

Academic Year: ( 2024 / 2025 )

Review date: 02-04-2024

Department assigned to the subject: Statistics Department

Coordinating teacher: NOGALES MARTIN, FRANCISCO JAVIER

Type: Compulsory ECTS Credits : 6.0

Year : 3 Semester : 1

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

Basic knowledge of mathematics and statistics

## OBJECTIVES

1. Know how to model and implement optimization methods and simulation techniques in decision-making problems in business.
2. Learn about the conditions to be satisfied by solutions of optimization problems.
3. Learn to use tools of modern optimization and simulation techniques in an efficient way.

## DESCRIPTION OF CONTENTS: PROGRAMME

1. Introduction: process modeling in decision-making problems
2. Linear Models: modeling, applications, Simplex method
3. Discrete Models: applications, binary variables, logic constraints, algorithms
4. Non-linear Models: applications, optimality conditions, algorithms for machine learning
5. Case Studies

## 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

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