

## 30266 - Distributed Information Systems

### Syllabus Information

**Academic Year:** 2020/21

**Subject:** 30266 - Distributed Information Systems

**Faculty / School:** 110 - Escuela de Ingeniería y Arquitectura

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

**ECTS:** 6.0

**Year:** 4

**Semester:** 439 - Second semester

443 - Second semester

443 - Second semester

**Subject Type:** ---

**Module:** ---

### 1.General information

#### 1.1.Aims of the course

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

#### 1.3.Recommendations to take this course

### 2.Learning goals

#### 2.1.Competences

#### 2.2.Learning goals

#### 2.3.Importance of learning goals

### 3.Assessment (1st and 2nd call)

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

### 4.Methodology, learning tasks, syllabus and resources

#### 4.1.Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks such as:

**On-site instruction is mainly based on:**

- Lectures and problem solving sessions given by the teacher.
- Seminars given by experts.
- Laboratory practices at computer rooms.
- Tutor sessions at the teacher's office.
- Evaluation activities such as written tests, projects, oral presentations, etc.

**Off-site instruction includes:**

- Tutored works, such as preparation of seminars, problem solving, research reports, etc.
- Autonomous work and study of the theory of the course.
- Autonomous work and study of the practice of the course.

## 4.2.Learning tasks

The course includes the following learning tasks:

- **Lectures.** In these lectures, the professor will discuss the theoretical aspects of the course, use cases, how to complete the practices and works, and where to find additional information. The professor will encourage students to participate as much as possible.
- **Problem-solving sessions.** In these sessions, the concepts and techniques explained in master lectures will be put into practice by means of examples of application.
- **Laboratory practices.** The work in the computer lab will help students to further put into practice the concepts and techniques of the course.
- **Seminars.** If possible, external experts will be invited to give seminars. Both experts from the public and private sector will be considered.
- **Tutored works.** Tutored works will give students the opportunity to further study specific themes particularly interesting for them.

## 4.3.Syllabus

The course will address the following topics:

- I. Distributed Information Systems in Web Environments
  - 1. The Web. Standards. Accessing Web data
  - 2. Semi-structured data based on XML and RDF
  - 3. Open Linked Data. Big Data
  - 4. The Social Web. The Semantic Web. The Ubiquitous Web
  - 5. Uncertainty management in Distributed Information Systems
- II. Distributed Information Systems as Distributed Systems
  - 6. Wireless networks. Mobile computing
  - 7. Mobile application development
  - 8. Mobile data services. Mobile agents
  - 9. P2P networks. Sensor networks
  - 10. Mobile semantic services

## 4.4.Course planning and calendar

### Sessions

Face-to-face instruction will be organized as follows:

- Master lectures: 2 hours per week
- Problem-solving sessions: 1 hour per week.
- Laboratory practices: 5 sessions of 3 hours (approximately, one session every 2 weeks).

The scheduled of all the sessions and deadlines for the projects and works will be announced well in advance using the Moodle 2 platform.

### Student work

This course corresponds to 6 ECTS credits. The full dedication of the student is estimated at 150 hours (60 hours of face-to-face instruction and 90 hours of personal work) distributed as follows:

- 60 hours, approximately, of master lectures, problem-solving and laboratory practices.
- 87 hours of personal work of students including the realization of projects and works, the study of notes and texts, problem-solving, etc.
- A 3 hours final exam.

## 4.5.Bibliography and recommended resources

[BB: Bibliografía básica / BC: Bibliografía complementaria]

<http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=30266&Identificador=15430>

- [BB] Handbook of Semantic Web Technologies [electronic resource] / edited by John Domingue, Dieter Fensel, James A. Hendler. 260 1 Berlin, Heidelberg : Springer Berlin Heidelberg : Imprint: Springer, 2011.
- [BB] Hwang, Kai. Distributed and cloud computing / Kai Hwang, Geoffrey C. Fox, Jack J. Dongarra Amsterdam ; Boston : Morgan Kaufmann,2012
- [BB] Introducción al big data / José Francisco Aldana Montes ... [et al.] Madrid : García-Maroto, D.L. 2016
- [BB] Tomás Gironés, Jesús. El gran libro de Android / Jesús Tomás Gironés . - 3ª ed. Barcelona : Marcombo, 2013