

## Regression in High Dimension

Academic Year: ( 2023 / 2024 )

Review date: 24-04-2023

Department assigned to the subject: Statistics Department

Coordinating teacher: NOGALES MARTIN, FRANCISCO JAVIER

Type: Electives ECTS Credits : 6.0

Year : 6 Semester :

## REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Basic knowledge of mathematics and statistics

## OBJECTIVES

Become familiar with different analytical tools, based on data, to make business decisions

Capacity to develop skills to analyze and find relationships between many variables/features

Relax some of the assumptions in classical linear regression

Deal with the curse of dimensionality in high-dimensional problems

Acquire knowledge about the main tools in advanced predictive tools and handle the R language with those models

## DESCRIPTION OF CONTENTS: PROGRAMME

1. Efficient estimation for least-squares
2. Extending Linear Models
3. Statistical-Learning Tools
4. Machine-Learning Tools

## LEARNING ACTIVITIES AND METHODOLOGY

Theory (3 ECTS), Practice (3 ECTS).

50% lectures with teaching materials available on the Web. The other 50% practical sessions (computer labs).

## ASSESSMENT SYSTEM

The assessment will be made by weighting the continuous evaluation (50%) and the final exam (50%), with a minimum grade of 5 points over 10 in each assessment activity (both the continuous ev. and the final exam).

**% end-of-term-examination:** 50

**% of continuous assessment (assignments, laboratory, practicals...):** 50