

820014 - OP - Production Organisation

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

Teaching unit: 732 - OE - Department of Management

Academic year: 2017

Degree: BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN BIOMEDICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN ENERGY ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN MATERIALS ENGINEERING (Syllabus 2010). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN BIOMEDICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
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BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)

ECTS credits: 6 Teaching languages: Spanish

Teaching staff

Coordinator: Garrido Godes, Ernesto

Others: - XAVIER GRÈBOL NOGUERAS - RUBÉN MARTÍN TORT - GEMMA ROS ESCODA

Prior skills

None

Requirements

None

Degree competences to which the subject contributes

Specific:

4. Understand the applications of business organisation.
5. Understand the basics of production and manufacturing systems.

Transversal:

2. ENTREPRENEURSHIP AND INNOVATION - Level 2. Taking initiatives that give rise to opportunities and to new products and solutions, doing so with a vision of process implementation and market understanding, and involving others in projects that have to be carried out.

Teaching methodology

The subject uses a 25% of master classes, and 25% of exercise classes. The rest of the time should be devoted to self-study

820014 - OP - Production Organisation

Learning objectives of the subject

- Show the main ideas of production, its relationship with the logistics area and other management elements of the enterprise
- Give to the students the idea of the importance of decision making when managing logistic and production systems.
- Prepare the student to different techniques to schedule and control activities.
- Prepare the student to solve fuzzy problems.
- Teach the student quantitative techniques applicable to the solution of management problems

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%

820014 - OP - Production Organisation

Content

Introduction	Learning time: 10h Theory classes: 4h Self study : 6h
Scheduling	Learning time: 30h Theory classes: 12h Self study : 18h
Production Planning	Learning time: 25h Theory classes: 10h Self study : 15h
Inventory manament for independent demand	Learning time: 35h Theory classes: 14h Self study : 21h
Inventory Management for Dependent Demand	Learning time: 10h Theory classes: 4h Self study : 6h
Logistics. Location and Routing	Learning time: 15h Theory classes: 6h Self study : 9h

820014 - OP - Production Organisation

(ENG) Modelització Matemàtica	Learning time: 20h Practical classes: 10h Self study : 10h
<p>Description: System modelling using mathematical programming. Establishment of variables, constraints and objective. Differences between modelling and solving. Linear Programming and Integer Linear Programming.</p> <p>Specific objectives: To provide students with tools for modelling and solving problems. To provide students with the skills to differentiate between data and variables, costs and solutions, objective functions and constraints. To provide the tools to allow a student to obtain linear equivalences to nonlinear problems.</p>	
(ENG) Treball de la competència en Innovació	Learning time: 5h Self study : 5h
<p>Description: The students face an open-ended problem with longer extension than a class exercise. The student has to identify the underlying problems and apply several solution techniques that are similar to the ones provided in class.</p> <p>Specific objectives: To train students to solve problems using analytical tools of similar characteristics, but not identical, to those shown during the course.</p>	

Qualification system

Four sources of qualification will be used.

- Exercises during class 40%
- Final Exam 40%
- Additional work at home 10%
- Generic Ability 10%

820014 - OP - Production Organisation

Bibliography

Basic:

- Companys Pascual, Ramón; Corominas Subias, Albert. Organización de la producción I : diseño de sistemas productivos. Barcelona: Edicions UPC, 1993-1994. ISBN 8476533632.
- Companys Pascual, Ramón; Corominas Subias, Albert. Organización de la producción II : dirección de operaciones. Barcelona: Edicions UPC, 1995-1996. ISBN 8476534515.
- Chase, Richard B.; Jacobs, F. Robert; Aquilano, Nicholas J. Administración de la producción y operaciones para una ventaja competitiva. 10ª ed. México [etc.]: McGraw Hill, 2005. ISBN 0072845074.
- Heizer, Jay H.; Render, Barry. Dirección de la producción y de operaciones : decisiones tácticas. 8ª ed. Madrid [etc.]: Prentice Hall, cop. 2007. ISBN 9788483223611.
- Heizer, Jay H. [et al.]. Dirección de la producción y de operaciones : decisiones estratégicas. Madrid [etc.]: Prentice Hall, cop. 2007. ISBN 9788483223604.
- Salvendy, Gavriel. Manual de ingeniería industrial. México, D.F. [etc.]: Noriega, 1991. ISBN 9681819659.

Complementary:

- Wagner, Harvey M.; Whitin, Thomson. "Dynamic version of the economic lot size model". Management Science. Vol. 50, núm. 12 (2004), p. 1770-1774.
- Eilon, Samuel; Watson-Gandy, Carl Donald Tyndale; Christofides, Nicos. Distribution management : mathematical modelling and practical analysis. London: Griffin, 1971. ISBN 0852641915.
- Bautista Valhondo, Joaquín; Companys Pascual, Ramón; Corominas Subias, Albert. Gestió de projectes. Barcelona: Edicions de la Universitat Oberta de Catalunya, 1998. ISBN 8495131005.
- Hillier, Frederick S.; Lieberman, Gerald J. Introducción a la investigación de operaciones. 9ª ed. México, D.F.: McGraw-Hill, cop. 2010. ISBN 9786071503084.