

27447 - ICT for Decision-Making

Información del Plan Docente

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| Academic Year | 2017/18 |
| Faculty / School | 109 - Facultad de Economía y Empresa |
| Degree | 417 - Degree in Economics |
| ECTS | 3.0 |
| Year | 4 |
| Semester | First semester |
| Subject Type | Optional |
| Module | --- |

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

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

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

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 tasks

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 a minimum of three group tutorials. Furthermore, a collaborative tool for discussion and debate on the more relevant economic and business issues will be enabled.

5.3.Syllabus

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.Course planning and calendar

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| Week | Type | Contents |
|------|--|---|
| 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 |

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| | | Data base design with Microsoft Access |
| 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 recommended resources