

SYLLABUS COURSE DESCRIPTION

COURSE TITLE	Introduction to Programming
COURSE CODE	75002
SCIENTIFIC SECTOR	INF/01
DEGREE	Bachelor in Computer Science and Engineering
SEMESTER	1st Semester
YEAR	First year
CREDITS	8
TOTAL LECTURING HOURS	48
TOTAL LAB HOURS	24
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	<ul style="list-style-type: none"> • Type of course: area di base • Scientific area: "formazione informatica di base" for L-31 and "formazione matematica, informatica e statistica" for L-8 <p>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" to solve a problem. Students will learn how to solve 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 an integrated development environment, 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.</p>
LECTURER	Francesco Ricci
SCIENTIFIC SECTOR OF THE LECTURER	INF/01
TEACHING LANGUAGE	English

OFFICE HOURS	Office 2.17, fricci@unibz.it, 0471 016971
TEACHING ASSISTANT	TBH
OFFICE HOURS	Tuesday 14:00 – 17:00
LIST OF TOPICS COVERED	<ul style="list-style-type: none"> • Fundamentals of Computer Programming • Principles of Object Orientation • Algorithms and problem-solving • Basic programming constructs • Procedures and functions • Fundamental data structures (Stack, Queue, Lists, Vectors) • Recursion • Basics of Exception Handling
TEACHING FORMAT	Frontal lectures mixed with exercises, labs with exercises and programming assignments, individual programming projects.

LEARNING OUTCOMES	<ul style="list-style-type: none"> • Knowledge and understanding <ul style="list-style-type: none"> ○ know the fundamental principles of programming; ○ have a solid knowledge of the most important data structures and programming techniques. • Applying knowledge and understanding <ul style="list-style-type: none"> ○ be able to solve problems using programming; ○ be able to develop small and medium size programs using different programming languages and paradigms. • Ability to make judgments <ul style="list-style-type: none"> ○ be able to work autonomously according to the own level of knowledge. • Communication skills <ul style="list-style-type: none"> ○ be able to use modern communication systems. • Ability to learn <ul style="list-style-type: none"> ○ have developed learning capabilities to pursue further studies with a high degree of autonomy; ○ have acquired learning capabilities that enable them to carry out project activities in companies, public institutions or in distributed development communities.
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ASSESSMENT	<p>Project conducted individually and a final exam (written). During the course, assignments will be given and evaluated.</p> <p>In the project part 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 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.</p> <p>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</p>
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	those related to the student ability to learn.
ASSESSMENT LANGUAGE	English
EVALUATION CRITERIA AND CRITERIA FOR AWARDING MARKS	<p>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 3 regular exam sessions.</p> <p>Completing the home assignments will count as 2 points bonus that is summed to the project points (max of the sum of project points and assignments is 14).</p> <p>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).</p> <p><input type="checkbox"/> Written exam questions will be evaluated in term of correctness and clarity.</p>
REQUIRED READINGS	John Lewis and William Loftus, Java Software Solutions, Pearson, 2014.
SUPPLEMENTARY READINGS	-
SOFTWARE USED	Java JDK 8, Neatbeans