

## 820070 - JD - Games and Decisions

Coordinating unit: 295 - EEBE - Barcelona East School of Engineering

Teaching unit: 732 - OE - Department of Management

Academic year: 2015

Degree: BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)  
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)  
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)  
BACHELOR'S DEGREE IN BIOMEDICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)  
BACHELOR'S DEGREE IN ENERGY ENGINEERING (Syllabus 2009). (Teaching unit Optional)  
BACHELOR'S DEGREE IN ENERGY ENGINEERING (Syllabus 2009). (Teaching unit Optional)  
BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)  
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Optional)  
BACHELOR'S DEGREE IN BIOMEDICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)  
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)  
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)  
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Optional)

ECTS credits: 6 Teaching languages: Spanish

### Teaching staff

Coordinator: JORGE PEREIRA GUDE

Others: JORGE PEREIRA GUDE

### Prior skills

Knowledge of statistics

### Degree competences to which the subject contributes

Transversal:

2. ENTREPRENEURSHIP AND INNOVATION - Level 3. Using knowledge and strategic skills to set up and manage projects. Applying systemic solutions to complex problems. Devising and managing innovation in organizations.

### Teaching methodology

The subject uses a 40% of master classes, and 60% of problem ans exercises.

### Learning objectives of the subject

To Show the students different tools to take decisions. To stablish the basis to capacitate student to formalize problems, and decision processeses.

A secondary objective of the subject is to complement other decision methods that the student has studied in different subject.

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### Study load

Total learning time: 150h	Hours large group:	45h	30.00%
	Hours medium group:	0h	0.00%
	Hours small group:	15h	10.00%
	Guided activities:	0h	0.00%
	Self study:	90h	60.00%

### Content

Single Person decision-making	Learning time: 29h Theory classes: 9h Laboratory classes: 3h Self study : 17h
Decision Trees	Learning time: 29h Theory classes: 9h Laboratory classes: 3h Self study : 17h
Utility and evaluation of alternatives	Learning time: 29h Theory classes: 9h Laboratory classes: 3h Self study : 17h
Zero-Sum games	Learning time: 31h 30m Theory classes: 9h Laboratory classes: 3h Self study : 19h 30m
Cooperative games	Learning time: 31h 30m Theory classes: 9h Laboratory classes: 3h Self study : 19h 30m

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### Qualification system

Evaluation is performed by solving small exercises during the classes, student presentations and guided exercises.

### Bibliography

#### Basic:

Hillier, Frederick S.; Lieberman, Gerald J. Introducción a la investigación de operaciones. 9ª ed. México, D.F: McGraw-Hill, cop. 2010. ISBN 9786071503084.

Luce, Robert Duncan; Raiffa, Howard. Games and decisions : introduction and critical survey. New York: Dover Publications, 1989. ISBN 0486659437.

Williams, J. D. The Compleat strategyst : being a primer on the theory of games of strategy. New York: Dover, 1986. ISBN 0486251012.

Straffin, Philip D. Game theory and strategy. [S.l.]: The Mathematical Association of America, cop. 1993. ISBN 0883856379.

#### Complementary:

Sackson, Sid. Un Montón de juegos. Barcelona: RBA, 2007. ISBN 9788489662261.

Fisher, Len. Rock, paper, scissors : game theory in everyday life. New York: Basic Books, cop. 2008. ISBN 9780465009381.