COURSE SYLLABUS

Inferential Stastics

2122-1-F5602M002-F5602M003M

Learning objectives

The module aims at providing adequate knowledge of some of the main inferential techniques for data analysis, with a focus on the estimation of unknown parameters and hypothesis testing.

Students will be able to identify suitable techniques for the type of data and for the inferential problem addressed. Students will develop a critical approach to the interpretation of analyses produced by others, with specific attention to the assessment of the validity of the assumptions made. Students will be able to select the correct way of presenting data analyses to a non-technical audience. Finally, students will develop autonomous instruments to understand more advanced statistical techniques which might go beyond those studied during the course.

Contents

Detailed program

Prerequisites

Basic statistics; Descriptive statistics; Basic probability theory; Probability distributions.

Teaching methods

Frontal lectures (theory and examples).

Assessment methods

During the weeks of the course, problem sheets will be proposed, with exercises that can be solved by groups of students (up to 4 students per group). The submitted solutions will be marked and, in case of positive assessment for the three sheets, the overall mark can contribute, jointly with the result of the written exam, to determine the final mark. More details on this possibility will be given during the classes.

Textbooks and Reading Materials

The textbook is:

Evans, M.J., Rosenthal, J.S., *Probability and statistics. The science of uncertainty. (second edition).* Ed. Freeman, 2010.

Further materials will be provided through the e-learning website. Reference to the textbook is crucial to attend the course and for the assignments.

Semester

Second cycle of first semester

Teaching language

English