

60849 - Information Systems in Industrial Organizations

Syllabus Information

Academic year: 2024/25

Subject: 60849 - Information Systems in Industrial Organizations

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 532 - Master's in Industrial Engineering

ECTS: 6.0

Year: 2

Semester: Second semester

Subject type: Optional

Module:

1. General information

Information systems in companies are presented as a stack where the lowest level consists of data hosting and software applications. Above this hardware base, the concepts and elements of a general nature that describe information systems are presented in a synthetic way. Finally, the different areas that make up a typical business organization and the different specific information systems that can support them, as well as their interrelationships, are addressed.

2. Learning results

- To understand the technical requirements of a Data Processing Centre (DPC), its organization, the importance of providing quality services and the concept of business continuity.
- To understand the components of the process, secondary and tertiary storage of a Data Processing Centre, its structure, scaling and management.
- To understand the importance of information management in an organization, to be able to identify the information systems involved and compare them with those of other organizations.
- To recognize the information technology needs of an organization, to identify which technology is most suitable for each case.
- To analyse and evaluate the impact of computerization in an organization at all levels (technological, organizational, ethical, etc.).

3. Syllabus

The planned program includes the following blocks:

- Computer architecture and networks.
- General purpose information systems:
 - Basic concepts: data, information, processes, information systems
 - Types of information systems and evolution throughout history.
 - The Web and its evolution
 - Introduction to databases and database management systems
- Business information systems.

4. Academic activities

- Participative master class (30 hours) and problem sessions (4 hours): Different concepts related to the topics to be covered will be introduced and students will be asked to participate and discuss the technical, ethical and moral aspects involved.
- Laboratory practicals and directed work (26 hours): we will work on different technologies and examples of information systems in production.
- Study and personal work (85 hours).

5. Assessment system

The evaluation of the subject is continuous and is based on two tests:

- P1. Written tests (exam) in which the student will have to answer questions and solve exercises and problems about data centres. Short exercises will also be proposed in class for their correction and assessment. The evaluation of P1 will be $0.60 \times \text{exams} + 0.40 \times \text{exercises}$.
- P2. A set of tasks and laboratory tests on information systems. Each student must submit the assignments indicated in the subject's practices.

To pass the course, a minimum grade of 4.0 points is required in both P1 and P2. If this minimum grade is not achieved in either of the two tests, the final course grade in continuous assessment will be the lower of the two.

If the minimum grade of 4.0 points is achieved in both components, the weight of P1 and P2 in the final course grade in continuous assessment will be $0,30 \times P1 + 0,70 \times P2$.

There will be a global assessment test for the ordinary call for students who do not pass the subject by the methods indicated above. In said test, the students will have to present the required assignments in P2 and take an exam on each of the parts.

The extraordinary call will be carried out through a global evaluation test.

6. Sustainable Development Goals

8 - Decent Work and Economic Growth

9 - Industry, Innovation and Infrastructure