820061 - PEM - Project Engineering & Management

Coordinating unit: 295 - EEBE - Barcelona East School of Engineering
Teaching unit: 717 - EGE - Department of Engineering Presentation
Academic year: 2019
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 ENERGY 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 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: English

Coordinator: FRANCISCO ALPISTE PENALBA

Degree competences to which the subject contributes

Specific:
1. Understand the organisational structure and functions of project management offices.

Transversal:
2. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.

Teaching methodology

The subject uses about 40% expositive methodology in classroom activities and projects based learning in 60%.
The individual work is needed about 40% of overall student learning time. the work in groups is needed in 60%.

Learning objectives of the subject

The following general learning objectives of this course can be considered:
1. Acquire fundamentals and knowledge about PROJECT ENGINEERING & MANAGEMENT. It refers to the management tasks related to the implementation of projects (Project Management)
2. Reliable use of information resources
## Study load

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

<table>
<thead>
<tr>
<th>Theme 1: Introduction</th>
<th><strong>Learning time:</strong> 4h</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Theme 1: Introduction. The basic fundamentals of project management</td>
</tr>
<tr>
<td></td>
<td>Theory classes: 2h</td>
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<td>Self study: 2h</td>
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<table>
<thead>
<tr>
<th>Theme 2: Project Integration Management</th>
<th><strong>Learning time:</strong> 4h</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Theme 2: Project Integration Management. To ensure that the various elements of the project are properly coordinated.</td>
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<tr>
<td></td>
<td>Theory classes: 2h</td>
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<td>Self study: 2h</td>
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<thead>
<tr>
<th>Theme 3: Project Scope Management</th>
<th><strong>Learning time:</strong> 4h</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Theme 3: Project Scope Management. To ensure that the project includes all work required and only these.</td>
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<tr>
<td></td>
<td>Theory classes: 2h</td>
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<td>Self study: 2h</td>
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<thead>
<tr>
<th>Theme 4: Project Time Management</th>
<th><strong>Learning time:</strong> 45h</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Theme 4: Project Time Management. To ensure the completion of the project within schedule.</td>
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<tr>
<td></td>
<td>Practical classes: 7h 30m</td>
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<tr>
<td></td>
<td>Guided activities: 15h</td>
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<tr>
<td></td>
<td>Self study: 22h 30m</td>
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<thead>
<tr>
<th>Theme 5: Project Cost Management</th>
<th><strong>Learning time:</strong> 45h</th>
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<tbody>
<tr>
<td><strong>Description:</strong></td>
<td>Theme 5: Project Cost Management. To ensure that the project is completed within budget.</td>
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<tr>
<td></td>
<td>Practical classes: 7h 30m</td>
</tr>
<tr>
<td></td>
<td>Guided activities: 15h</td>
</tr>
<tr>
<td></td>
<td>Self study: 22h 30m</td>
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</tbody>
</table>
### Theme 6: Project Quality Management
**Learning time:** 8h  
- Theory classes: 4h  
- Self study: 4h

**Description:**
Theme 6: Project Quality Management. To ensure that the project meets the requirements, i.e., the needs for which it was undertaken.

### Theme 7: Project Human Resource Management
**Learning time:** 8h  
- Theory classes: 4h  
- Self study: 4h

**Description:**
Theme 7: Project Human Resource Management. To achieve the most effective use of people involved in the project.

### Theme 8: Project Communication Management
**Learning time:** 8h  
- Theory classes: 4h  
- Self study: 4h

**Description:**
Theme 8: Project Communication Management. To ensure adequate and timely generation, collection, dissemination, storage and final location of project information.

### Theme 9: Project risk Management
**Learning time:** 8h  
- Theory classes: 4h  
- Self study: 4h

**Description:**
Theme 9: Project risk Management. To identify, analyze and respond to project risks. Includes maximizing the likelihood and consequences of positive events and minimizing the negative events.
# Theme 10: Project Procurement Management

**Learning time:** 16h  
Theory classes: 8h  
Self study: 8h

**Description:**  
Theme 10: Project Procurement Management. To acquire products (goods or services) from outside the organization conducting the project.

## Planning of activities

| PARTICIPATORY EXPOSITORY CLASS | Hours: 60h  
Theory classes: 30h  
Self study: 30h |
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<tr>
<td><strong>Description:</strong></td>
<td>Fundamentally expositive by involving the student with short-term activities. The teacher is the protagonist, sets the task to carry out and sets the rhythm of activity.</td>
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</table>
| Hours: 4h/week  
In class: 2h  
Self-study: 2h |

**Descriptions of the assignments due and their relation to the assessment:**  
An exercise to be performed by each student, similar to the examples solved by the teacher.

| PARTICIPATORY PROBLEM BASED LEARNING CLASS | Hours: 90h  
Practical classes: 15h  
Guided activities: 30h  
Self study: 45h |
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<tr>
<td><strong>Description:</strong></td>
<td>The method is based on the approach to problems by the teacher which the student has to solve developing a project in a given time or developing a task by planning, designing and carrying out activities.</td>
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</table>
| Hours: 6h/week  
Practical class (half group): 1h  
Guided activities: 2h  
Self-study: 3h |

**Descriptions of the assignments due and their relation to the assessment:**  
PROJECT
Qualification system

Exams of project theory 25%
Exams of problems 25%
Deliverables 20%
Project: 30%

Assessment of student work, individual and / or group, made in person and distance, will be held by the teacher assessment weighting appropriately the different activities. The final mark includes the generic competence assessed on the course: "EFFECTIVE USE OF INFORMATION RESOURCES".

These mark of "EFFECTIVE USE OF INFORMATION RESOURCES" constitutes the 20% of the Project qualification. It is calculated by the teacher and classmates evaluating the contributions made by each student developing the Project.

Regulations for carrying out activities

Exam of theory without reference material
Exam of problems with reference material

Bibliography

Basic:

Complementary:

Others resources:
Learning material published in the virtual learning environment.