

Academic Year: (2021 / 2022)

Review date: 12-01-2022

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: MUÑOZ ABELLA, MARIA BELEN

Type: Electives ECTS Credits : 3.0

Year : 1 Semester : 2

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

It is recommended to be engineer in industrial and production field

OBJECTIVES**COMPETENCES**

- Knowledge on local and global optimization methods.
- Knowledge on parametric and nonparametric techniques for predicting.

LEARNING RESULTS

- Ability to identify and resolve real problems.

DESCRIPTION OF CONTENTS: PROGRAMME

1. Introduction to optimization in mechanical engineering
2. Local optimization methods
3. Global optimization methods. Genetic Algorithms
4. Neural Networks

LEARNING ACTIVITIES AND METHODOLOGY

- Theory session
- Theory sessions: to solve exercises and cases
- Practical cases and exercises
- Final exam

ASSESSMENT SYSTEM

40% of the final grade will be achieved by a final examination for assessing the knowledge acquired.
The remaining 60% is obtained with three homework assignments.

In the extraordinary call we follow the general UC3M exams normative

% end-of-term-examination:	40
% of continuous assessment (assignments, laboratory, practicals...):	60

BASIC BIBLIOGRAPHY

- Arora Introduction to optimum design, Elsevier.
- Goldberg, D. Genetic algorithms in search, optimization and machine learning, Addison-Wesley.
- Haykin, S. Neural Networks. A comprehensive foundation, Prentice Hall.