

30175 - IT Systems for Management

Syllabus Information

Academic Year: 2019/20

Subject: 30175 - IT Systems for Management

Faculty / School: 179 - Centro Universitario de la Defensa - Zaragoza

Degree: 563 - Bachelor's Degree in Industrial Organisational Engineering

ECTS: 4.5

Year: 3

Semester: Second semester

Subject Type: Compulsory

Module: ---

1.General information

1.1.Aims of the course

This course establishes a solid base for understanding the basic vocabulary used by professionals who design, develop, use and maintain Information Systems in organisations. The main objective is that students become familiar with the methodologies and technologies currently used for the construction and management of Information Systems.

Likewise, the aptitudes and attitudes of the students are strengthened so that they are able to work and learn autonomously, integrate knowledge, manage information, develop their critical spirit so that they can analyse and solve the problems that arise related to information management through computer applications.

1.2.Context and importance of this course in the degree

IT Systems for Management (ITSM) is a subject given in the third year of the degree. The Fundamentals of Computer Science subject, taken by the students in the previous courses, is prerequisite for ITSM. This temporary location allows students to apply the knowledge acquired in this subject and the use of computer tools for information management, in other subjects of the degree.

In this subject, students are expected to develop several information management skills that will be very useful in the management of an organization. It is essential to use Information and communications technology (ICT) to achieve it.

1.3.Recommendations to take this course

The student should know the main components of a computer and its basic functionalities, be able to search for information and have acquired ease in the analysis of problems and in the design of algorithmic solutions to such problems.

2.Learning goals

2.1.Competences

Upon passing the subject, the student will improve the following competences:

1. Ability to manage information; skills to handle and apply technical specifications and the necessary legislation to practise engineering (C10).
2. Ability to apply Information and Communication Technologies (ICTs) within the field of engineering (C5).
3. Knowledge and skills to set up and manage information systems in organisations (C30).

2.2.Learning goals

To pass this subject, the student should demonstrate that:

1. Identifies the Information Systems of an organization/company as a key element for its day-to-day functioning.

2. Identifies Information Systems as a key element for growth, improvement of competitiveness, and creation of new business formulas and/or products.
3. Knows the basic concepts that make up the information systems (data vs information, knowledge, communications, ...) and the technological environment that supports them today.
4. Knows the basic parameters and the typical phases that are associated with the development and implementation of an Information System in the organization.
5. Knows the usual problems linked to these processes (communication problems, interference in the normal development of the business, maintenance, etc.).
6. Knows about success cases of the use of Information Systems and the improvements obtained. These success stories serve as a basic example.

2.3.Importance of learning goals

Today there is a great demand for systems that facilitate the processing of data to obtain information from them and to make timely decisions within the organizations. Therefore, a solid base in the fundamental aspects of the different types of existing information systems is essential to be able to get on well in the professional world and to be able to develop information systems that address future challenges.

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

The student must demonstrate that s/he has achieved the expected learning goals through the following assessment activities:

1. **Collaborative Project (40%).** Projects related to the subject syllabus will be proposed, which should be carried out in groups. The students will have to understand the requirements of the project, evaluate possible solution alternatives, analysing advantages and disadvantages. The project carried out by each group must be delivered on the dates established by the faculty of the subject. In the evaluation of the projects carried out, the analysis and the degree of justification of the obtained conclusions will be considered.
2. **Written exam (60%).** In this exam questions and/or problems related to the subject syllabus will be raised. Its typology and complexity will be similar to those of the classroom and laboratory sessions. The quality and clarity of the answers will be assessed, as well as the resolution strategies proposed by the students. The minimum grade required in the written exam to pass the subject is 5 points out of 10.

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The subject is characterized by both theoretical and practical sessions. Concerning the theoretical sessions, the learning process consists in the participation in the lectures and in the individual study. Supervised active learning and autonomous learning are instead applied in practical sessions through, respectively, the collaborative resolution of case studies/problems in the laboratory and the development of a project in groups.

4.2.Learning tasks

The program offered to the student to help him/her achieving the expected results includes the following activities:

- Presentation of the subject contents in the class by the professors.
- Resolution of problems/analysis of case studies, individually or in groups.
- Development of a project in groups, supervised by the professors
- Individual study of the subject by the students.
- Individual tutoring with the aim of revising and discussing the material and topics presented in class.

In particular, the resolution of problems/analysis of case studies will be carried out in the computer science laboratories by applying brainstorming techniques and using specific software tool as a support.

The project will be developed in groups (2-5 students), where the students will apply the methods explained in class and use the software tools seen in the laboratory.

4.3.Syllabus

The program is structured in three main parts: the first one is an introduction to information systems and to the disciplines that provide the guidelines for their development (topics 1 and 2). The second part focuses on the modelling activities that are carried out during the early phases of the development of an information system (topics 3,4,5 and 6). Finally, the third

part is focused on the use of information systems and decision support tools (topic 7):

1. Introduction to information systems
2. Software engineering
3. Unified Modeling Language (UML)
4. Development of an information system: requirements definition and analysis
5. Introduction to databases
6. Development of a database: analysis and design
7. Use of information systems: decision support tools

The program will be available through the Moodle e-learning platform: <https://moodle2.unizar.es>

4.4.Course planning and calendar

The timetable of the subject will be defined by the center in the academic timetable of the corresponding course. All the sessions are in-class.

Information about the timetable of in-class sessions can be found through the website of the Centro Universitario de la Defensa: <http://cud.unizar.es>.

The following table shows an approximate distribution of the work of the student for this subject (in hours) during the semester:

| | |
|----------------------------------|------------------------|
| <i>In-class hours</i> | <i>45 hours</i> |
| Theoretical sessions | 15 hours |
| Practical sessions | 26 hours |
| Final assessment | 4 hours |
| <i>Out-of-class hours</i> | <i>67 hours</i> |
| Individual work | 37 hours |
| Teamwork | 30 hours |

Concerning the project to be developed in groups, the professors present the project during the first weeks of class together with the planning of the delivery during the semester.

The dates of the final assessment will be officially published on the website of the Centro Universitario de la Defensa: <http://cud.unizar.es>.

The activities of the subject can be consulted in the section Learning tasks.

4.5.Bibliography and recommended resources

http://biblos.unizar.es/br/br_citas.php?codigo=30175&year=2019