Fakultät für Informatik
Facoltà di Scienze e Tecnologie informatiche
Faculty of Computer Science

COURSE DESCRIPTION – ACADEMIC YEAR 2022/2023

Course title	**Introduction to Programming**
Course code	76401
Scientific sector	INF/01
Degree	Bachelor in Informatics and Management of Digital Business (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	Type of course: “di base” for L-31 Scientific area: “Formazione informatica di base” for L-31 The objective of the course is to teach the fundamental principles of programming. We will use an object-oriented approach and the student will learn how objects and classes can be programmed to "speak" and "cooperate" 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 an 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 translate a set of functional requirements into a graphical and interactive Java-based application.

Lecturer	Francesco Ricci http://www.inf.unibz.it/~ricci/CP
Contact	Office POS 2.17, Faculty of Computer Science, Piazza Domenicani 3, francesco.ricci@unibz.it, +39 0471 016971
Scientific sector of lecturer	INF/01
Teaching language	English
Office hours	By previous appointment
Lecturing Assistant (if any)	Michele Segata
Contact LA	Office POS 2.19, Faculty of Computer Science, Piazza Domenicani 3, michele.segata@unibz.it
Office hours LA	Monday 10:00-12:00 by previous appointment
List of topics	• Basic algorithms and data structures • Data types and expressions • Classes and objects • Conditionals and loops

	• Object-oriented design • Arrays and collections • Input/Output and exception handling • Inheritance and polymorphism • Recursion
Teaching format	Frontal lectures interleaved with exercises, labs with exercises and programming assignments, individual programming projects.

Learning outcomes	Knowledge and understanding: • D1.3 - Know the basic principles of programming. Applying knowledge and understanding: • 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. Communication skills • D4.5 - Ability to collaborate in interdisciplinary teams to achieve IT objectives. Learning skills • D5.1 - Learning ability to undertake further studies with a high degree of autonomy.

Assessment	Programming Project and a final exam (written). During the course, assignments will be given and evaluated. In the project and assignments parts of the exam we will assess the learning outcomes related to the application of the acquired knowledge, the ability to make judgments and the communication and learning skills. In fact, the goal of the project is to design a computer application that can effectively interact with a user. The project part must be positively evaluated to be allowed to attend the written exam. In the assignments, the students will reply to transfer of knowledge questions and programming exercises. In the written exam, there will be verification questions, transfer of knowledge questions and exercises. The learning outcome related to knowledge and understanding, applying knowledge and understanding and those related to the student ability to learn.
Assessment language	English
Assessment Typology	Monocratic
Evaluation criteria and criteria for awarding marks	Project counts for 40 % of mark (14 points), and the final exam (written) for 60 % of the mark (16 points). In case of a positive mark the project will count for all the three yearly regular exam sessions. Completing the home assignments will count as additional points bonus that are summed to the project points (max of the sum of project points and assignments is 14).

	Project is evaluated in term of quality of the solution: easy to use, meaningfulness of the implemented functions, quality of the code (according to the principles that will be illustrated during the lectures). Written exam questions will be evaluated in term of correctness and clarity.

Required readings	John Lewis and William Loftus, Java Software Solutions, Pearson, 2018. Subject Librarian: David Gebhardi, David.Gebhardi@unibz.it
Supplementary readings	The Java Tutorials: https://docs.oracle.com/javase/tutorial/
Software used	Java JDK, Eclipse IDE