UNICUSANO
ROME

Code: INF/01 **Credits: 6**
Matter: Computing for Engineers
Main language of instruction: Italian
Other language of instruction: English

Teaching Staff

Head instructor
Prof. Carlo Drago - carlo.drago@unicusano.it

Introduction

1. *Objective of the course :*

The main objective of the course is to provide an introduction to the structure of computers. The main applications used in the engineering and programming fields. In particular the course will introduce the typical methodologies useful for the construction of databases and the techniques of programming in real applications. Among the languages considered and used during the course there will be Octave and R both widely used in the engineering field. Lessons will be based on the following topics more theoretical and practical cases involving the direct use of the computer on real problems. The main feature of the course and of learning is the need for the student to write a work\application on real or simulated data and a document describing the objectives of the work applied, the data used, the computational methodologies used and finally the results obtained. The emphasis, in this case, is on the application of the concepts learned during the course dropped into a context immediately reusable in professional engineering contexts. It is necessary from the beginning to agree with the teacher on the theme of the application work (through the individual e-activities) to be carried out and subsequently further define one or more objectives that will then become the basis of the work for the remaining part of the session.

Objectives

2. *Course Structure:*

The course is organized in these parts:

1) Excel and VBA programming

2) Access

3) Octave

4) R

To influence the rigor of learning the course contains a practical part consisting of the application of the concept learned over the course by the writing a short dissertation based on a theme and data agreed with the instructor. The applied work will be discussed in class **which requires a previous work by the students**.

Competencies:

- Knowledge and understanding skills in Computing with engineering applications.
- Ability to apply statistical knowledge and understanding to real cases and real problems
- Ability to draw conclusions
- Communication skills
- Ability to learn

3. Programme of the course:

Subject 1. Excel and VBA programming
Subject 2. Access
Subject 3. Octave
Subject 4. R

Evaluation system and criteria

The assessments of course is based on the following criteria:

I) **Final exam** (**100%** of grade):

This exam will have two parts:

1) A theoretical part based on Computing for engineers

2) An applied part with question\questions on the short dissertation which need to be sent to the instructor before the final examination.

Bibliography and resources

4. *Materials to consult:*

Lecture Notes and academic educational material of the course, books, other materials useful to learning agreed with the instructor.

5. *Recommended bibliography:*

The official guides for the computational environments studied during the course.