

Academic Year: (2020 / 2021)

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Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: GARCIA GUTIERREZ, ISABEL

Type: Compulsory ECTS Credits : 6.0

Year : 3 Semester : 2

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

First and second year courses.

OBJECTIVES

- Knowledge and capability for system modeling and simulation.
- Capability for the analysis, design, simulation and optimization of processes and products.
- Practical knowledge of production systems and processes. Quality control.

DESCRIPTION OF CONTENTS: PROGRAMME

- Linear programming models for productive and logistic system optimization.
- Models for the design and redesign of products and processes.
- Integer linear programming models: models for the location and design of industrial plants, resources planning, production programming...
- Quantitative analysis and optimization. Solving techniques for linear models.
- Results analysis and economic interpretation.
- Simulation of production systems. Introduction.
- Simulation model structuring.
- Quantitative analysis in simulation. Simulation result analysis and economic interpretation.
- Use of simulation for improvement and quality control for productive systems.

LEARNING ACTIVITIES AND METHODOLOGY

Lectures, exercises, practical sessions, cases and assignments to be carried out by the students and discussed during the sessions, autonomous student work, individual and group tutoring. Practical sessions in the laboratory. Participation in the partial and final evaluation sessions.

ASSESSMENT SYSTEM

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

Continuous evaluation will be based on partial exams, group projects and practical sessions.

Minimum grade required in the final exam: 4

BASIC BIBLIOGRAPHY

- Frederick S. Hillier, Mark S. Hillier y Gerald J. Lieberman Métodos cuantitativos para la administración, McGraw-Hill, 2000
- TAHA, HAMDY A. "Investigación de operaciones: una introducción"., Prentice Hall., 1998

- Theory presentation and problems. Distributed through Aula Global., Área de Ingeniería de Organización, .

ADDITIONAL BIBLIOGRAPHY

- Law, A. and Kelton W.D. Simulation Modeling and Analysis, McGraw-Hill. USA. 3rd edition., 2000.