27447 - ICT for Decision-Making

Información del Plan Docente

Academic Year	2016/17
Academic center	109 - Facultad de Economía y Empresa
Degree	417 - Degree in Economics
ECTS	3.0
Course	4
Period	First semester
Subject Type	Optional
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

Having the subject an orientation eminently practical, the presentation of the contents will take place in the computer room following a professional guidance. In parallel, the exploitation with cognitive purposes of the decisional tools studied in the classroom will be held in a narrative way, using unstructured methods (lateral thinking, group discussion...) for enhancing creativity and emotional skills. When possible, individual class projects will be grouped to be performed in a context of multiple actors, to train the students in the group decision making process (co-decision and co-creation).

5.2.Learning activities

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Apart from the regular lectures in the computer room, according to the schedule described in the next section, the students' training will be complemented by 12 on-line tutoring sessions, one on each of the weeks corresponding to the practice sessions previous to the final presentations. Furthermore, a collaborative tool for discussion and debate on the more relevant economic and business issues will be enabled.

5.3.Program

Unit 0: Presentation of the subject (objectives, programme, methodology, schedule, assessment)

Unit 1: Introduction to Decision Support Systems

- 1.1 Decision-making problems and decision-making processes
- 1.2 Components of a Decision Support System
- 1.3 Case study: Google Maps
- 1.4 Case study: a shipment planning system

Unit 2: Optimization of economic problems

- 2.1 Linear optimization
- 2.2 Distribution routing and distribution networks
- 2.3 Decision making under uncertainty
- 2.4 Multi-criteria optimization techniques

Unit 3: Design and exploitation of data bases

- 3.1 Relational database model
- 3.2 Office and corporate database management systems
- 3.3 Design of relational data bases
- 3.4 Query design

5.4.Planning and scheduling

Week	Type	Contents

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1	Theoretical-practice	Introduction to the subject
2	Theoretical-practice	Introduction to Decision Support Systems
3	Theoretical-practice Practice Group tutoring	Optimization of economic problems Optimization with Microsoft Excel Solver Groupwork assignment
4	Practice	Linear optimization - Continuous Programming
5	Practice	Linear optimization - Integer and binary programming
6	Practice	Distribution routing and distribution networks
7	Practice	Decision making under uncertainty - Portfolio optimization
8	Practice	Decision making under uncertainty - Game theory
9	Practice	Multi-criteria optimization techniques - Goal programming
10	Practice Group tutoring	Multi-criteria optimization techniques - Compromise optimization Groups progress monitoring
11	Theoretical-practice Practice	Design and exploitation of data bases Data base design with Microsoft Access

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12	Practice	Query design - Selection queries
13	Practice	Query design - Aggegated data queries
14	Practice Group tutoring	Query design - Update queries Groups progress monitoring
15	Practice	Group projects presentation - Assessment

5.5.Bibliography and recomended resources