**Italian code: INF/01 Credits: 8**

**Course: Planning of Transportation Systems**

**Main language of instruction:** Italian

**Other language of instruction:** English

**Head instructor**

**Professor Enzo PORCASI- enzo.porcasi@unicusano.it**

**Objectives**

The computer science course aims to provide students with a good understanding of the basic concepts for using a computer, as well as the fundamentals of basic office automation tools. The course offers students an overview of input devices (such as keyboard, mouse, etc.) and output devices (such as printers and monitors) in addition to describing the concepts of software (explaining the main types) and hardware. The course is designed to provide literacy in computer knowledge, the use of word processing programs, spreadsheets, presentation tools, and email. By the end of the course, students will have acquired the knowledge to choose the computer that best suits their needs, to use it, and to connect it to the main peripherals.

Through the completion of the activities associated with the course, students can develop the skills necessary to recognize and solve problems using specific software, thus also practicing its use.

**Course structure**

The computer science course has the following educational objectives:

1. Explain the evolution of modern computer science
2. Explain the internal architecture of a PC based on the Von Neumann model
3. Illustrate the computer in its hardware components
4. Illustrate the main types of software
5. Learn to use word processing software
6. Learn to use spreadsheets
7. Learn to create a presentation
8. Learn to use and modify the basic settings of an operating system
9. Understand the basic concepts of email service, and be able to send, receive, and manage messages
10. Learn the basic concepts and usage of the Internet and the Web service

**Competencies**

**Knowledge and Understanding**

By the end of the course, the student will have demonstrated knowledge of the basics of computer science history, the difference between software and hardware, and the characteristics of a computer. The student will understand the difference between various application software related to Office Automation and will learn their basic features and functions.

**Application of Knowledge**

The student will be able to use different applications to create text documents, spreadsheets, and presentations, as well as to use email. Additionally, the student will be able to work independently with a personal computer, performing basic configuration and file management operations.

**Ability to Draw Conclusions**

The student will be able to identify the most appropriate application software for each task to be performed and will be able to evaluate which types of interfaces to use to connect different devices to a computer.

**Communication Skills**

The student will be able to describe and engage in conversations about the history of computer science, the different types of computers, and their components. The student will have acquired the skills to use the correct tools that can support a presentation.

**Learning Ability**

By the end of the course, the student will have the basic knowledge to deepen the use of the main Office Automation tools. They will be able to learn advanced functionalities.

**Syllabus**

* Introduction to the history of computer science
* Introduction to hardware of personal computer
  + CPU
  + How a PC is made
    - case
    - Input Devise
    - Output Devise
* Introduction di Software concepts
  + Type of software
    - System software
    - Application software
  + Type of Licenses
    - Commercial
    - Open Source
    - Shareware
* Introduction to Operating System
  + Basic concepts
  + Common features
  + How to use it
* Introduction to Word Processor (MS Word or other)
* Introduction to Spreadsheet (MS Excell or other)
* Introduction to Presentation Software (MS PowerPoint or other)
* Introduction to E-Mail Service
* Introduction to Internet and Internet Service
* Cybersecurity awarness

**Evaluation system and criteria**

For this computer science course, the exam could include a combination of theoretical and practical components to assess your understanding and application of the material covered. Here are some possible types of exams you might encounter:

1. **Written Exam**: This could include multiple-choice questions, short answer questions, and essay questions to test your knowledge of the history of computer science, the difference between software and hardware, and the various types of software and licenses.
2. **Practical Exam**: You might be asked to perform tasks on a computer, such as creating and formatting a document in MS Word, developing a spreadsheet with formulas and charts in Excel, or creating a presentation using presentation tools. This would assess your ability to apply what you've learned in a real-world context.
3. **Project Submission**: You could be required to submit a project that demonstrates your ability to use different software applications. This might include creating a complex document, a detailed spreadsheet, or a comprehensive presentation.
4. **Oral Exam**: An oral exam could involve discussing the topics covered in the course, such as the internal architecture of a computer, the main types of software, and the basic concepts of email and internet services. This would test your ability to communicate your understanding effectively.
5. **Etivities**: As mentioned in the course contents, there are several etivities (e.g., formatting a document, creating a complex document with charts or pivot tables) that you might need to complete and submit as part of your assessment.

**Bibliography and resources**

1. *Materials to consult*

Notes written by the instructor are available in Italian, but professor can share others resources English.

1. *Recommended bibliography*

Suggested readings are:

<http://mnl.mclinc.org/computer-lab/classes/resources/>

any other book of ICDL syllabus 6 is ok