Universidad Zaragoza

**Academic Year/course: 2021/22**

# 30128 - IT Systems for Management

## Syllabus Information

**Academic Year:** 2021/22
**Subject:** 30128 - IT Systems for Management
**Faculty / School:** 175 - Escuela Universitaria Politécnica de La Almunia
**Degree:** 425 - Bachelor's Degree in Industrial Organisational Engineering
**ECTS:** 6.0
**Year:** 3
**Semester:** Second semester
**Subject Type:** Compulsory
**Module:**

# 1. General information

## 1.1. Aims of the course

The subject and its expected results respond to the following approaches and objectives:

- This course sets up a solid base for the understanding of the basic vocabulary used by professionals who design, develop, use and maintain Information Systems in organizations. 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 students are reinforced so they are able to work and learn autonomously, integrate knowledge, manage information, develop their critical thinking so that they can analyze and solve the problems that arise, related to information management using computer applications.

*These approaches and objectives are in line with the following Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda (https://www.un.org/sustainabledevelopment/es/), in such a way that the acquisition of the course learning outcomes provides training and competence to contribute to their achievement to some degree.*

- **Goal 4**: Quality education
- **Goal 5**: Achieve gender equality and empower all women and girls
- **Goal 8**: Promote inclusive and sustainable economic growth, employment and decent work for all

and, specifically, with the goals:

- **4.4** By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
- **5.b** Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women
- **8.2** Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors

## 1.2. Context and importance of this course in the degree

Information Systems for Management (ISD) is a course offered in the third year of the degree. The course on Computer Science Basics, taken by the students in previous courses, is preparatory to ISD. This time location allows students to apply the knowledge acquired in this course, and particularly, use computer tools for information management, in other courses of the degree.

In this course, students are expected to develop a series of information management skills that will be very useful in the management of a company / organization. The use of ICTs is essential for that purpose.

## 1.3. Recommendations to take this course

Students must learn about the main components of a computer and its basic functioning, be able to search for information and skilled 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 be more competent to ...

1. Manage the information, manage and apply the technical specifications and the necessary legislation for the practice of Engineering (C10).
2. Apply information and communication technologies in Engineering (C5).
3. Implement and manage Information Systems in organizations (C30).

## 2.2. Learning goals

The student, to pass this subject, must show the following results ...

1. Identify the Information Systems of an organization / company as a key element for its day-to-day performance.
2. Identify Information Systems as a key element for the growth, competitiveness improvement, and setting-up of new business formulae and / or products.
3. Know the basic concepts that make up information systems (data vs. information, knowledge, communications ...) and the technological environment that supports them today.
4. Know the basic parameters and the typical phases that are associated with the development and implementation of an Information System in the organization.
5. Know the usual problems linked to these processes (communication problems, interference in normal business development, maintenance, etc.).
6. Know successful cases of the use of Information Systems and the improvements obtained. These successful cases are used as a basic example.

## 2.3. Importance of learning goals

Today there is a great demand for systems that make the processing of data easy to obtain information from them and to make appropriate decisions within the scope of an organization. Therefore, a solid basis in the fundamental aspects of the different types of existing information systems is essential to be able to cope with the professional world and 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 show that he has achieved the expected learning outcomes through the following assessment activities:

Evaluation activities in the continuous assessment mode:

The following activities are carried out, on a compulsory basis:

1. Written tests and active participation (30%). Individual. It will consist of one or more tests and active participation in the different activities suggested in the virtual classroom.
2. Information System Implementation Project (70%). Teamwork. Development of a small original project along with its corresponding report, whose topic will be related to the contents of the subject. The maximum number of equipment components will be indicated at the beginning of the semester. Two deliveries will be planned during the production process, with the objective of carrying out training assessment and evaluating continuous work. The first delivery will consist of the initial analysis and information modeling of the company in which an Information System will be implemented. The second delivery has to do with the final implementation project.

In the continuous assessment mode 80% of assistance is required in the classroom activities of the subject.

Assessment activities in the global assessment mode:

1. Academic work (40%). Individual or teamwork. Development of a small original project along with its corresponding report, whose topic will be related to the contents of the subject, whose content shows the project of Implementation of an Information System in a company.
2. Open question final written test (60%). Individual. It will consist of the timed written test, with one or more questions,

in which the student builds up his own answer. The right to consult support material may or may not be granted. This test will include one or more questions about the academic work done in the previous point.

The following table shows a summary of the evaluation:

| | **Evaluación Continua** | **Evaluación Global** |
|---|---|---|
| Written tests and active participation | 30% | 0% |
| Implementation Project | 70% | 40% |
| Final Written Test | 0% | 60% |

Success in the subject will be based on the sum of the scores obtained in the different activities carried out, each one contributing with a minimum of 50%, that is, all the tests must be passed on an individual basis.

For those students who have failed the continuous assessment system, but some activities have been carried out successfully, these will be valid for the global assessment test.

The activities which have been carried out successfully in the global assessment test will be valid for the next official call, within the same academic year.

The grading of the assessment activities will be between 0 and 10 points. The evaluation criteria will be explained in the corresponding statements, or prior to their completion.

The assessment of non-classroom students (those who, due to their personal or professional situation, do not attend classes, although they do participate in moodle and take the different assessment tests), will be ruled by the same procedures, assessment criteria and demand levels as classroom students. In any case, it will be the student himself who makes the decision to choose between continuous and global assessment.

The dates of the global assessment exams will be those officially published on the EUPLA-Web.

# 4. Methodology, learning tasks, syllabus and resources

## 4.1. Methodological overview

### The learning process designed for this subject is based on the following:

Strong interaction between the teacher/student. This interaction is brought into being through a division of work and responsibilities between the students and the teacher. Nevertheless, it must be taken into account that, to a certain degree, students can set their learning pace based on their own needs and availability, following the guidelines set by the teacher.

The current subject (Information systems management) is conceived as a stand-alone combination of contents, yet organized into three fundamental and complementary forms, which are: the theoretical concepts of each teaching unit, the solving of problems or the resolution of questions and laboratory work, at the same time supported by other activities

The organization of teaching will be carried out using the following steps:

**- Lectures**: Theoretical activities carried out mainly through exposition by the teacher, where the theoretical supports of the subject are displayed, highlighting the fundamental, structuring them into topics and or sections, interrelating them.

**- Practice Sessions**: The teacher resolves practical problems or cases for demonstrative purposes. This type of teaching complements the theory shown in the lectures with practical aspects.

**- Individual Tutorials**: Those carried out giving individual, personalized attention with a teacher from the department. Said tutorials may be in person or online.

***If classroom teaching were not possible due to health reasons, it would be carried out on-line***.

## 4.2. Learning tasks

The course includes the following learning tasks:

Involves the active participation of the student, in a way that the results achieved in the learning process are developed, not taking away from those already set out, the activities are the following:

* **Face-to-face generic activities**:

- **Lectures**: The theoretical concepts of the subject are explained and illustrative examples are developed as a support to the theory when necessary.

- **Practice Sessions**: Problems and practical cases are carried out, complementary to the theoretical concepts studied.

* **Generic non-class activities**:

- Study and understanding of the theory taught in the lectures.
- Understanding and assimilation of the problems and practical cases solved in the practical classes.
- Preparation of seminars, solutions to proposed problems, etc.
- Preparation of the written tests for continuous assessment and final exams.

## 4.3. Syllabus

The course will address the following topics:

- Introduction to Enterprise Information Systems.
- Capture and representation of information. UML modeling.
- Data management and information systems.
- Information systems for the relation with the environment of the organization.
- Basic concepts of making up information systems and the technological environment they are currently supported by.
- Implementation and maintenance of information systems.
- Success cases of implementation and use of information systems.

Practical contents

- The initial study of the implementation of an Enterprise Information System.
- Implementation design of an Enterprise Information Systems.

## 4.4. Course planning and calendar

### The timetable of sessions and presentation of the works

The subject has 6 ECTS credits, which represents 150 hours of student work in the subject during the trimester, in other words, 10 hours per week for 15 weeks of class.

A summary of a weekly timetable guide can be seen in the following table. These figures are obtained from the subject file in the Accreditation Report of the degree, taking into account the level of experimentation considered for the said subject is moderate.

**Activity** _____ **Weekly school hours**

Lectures _____ 4

Practical Activities _____ 6

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

| | |
|---|---|
| ***Classroom work*** | ***60 hours*** |
| Lectures | 26 hours |
| Practice sessions | 26 hours |
| Other activities | 8 hours |
| ***Autonomous work*** | ***90 hours*** |
| Individual work | 50 hours |
| Team work | 40 hours |

Nevertheless, the previous table can be shown in greater detail, taking into account the following overall distribution:

- 52 hours of lectures, with 50% theoretical demonstration and 50% solving type problems.
- 8 hours of PPT presentations.
- 90 hours of personal study, divided up over the 15 weeks of the 2nd semester.

There is a tutorial calendar timetable set by the teacher that can be requested by the students who want a tutorial

The dates of the final exams will be those that are officially published at http://eupla.unizar.es/asuntos-academicos/examenes.

The written assessment tests will be related to the following topics:

1. The initial study of the implementation of an Enterprise Information System.
2. Implementation design of an Enterprise Information System.
3. Oral presentation of the project.

### 4.5. Bibliography and recommended resources

http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=30128&Identificador=14337