

**Statistical Computer Tools**

Code: 103198  
ECTS Credits: 6

Degree	Type	Year	Semester
2501919 Applied Statistics	FB	1	1

**Contact**

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**Use of languages**

Principal working language: catalan (cat)  
Some groups entirely in English: No  
Some groups entirely in Catalan: Yes  
Some groups entirely in Spanish: No

**Teachers**

Gregori Guasp Balaguer  
Albert Ruíz Cirera  
Sundus Zafar

**Prerequisites**

No prerequisites.

**Objectives and Contextualisation**

The main goals of the course are the following.

To acquire familiarity with a Computer Algebra System. Such a system will become an everyday tool in all other courses.

To learn to build and write scientific texts using the LaTeX program.

To acquire familiarity with the concept of statistical package. In particular, create and transform databases and get used to workspaces both graphically and through the command line.

To learn to use an operating system through the command line, exploiting the power of present day computers to blend, split or extract data from files or sets of files.

To be introduced in formalization of algorithms through a programming language.

**Content**

1. Introduction to computer science: History of computer science and the Internet. Use of the computer facilities in the UAB.
2. LaTeX document preparation system: How to use the software. Types of files: TeX, pdf. Structure of a LaTeX file.

3. Statistical packages: Workspaces. Declaring variables. Creating, obtaining and managing databases. Descriptive tools. Graphic environment.
4. Computer Algebra System: Numerical and algebraic computations. Graphs of functions. Solving equations. Defining functions. Lists, sets and sequences. Logic tests, loops and procedures.
5. Operating system: Graphic environment. The console. First commands and help system. Managing files. Managing data: regular expressions, grep and awk.
6. Programming: introduction to python.