

## 30255 - Decision-Making Assistance Systems

### Syllabus Information

**Academic Year:** 2019/20

**Subject:** 30255 - Decision-Making Assistance Systems

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

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

**ECTS:** 6.0

**Year:** 4

**Semester:** 439 - First semester

439 - First semester

439 - First semester

439 - First semester

439 - First semester

439 - First semester

443 - First semester

443 - First semester

443 - First semester

443 - First 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 of the course is followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented such as the orientation of this subject is mainly practical. The proposed activities are focused on learning based on the experience. The most suitable teaching strategies for relating theory and professional practise are the professional lectures, the resolution of problems and the laboratory practice. However, these strategies are difficult to be performed without a fundamental basis that allows students to understand and learn outside classes. The purpose of the interactive (or participative) lectures is to provide this basis.

## 4.2. Learning tasks

The course includes the following learning tasks:

Interactive lectures:

The goal of the interactive lectures is to provide the necessary bases to know and understand the relevance of the decision support systems, alongside with other specific aspects of the subjects that can not be learned in other activities. As a general rule, the participative activities during each session will be determined at the beginning of the presentation.

Resolution of problems

In the problem classes, some problem exercises will be solved, for applying the concepts and techniques introduced in the program of the subject. The goal of resolving problems is the application of practical knowledge such as the specification, development, deployment and use of systems. The development of these skills is achieved by argued discussions in the classroom. By contrasting different ideas, students learn to compare different solutions for solving some problem with specific circumstances, which is common in professional life.

Professional lectures

If possible, invited experts will perform professional lectures about their daily experience with decision support systems. These lectures will allow students to relate the knowledge acquired in the resolution of problems and regular lectures with the experience of these experts. The opinions of these experts will complement or even contradict the opinions mentioned in the face-to-face classes. This allows students to not only learn but also to become a critic and have their own opinion.

Practical activities

The aim of practical activities is to apply the different techniques in decision support systems and to use the information technology tools for supporting the decisions. The students should search, analyze, synthesize, contextualize and present with speeches the relevant information for analyzing the reports used in the evaluation.

## 4.3. Syllabus

The course will address the following topics:

- **T1 - Introduction.** Presentation of different approaches for decision support processes. Behaviours in the processes for making decisions.
- **T2 - Business Intelligence.** Review of practical real cases in professional environments.
- **T3 - Basis and Techniques.** Supporting models for decision support systems.
- **T4 - Decisions in Multiagent Systems.** Distributed Artificial Intelligent Systems. Modelling and Experiments.
- **T5 - Emerging trends.**

## 4.4. Course planning and calendar

Calendar of face-to-face sessions and presentations of works.

The calendar of the subject will be determined by the academic calendar of the corresponding course in each of the centres where this subject is taught.

The face-to-face sessions will have an estimated duration of 60 hours distributed between lectures, resolution of problems, and laboratory practice. The timetables of all the class hours and practical sessions will be announced with enough time in advance through the website of the centre and the web page of the subject.

## 4.5. Bibliography and recommended resources

[BB: Bibliografía básica / BC: Bibliografía complementaria]

- Zaragoza:

<http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=30255&Identificador=14719>

- [BB] Clemen, Robert T. Making hard decisions with decision tools / Robert T. Clemen, Terence Reilly . Mason (Ohio) : South-Western Cengage Learning, cop. 2001
- [BB] French, Simon. Decision behaviour, analysis and support / Simon French, John Maule and Nadia Papamichail . Cambridge [etc.] : Cambridge University Press, 2009
- [BB] Rios Insua, Sixto. Fundamentos de los sistemas de ayuda a la decisión / Sixto Ríos Insua, Concepción Bielza Lozoya, Alfonso Mateos Caballero . - [1a. ed.] Madrid : RA-MA, 2002
- [BB] Sharda, Ramesh. Business intelligence and analytics : systems for decision support / Ramesh Sharda, Dursun Delen, Efraim Turban ; with contributions by J. E. Aronson, Ting-Peng Liang, David King . 10th ed. Boston [etc.] : Pearson, cop. 2014
- Teruel:

<http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=30255&Identificador=13626>

- [BB] Clemen, r. T. Making hard decisions with DecisionTools / Robert T. Clemen, Terence Reilly. Mason, Ohio : South-Western/Cengage, 2001
- [BB] French, S. Decision behaviour and analysis support / Simon French, John Maule and Nadia Papamichail.

Cambridge : Cambridge University Press, 2009

- [BB] Ríos Insua, S. Fundamentos de los sistemas de ayuda a la decisión / Sixto Ríos Insua, Concepción Bielza Lozoya, Alfonso Mateos Caballero. Madrid : Ra-ma, cop. 2002
- [BB] Turban, E. Decision support and business intelligence systems / Efraim Turban, Sharda, Delen. Essex : Pearson Education, cop. 2014