

Academic Year/course: 2022/23

30224 - Information Systems

Syllabus Information

Academic Year: 2022/23

Subject: 30224 - Information Systems

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
326 - Escuela Universitaria Politécnica de Teruel

Degree: 439 - Bachelor's Degree in Informatics Engineering
443 - Bachelor's Degree in Informatics Engineering

ECTS: 6.0

Year: 3

Semester: First semester

Subject Type: Compulsory

Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

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

Students must demonstrate that they have achieved the expected learning outcomes through the following assessment activities:

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Practical test (40%): The knowledge test in practical test will be announced in the corresponding official call and will consist of the delivery of all the materials produced as a result of the practical classes of the course. Teachers may formulate the appropriate questions or tests that ensure the originality and quality of the materials delivered. Completion on the date, time and place determined by the EINA Global Assessment Test Calendar.

Supervised work (10%): In this activity, students will be presented with a work related to the contents of the subject. Each student / group should understand the project requirements, evaluate possible solution alternatives considering different technologies and analyze their advantages and disadvantages. The analysis carried out, the degree of justification of the conclusions obtained, the oral-written expression, the sources of reference used, the content and innovation of the work and the answers to the questions posed, if necessary, during the presentation-interview will be assessed.

Theoretical test (50%): Questions and/or problems related to the program taught in the course. In general, the quality and clarity of the answers will be assessed, as well as the strategies proposed by the students in their solutions.

To pass the subject, it is an essential condition to obtain a score in each of the tests greater than or equal to 5 points out of 10.

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Theoretical test (40%): Questions and/or problems related to the program taught in the course. In general, the quality and clarity of the answers will be assessed, as well as the strategies proposed by the students in their solutions.

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The qualification obtained in the first call in each of the parts (practical laboratory tests, performance or defense of group work / practical projects, or written test) will be valid in all calls of the course.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

EINA

The learning process is based on:

1. Lectures related to the topics included in the program of the course (24 hours) and the resolution of problems and tutorials in class (12 hours).
2. Tasks in the laboratory to develop different systems (24 hours spread over 12 sessions of 2 hours).
3. The creation of a paper about a topic related to the program of the course by the students. Moreover, students must also do a presentation of their paper in class.
4. Self-study.
5. Personal attention to the students along the course in office hours of the teachers in order to review and discuss materials and topics presented in both theoretical and practical sessions.
6. Exams and reports that the students should do during the course.

Keep in mind that the subject has both theoretical and practical orientation. Therefore, the learning process requires developing tasks in the laboratory in a collaborative way and also self-studying in an individual way.

EUPT

1. Lectures related to the topics included in the program of the course and the resolution of problems and tutorials in class (30 hours).
2. Tasks in the laboratory to develop different systems (30 hours).
3. Supervised work.
4. Self-study.
5. Personal attention to the students along the course in-office hours of the teachers in order to review and discuss materials and topics presented in both theoretical and practical sessions.
6. Exams and reports that the students should do during the course.

Keep in mind that the subject has both theoretical and practical orientation. Therefore, the learning process requires developing tasks in the laboratory in a collaborative way and also self-studying in an individual way.

4.2. Learning tasks

The course includes the following learning tasks:

- Lecture sessions in the classroom: In these sessions, different concepts, technologies, tools and methodologies related to the topics of the subject are presented. Moreover, students and teachers will discuss technical, ethical, and moral aspects related to the different concepts.
- Problem sessions in the classroom: In these sessions, tutorials about different technologies and examples of information systems in production are presented. Besides, during the last sessions of the course, students make presentations of their papers.
- Laboratory sessions: In these sessions students develop a total of 5 practical works in groups.

4.3. Syllabus

The course will address the following topics:

- Introduction to Information Systems
 - Differences between data and information
 - Data types: structured, semi-structured and unstructured
 - Types of information systems
 - Information systems in organizations
 - The life cycle of information systems

- Information systems and the Internet:
 - The Web: evolution and related technologies
 - Information Search on the Web
 - E-commerce: Digital Marketing and Online Reputation
 - The Semantic Web
 - Ethical and social aspects
- The organization of data and information or management systems and integration of information
 - Distributed Databases
 - OLTP vs OLAP
 - Knowledge-Based Systems / Business Intelligence: Knowledge representation
 - Data Mining
 - Ethical and Social aspects
- Legacy information systems
 - Strategies to migrate legacy systems and their data
- Introduction to Spanish legal issues related to Information Systems:
 - Standards to develop and manage Information Systems
 - Methodologies to manage risks
 - Introduction to GDPR and Intellectual property
 - Ethical and Social aspects

4.4. Course planning and calendar

Schedule

The schedule of the sessions of this subject will be defined by the Escuela de Ingeniería y Arquitectura (EINA).

Student Work

The subject has 6 ECTS credits: 2.8 credits for activities in the classroom and the lab and 3.2 credits for work of students. Therefore, the estimated dedication of each student to achieve the goals of the learning is 150 hours (60 contact hours and 90 non-contact hours) distributed approximately as follows:

- 65 hours for classroom activities (classroom sessions, laboratory sessions, presentation of papers, and evaluation).
- 45 hours for the development of the exercises, problems and tasks presented in different sessions.
- 40 hours for effective self-study.

4.5. Bibliography and recommended resources

EINA:

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=30224&Identificador=14675>

EUPT:

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=30224&Identificador=13596>