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 BIOMEDICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
- BACHELOR'S DEGREE IN ELECTRICAL 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 MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
- BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
- BACHELOR'S DEGREE IN MATERIALS ENGINEERING (Syllabus 2010). (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)
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- BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)

ECTS credits: 6

Teaching languages: Spanish

Teaching staff
Coordinator: Garrido Godes, Ernesto
Others: - XAVIER GRÉBOL 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.
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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

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group:</th>
<th>45h</th>
<th>30.00%</th>
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<tbody>
<tr>
<td></td>
<td>Hours medium group:</td>
<td>0h</td>
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<tr>
<td></td>
<td>Hours small group:</td>
<td>15h</td>
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<td></td>
<td>Guided activities:</td>
<td>0h</td>
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<tr>
<td></td>
<td>Self study:</td>
<td>90h</td>
<td>60.00%</td>
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### Content

<table>
<thead>
<tr>
<th>Topic</th>
<th>Learning time</th>
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<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>10h</td>
</tr>
<tr>
<td></td>
<td>Theory classes: 4h</td>
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<tr>
<td></td>
<td>Self study: 6h</td>
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<tr>
<td><strong>Scheduling</strong></td>
<td>30h</td>
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<tr>
<td></td>
<td>Theory classes: 12h</td>
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<tr>
<td></td>
<td>Self study: 18h</td>
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<tr>
<td><strong>Production Planning</strong></td>
<td>25h</td>
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<tr>
<td></td>
<td>Theory classes: 10h</td>
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<tr>
<td></td>
<td>Self study: 15h</td>
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<tr>
<td><strong>Inventory management for independent demand</strong></td>
<td>35h</td>
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<tr>
<td></td>
<td>Theory classes: 14h</td>
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<tr>
<td></td>
<td>Self study: 21h</td>
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<tr>
<td><strong>Inventory Management for Dependent Demand</strong></td>
<td>10h</td>
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<td></td>
<td>Theory classes: 4h</td>
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<tr>
<td></td>
<td>Self study: 6h</td>
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<tr>
<td><strong>Logistics. Location and Routing</strong></td>
<td>15h</td>
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<td></td>
<td>Theory classes: 6h</td>
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<td>Self study: 9h</td>
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### (ENG) Modelització Matemàtica

**Learning time:** 20h  
- Practical classes: 10h  
- Self study: 10h

**Description:**  
System modelling using mathematical programming. Establishment of variables, constraints and objective. Differences between modelling and solving. Linear Programming and Integer Linear Programming.

**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.

### (ENG) Treball de la competència en Innovació

**Learning time:** 5h  
- Self study: 5h

**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.

**Specific objectives:**  
To train students to solve problems using analytical tools of similar characteristics, but not identical, to those shown during the course.

### Qualification system

Four sources of qualification will be used.

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

Basic:


Complementary:


