.g., gcc) to the computer you are working with as soon as possible.
- Practice at home with the codes written in the previous week's lecture.
- Practice at home with the codes written in the previous week's lab session.
- Formulate other programming challenges based on the challenges given in previous week's lecture and lab sessions and try to solve them.
- Attend the classroom every week and try to solve the programming challenges given within each lecture, and ask questions to the lecturer if you cannot formulate a good solution to each challenge

### Academic Integrity, Cheating and Plagiarism

In the context of this course note that sharing code pieces to your classmates is also considered as cheating. So, sharing code pieces are strictly forbidden (You can discuss how to write a program for a given programming challenge as much as you want. But sharing code is forbidden)

#### • How is plagiarism penalized?

If it has been noticed that you've copied another student's code, you will immediately fail from the course given a chance to defend yourself.

**ARTICLE 25 – (1)** *In case it is doubled that a student cheats or attempts to cheat, commits plagiarism or similar violations defined in the applicable disciplinary regulation in any exam, assignment or other assessment activities, a disciplinary proceeding is brought against the student. Such activity is not assessed during the proceedings. A student who is found guilty is assigned zero point in addition to the disciplinary punishment. If the student is found innocent as a result of disciplinary proceeding, the exam taken by the student shall be assessment or a make-up exam or activity is provided.*

[You can access Bahçeşehir University and Higher Education Institution Regulations by clicking this sentence.](#)