

Regression in High Dimension

Academic Year: (2024 / 2025)

Review date: 02-04-2024

Department assigned to the subject: Statistics Department

Coordinating teacher: NOGALES MARTIN, FRANCISCO JAVIER

Type: Electives ECTS Credits : 6.0

Year : 4 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

% end-of-term-examination:	50
% of continuous assessment (assignments, laboratory, practicals...):	50

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).