Introduction to Computer Science and Programming

Course Outline
Academic Semester: 2025/26

1. General

School	**School of Finance and Statistics**		
Academic Unit	**Department of Banking and Financial Management**		
Level of Studies	**Undergraduate**		
Course Code	**ΧΡΠΛΗ01-1**		
Semester	**3rd**		
Course Title	**Introduction to Computer Science and Programming**		
Idependent Teaching Activities		Weekly Teaching Hours	Credits
Lectures + Laboratory exercises		**6 (4+2)**	**7,5**
Course Type	**Special background**		
Prerequite Courses			
Language of Instruction and Examinations	**Greek and English**		
Is the course offered to Erasmus Students?	**Yes**		
Url (Eclass)	**https://eclass.unipi.gr/courses/XTD211/**		

2. Learning Outcomes

Learning Outcomes

Upon successful completion of the course, the student

- will know the basic operating principles of computers
- will have a first contact with MS Word, the MS Excel and MS PowerPoint.
- will know the basic numeral systems (decimal, binary, octal, hexadecimal), and how to convert the representation of numbers from one system to another.
- will know the basic principles of programming in the C language,
- will have a first contact with the R language (installation method, operating environments).

General Competences

Within the framework of the combined skills that the graduate will acquire by attending all the courses of the study program, this course aims at the graduate to acquire abilities:

- in using computers and applications, as well as computer programming
- in working independently
- to promote free, creative and inductive thinking
- in working in an international environment
- in the search for, analysis and synthesis of data and information, with the use of the necessary technology
- in adapting to new situations

3. Syllabus

1. Introduction
    - Hardware-Software

- Internet
- Computer memory
- BIOS

2. Operating systems
    - Introduction to interacting with commands (MS-Dos commands).
3. Introduction to MS Word, Excel and PowerPoint.
4. Numeral Systems
    - The binary, octal and hexadecimal numeral systems
    - Conversions to different numeral systems
5. Principles of programming in C Language
    - Program structure
    - Types and variable declarations
    - Declarations of constants
    - Commands to display and insert data
    - Control commands
    - loop commands
    - Arrays and Pointers
    - Strings
    - Functions
    - Accessing files in C
6. Introducing the R language
    - An introduction to the R language, the RStudio interface, and their installation process.

4. Teaching and Learning Methods - Evaluation

Delivery	**Face-to-face**
Use of Information and Communications Technology	• **Powerpoint presentations.** • **Presentations of the C environment using projector, generating and saving code, the process of converting it to an executable file, and the results of its execution.** • **Use of the Laboratory Computers by the students for applications on the course material.** • **Introducing R and RStudio.** • **Support through the e-class online platform.**

Teaching Methods	**Activity**	**Semester Workload**
	Lectures	52
	Laboratory Education	26
	Independent Study	109,5
	Σύνολο Μαθήματος	**187,5**

Student Performance Evaluation	Formative and conclusive evaluation is carried out. The final evaluation of the students is done by a written exam or an oral exam. The exam includes multiple choice questionnaires and short-answer questions. Moreover, the students are evaluated on computer programming at the lab, and on a take-home assignment.

5. Attached Bibliography

Suggested Bibliography

1. Computers and Applications (in Greek). N. Kourogenis and S. Chrysikopoulos. (Varvarigou eds)
2. Notes and code (programs) of the Tutor (accessed through e-class)

Related Academic Journals