



Program Software Engineering

Syllabus of Course 10128

Object-Oriented Programming

Academic Year	2025
No. of course hours	6.00 Semestrial hours [Lecture 3.00 + tutorial -3.00]
Academic credits	4.50
Prerequisites	Pre: 10016 Introduction to Computer Science Pre: 10016 Introduction to Computer Science -or- 10006 Introduction To Computer Science
Please note that The prerequisites are for all programs, you are required to be updated on the prerequisites you need according to your personal program.	
Class Attendance	Not mandatory
Objectives	The students will learn how to design and implement an Object Oriented system using Java.
Abstract	The students will learn about classes and objects, constructors, inheritance, polymorphism, and interfaces, and will learn how to combine them all into an object-oriented system. The students will learn how to show the system also using class diagrams.

Academic learning outcomes

Learning outcomes related to the content of the course	The students will learn how to design an object-oriented system and show it using class diagram. The students will learn how to implement the system using Java.
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Learning outcomes - Skills

Problem solving: defining problems and identifying strategies. The ability to identify one single approach to problem solving that can be applied in a specific context.

Critical thinking: explaining the issues, foundation, contexts, and taking a position. Presenting the subject based on information sources with a certain level of interpretation, evaluation and taking a position.

Integrative learning: linking to practical experience. The ability to compare practical experience and academic knowledge, in order to find differences and similarities.

Further points of emphasis

Lecture topics by weeks

The order of the topics can be changed at the lecturer's discretion.

1	From Python to Java: syntax and concepts. Some of them will be self-learned.
2	Classes and objects: attributes, methods and visibility
3	Constructors and 'this reference.
4	System with association: composition and aggregation.
5	static: attributes and methods enum
6	Inheritance and class diagram
7	Polymorphism and class Object.
8	exceptions
9	interfaces written by the programmer
10	known interfaces: Comparable, Comparator and Cloneable Files: text and binary
11	Generics



12	Collections.
13	Analysis of an object-orientes system using SOLID

Tutorials / Labs topics by weeks

The order of the topics can be changed at the lab instructor's / tutor's discretion.

1	
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Course coordinator	Mrs. Kalif Keren
Language of instruction	Hebrew
Subjects for self-tutoring	Methods of class String and StringBuffer/Builder.
Textbooks and Recommended Bibliography	<p>1. John Lewis & William Loftus, Java Software Solutions, Foundations of Program Design, Addison Wesley, 6th Edition, 2009</p> <p>2. Paul Deitel & Harvey Deitel, Java How to Program: Late Objects Version: International Edition, 8/E, Pearson, 2010.</p> <p>3. Tony Gaddis, Introduction to Computers and Java, Addison Wesley, 4th Edition, 2010.</p>



Course Requirements and Calculation of Final Grade

Task Type	Percentage of Final Grade
Final Exam Grade	80
Midterm Exam Grade	0
Homework Assignments	0
A project in a course where there is no Final Exam	0
A project in a course where there is a Final Exam	20
Final Grade	0

Clarification to pass the course:

In order to pass the course, students must fulfill the following conditions [excluding the English Beginners Course, Labs and Workshops]:

1. Final course grade of at least 60 [taking into consideration all the above course requirements].
2. Attendance according to the attendance requirement [see section regarding attendance].

Exam and Midterm Exam

Type of Midterm Exam

Duration of Midterm Exam

Location of Midterm exam

Duration of Final Exam

150 minutes

Location of Final exam

Regular class (no computers)

Permitted Material/Tools for Exams

Standard calculator

Details of permitted materials for exam

Formula Sheets

Self-writing formula sheets

Number of single-sided sheets

2 double-sided pages written by the students.