

Teacher name	Vito Nicola Convertini
Degree Course	EC
Teaching	Computer science
Academic year	2024-2025
Period of development	First semester
University credits (CFU)	3
Academic discipline	INF/01
Teacher web page	

Pre-requisites

NOBODY.

Target skills and knowledge (Objectives)

The course aims to provide a general epistemological approach to computer science and the minimum set of knowledge and skills that every student of statistical sciences should possess to actively participate in digital transformation within organizations.

Detailed program

1. Computer structure

The concept of virtual machine. Hardware and Software. General scheme of a data processing system. Types of computers. Computer memories.

2. Operating systems

Features of operating systems. The Onion Skin model. The Windows operating system. The Linux operating system.

3. Computer networks

Communication between computers. How transmission takes place. Protocols and interfaces. Local networks. The means of transmission. The types of networks. Network technologies. Client-server and peer-to-peer architectures. Geographical networks. Analog connectivity. Digital connectivity. Internet services.

4. Computer security, encryption and digital signature

Security concepts, data threats, information value, personal security, file security. Malware, types and methods, protection and removal. Access control, password management, secure data management. Cryptography, symmetric and asymmetric cryptography. Digital signature

Bibliographic References and Teaching Materials

- Lecture notes issued by the teacher

Organization of teaching

- Internal lesson cycles: Yes
- Supplementary courses: Yes
- Tutorials: Yes
- Seminars: Yes
- Lab Activity: Yes
- Project work: No
- Study Visits: No

Modality of delivery of training activities

Lessons frontal exercises, exercises practices, seminar activities with external professionals.

Assessment methods

There will be an oral test to assess the knowledge acquired at the end of the course.

- The results will be communicated via a notice on Microsoft Teams or other platform made available by the Department. The notice will contain:
 - Date of the exam session
 - or Freshman