

Credits: 8

Code: Inf/01 Matter: Informatics Main language of instruction: Italian Other language of instruction: English

Teaching Staff

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Introduction

1. Objective of the course :

The aim of the course is to give students all the knowledge and skills that are essential to enter the world of computing. With reference to the requirements of the European Community, the course offers a literacy on computer knowledge, on the use of word processing programs, spreadsheets, presentation tools, computer networks and introduces the concept of algorithm that is at the base of the programming

Objectives

2. Course Structure:

The course is organized into eight subjects. The first three subjects are an introduction to the personal computer, in which are described all the basic information necessary for the functioning of a PC and are introduced the concepts of hardware (Von Neumann Model) and software (operational systems and applications). The sixth subject refers to internet, in particular the various technical terms in this area are explained and the various web applications (e-mail, FTP ...) are illustrated. Subjects five, six and seven concern the use of the main utility programs: word processor, spreadsheet and presentation. Subject eight is an introduction to the concept of algorithm and how it can be implemented using the flow chart.

The course provides basic skills for using computers and Internet. It starts with accessing the computer, describes how it is done and how information is organized, illustrates the use of word processing programs and finally describes the Internet and its use for searching for information with the Web and for communication by email, messaging and voice.



Competencies:

- To know how to describe the architecture of a PC according to Von Neumann model
- To know how to use the main commands of a GUI software
- To understand and know how to use word processing software
- To understand and know how to use spreadsheets
- To understand and know how to implement a presentation
- To acquire problem solving skills based on quantitative and qualitative information
- To be able to search for, interpret and convey information.
- To acquire the abilities to solve problems and make decisions using relevant information, applying the appropriate methods and placing the problem within the organisation as a whole.
- To be able to descriptively summarise information.
- To be able to work with academic papers.
- To acquire the ability to relate concepts and carry out analytical exercises and their synthesis.
- To acquire skills for independent learning.
- To be able to create arguments which are conducive to critical and self-critical thinking.
- To acquire the ability to put knowledge into practice.
- To be able to retrieve and manage information.

Syllabus

3. Programme of the course:

Subject 1. Key concepts of computer science

- Introductive concepts (lesson 1.1)
- Coding of numbers (lessons 1.2, 1.3, 1.4, 1.5)

Subject 2. The hardware of a computer

- General structure of a computer (lesson 2.1)
- Internal components of a computer (lesson 2.2)
- Input devices (lesson 2.3)
- Output devices (lesson 2.4)

Subject 3. The software

- Introduction to the concept of software (lesson 3.1)
- The desktop and the main features (lessons 3.2, 3.3, 3.4)

Subject 4. Internet

• Internet and web applications (lessons 4.1, 4.2)



- Network topology (lesson 4.3)
- Applications and services (lesson 4.4)

Subject 5. Word processor

- Introduction to the text document (lessons 5.1, 5.2)
- Format a table in the text document (lesson 5.3)
- Create a questionnaire in a text document (lesson 5.4)
- Insert graphics into a text document (lesson 5.5)
- Business letter (lesson 5.6)

Subject 6. The spreadsheet

- Introduction to the spreadsheet (lessons 6.1, 6.2, 6.3)
- Functions in the spreadsheet (lesson 6.4)
- Statistical functions (lesson 6.5)
- Use of graphs (lesson 6.6)
- The commercial invoice using a spreadsheet (lesson 6.7)

Subject 7. Presentations

- Introduction to presentations (lessons 7.1, 7.2)
- Insertion of graphic objects (lesson 7.3)
- Animations and transitions (lesson 7.4)
- Insertion of audio files and hyperlinks (lesson 7.5)

Subject 8. The algorithm

- Introduction to the algorithm (lessons 8.1, 8.2)
- Flow chart (lesson 8.3)
- Flow chart realization through AlgoBuild (lessons 8.4, 8.5)

Evaluation system and criteria

The exam consists in the performance of a test that tends to ensure the ability to analyse and rework the concepts acquired during the exercises and the various activities (Etivity) carried out during the course in the virtual classes.

The written test includes 2 open questions, the resolution of 2 exercises concerning the conversion of numbers and a multiple-choice questionnaire of 10 questions The open questions are evaluated from a minimum of 0 to a maximum of 6 points and require a re-elaboration of the concepts of theory addressed in the course. The exercises on the whole are evaluated by a minimum of 0 and a maximum of 6 points. In the questionnaire each correct answer is worth 1 point, each wrong answer minus 0.25, each answer not given 0 points. The expected learning outcomes about the knowledge of the subject and the ability to apply them are evaluated by the written test, while the communication skills, the ability to draw



conclusions and the ability to self-study are evaluated in progress through the Etivity.

Bibliography and resources

4. Materials to consult:

The teaching material present on the platform is subdivided into 8 subjects. They cover the whole program and each of them contains notes, slides and video lessons in which the teacher comments on the slides. This material contains all the elements necessary to deal with the study of matter.

5. Recommended bibliography:

Books:

- Tecnologie informatiche di Lorenzi e Govoni ATLAS Editions
- From Computer literacy to Informatics Fundamentals Springer Editions