

COURSE DESCRIPTION – ACADEMIC YEAR 2025/2026

Course title	Introduction to Programming
Course code	76401
Scientific sector	INF/01
Degree	Bachelor in Informatics and Management (L-31)
Semester	1
Year	1
Credits	9
Modular	No

Total lecturing hours	60
Total lab hours	30
Attendance	Not mandatory, but highly recommended.
Prerequisites	There are no specific prerequisites. Basic notions of mathematics and set theory will be used.
Course page	https://ole.unibz.it/

Specific educational objectives	<p>Type of course: "di base" for L-31 Scientific area: "Formazione informatica di base" for L-31</p> <p>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.</p> <p>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 problems in a Java-based application.</p>
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Lecturer	Chiara Ghidini
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Scientific sector of lecturer	INF/01
Teaching language	English
Office hours	Mondays 14:00–16:00, by appointment via email
Lecturing Assistant (if any)	Tiziano Dalmonte
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Office hours LA	Mondays 14:00–16:00, by appointment via email

List of topics	<ul style="list-style-type: none"> • 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	Frontal lectures interleaved with exercises, labs with exercises, individual programming projects.
Learning outcomes	<p>Knowledge and understanding:</p> <ul style="list-style-type: none"> • D1.3 - Know the basic principles of programming. <p>Applying knowledge and understanding:</p> <ul style="list-style-type: none"> • D2.2 - Ability to solve algorithmic problems using programming methods. • D2.17 - Know how to manage small projects for the development of information systems and how coordinate small working groups. <p>Communication skills</p> <ul style="list-style-type: none"> • D4.5 - Ability to collaborate in interdisciplinary teams to achieve IT objectives. <p>Learning skills</p> <ul style="list-style-type: none"> • D5.1 - Learning ability to undertake further studies with a high degree of autonomy.
Assessment	<p>The assessment consists of</p> <ul style="list-style-type: none"> • a programming project • a final written exam. <p>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.</p> <p>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.</p>
Assessment language	English
Assessment Typology	Monocratic
Evaluation criteria and criteria for awarding marks	<p>The project accounts for 40% of the final grade (12 points), while the written exam represents 60% (18 points).</p> <p>If the project receives a positive evaluation, the result remains valid for all three regular exam sessions within the academic year.</p>

	<p>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.</p> <p>Written exam answers will be evaluated based on their correctness and clarity.</p>
Required readings	<p>John Lewis and William Loftus, Java Software Solutions, Pearson, 2018. Kathy Sierra, Bert Bates, Trisha Gee, Head First Java, 3rd Edition. O'Reilly Media, Inc. Cay S. Horstmann, Brief Java: Early Objects. Wiley</p> <p>Subject Librarian: David Gebhardi, David.Gebhardi@unibz.it</p>
Supplementary readings	<p>The Java Tutorials: https://docs.oracle.com/javase/tutorial/</p>
Software used	<p>IntelliJ</p>