

SYLLABUS COURSE DESCRIPTION YEAR 2025/26

COURSE TITLE	Introduction to Programming
COURSE CODE	76271
SCIENTIFIC SECTOR	INFO-01/A
DEGREE	Bachelor in Computer Science
SEMESTER	1st
YEAR	1st
CREDITS	9

TOTAL LECTURING HOURS	60
TOTAL LAB HOURS	30
ATTENDANCE	Not mandatory, but highly recommended
PREREQUISITES	The course requires knowledge of basic mathematics and set theory.
COURSE PAGE	The course page will be made available on the Microsoft Teams class for this course or on https://ole.unibz.it , as communicated by the lecturer. Additional materials can also be found in the university's Reserve Collection at https://www.unibz.it/en/services/library/new-rc/ .

SPECIFIC EDUCATIONAL OBJECTIVES	This course belongs to the type "Attività formative di base" and the subject area is "Informatica". The objective of the course is to teach the fundamental principles of programming. We will focus especially on imperative programming as the basic way to learn: (1) the basics of programming and programming elements; (2) the basics of algorithmic thinking; and (3) The basics of writing code. As programming language, we will use a subset of the Java language, mainly restricted to its imperative part. The student will learn how programs can be constructed, and also structured in more files/objects in order to solve a problem. Students will learn how to solve computational problems with well-designed programs that implement effective solutions. The learning will be based on examples, from very simple ones to more complex. We will use the Java programming language and the integrated development environment (IDE), so the goal is to train the student capability to develop java applications in this environment. The final objective for the student is to acquire the ability to solve basic algorithmic
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	problems in a Java-based application.
LECTURER	Chiara Ghidini (chiara.ghidini@unibz.it)
SCIENTIFIC SECTOR OF THE LECTURER	INFO-01/A
TEACHING LANGUAGE	English
OFFICE HOURS	Office BZ B1 5.02, Mondays 14:00–16:00, by appointment via email
TEACHING ASSISTANTS	Tiziano Dalmonte (tiziano.dalmonte@unibz.it)
OFFICE HOURS	Office BZ B1 5.29, Mondays 14:00–16:00, by appointment via email
LIST OF TOPICS COVERED	– Data types and expressions – Basic data structures and generics – Functions and parameter passing – Conditionals and loops – Arrays and collections – Classes and objects – Basic Input/Output – Exception handling – Recursion
TEACHING FORMAT	The course includes frontal lectures with exercises, lab sessions, and individual programming projects.
LEARNING OUTCOMES	Knowledge and Understanding – D1.2: Know in details the fundamental principles of programming – D1.3: Have a solid knowledge of the most important data structures and programming techniques Applying knowledge and understanding – D2.2: Be able to develop small and medium size programs using different programming languages and paradigms. – D2.3: Be able to solve problems using programming methodologies. Ability to make judgments – D3.1: Be able to collect and interpret useful data and to judge information systems and their applicability. Communication skills – D4.1: Be able to use one of the three languages English, Italian and German, and be able to use technical terms and communication appropriately.

	Learning skills – D5.1: Have developed learning capabilities to pursue further studies with a high degree of autonomy.
ASSESSMENT	The assessment consists of a programming project and a final written exam. The project is designed to evaluate learning outcomes related to the application of acquired knowledge, critical thinking, communication, and learning skills. Specifically, students are expected to design a computer application capable of effectively solving a given problem. A positive evaluation of the project is required in order to access the written exam. The project assignments include transfer-of-knowledge questions and programming exercises. The written exam assesses knowledge and understanding, the ability to apply that knowledge, and the student's learning skills. It includes verification questions, transfer-of-knowledge questions, and practical exercises.
ASSESSMENT LANGUAGE	English
EVALUATION CRITERIA AND CRITERIA FOR AWARDING MARKS	The project accounts for 40% of the final grade (12 points), while the written exam represents 60% (18 points). If the project receives a positive evaluation, the result remains valid for all three regular exam sessions within the academic year. The project will be assessed based on the quality of the solution, including ease of use, the relevance and effectiveness of the implemented functions, and the quality of the code, in line with the principles discussed during the lectures. Written exam answers will be evaluated based on their correctness and clarity.
REQUIRED READINGS	– John Lewis and William Loftus. Java Software Solutions. PEARSON INDIA, 2018. ISBN 978-93-5306-361-0. – Kathy Sierra, Bert Bates, and Trisha Gee. Head First Java: A Brain-Friendly Guide. O'Reilly Media, Sebastopol, CA, 3rd edition, June 2022. ISBN 978-1-4919-1077-1. – Cay S. Horstmann. Brief Java: Early Objects. John Wiley & Sons Inc, 9th edition, 2020. ISBN 978-1-119-74019-3.
SUPPLEMENTARY READINGS	– The Java Tutorials at https://docs.oracle.com/javase/tutorial/
SOFTWARE USED	– IntelliJ IDEA (https://www.jetbrains.com/idea/)