820058 - ACAD - Advanced Computer-Aided Design

**Coordinating unit:** 820 - EUETIB - Barcelona College of Industrial Engineering

**Teaching unit:** 717 - EGE - Department of Engineering Presentation

**Academic year:** 2015

**Degree:**
- 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 MECHANICAL 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 INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Optional)

**ECTS credits:** 6

**Teaching languages:** English

### Teaching staff

**Coordinator:** JORDI TORNER RIBÉ

**Others:** JORDI TORNER RIBÉ

### Opening hours

**Timetable:** 1D07 (1er pis)

- Tuesdays 11-14h
- Thursdays 11-14h

### Prior skills

Must have completed successfully EGDAO (Graphic Expression and CAD)

### Requirements

GRaphic Expression and CAD

### Degree competences to which the subject contributes

**Transversal:**
1. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.

### Teaching methodology

This course uses narrative method by 50%, individual work 25% and project-based learning by 50%.

### Learning objectives of the subject

Acquire fundamentals and knowledge in order to use different CAD Systems according to the drawing, design or project to produce.
## Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group:</th>
<th>30h</th>
<th>20.00%</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Hours medium group:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td>Hours small group:</td>
<td>15h</td>
<td>10.00%</td>
</tr>
<tr>
<td></td>
<td>Guided activities:</td>
<td>15h</td>
<td>10.00%</td>
</tr>
<tr>
<td></td>
<td>Self study:</td>
<td>90h</td>
<td>60.00%</td>
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</tbody>
</table>
### Content

<table>
<thead>
<tr>
<th>(ENG) Giving a general knowledge of features and characteristics in CAD systems.</th>
<th>Learning time: 30h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical classes: 7h 12m</td>
<td>Guided activities: 3h</td>
</tr>
<tr>
<td>Self study: 19h 48m</td>
<td></td>
</tr>
</tbody>
</table>

**Description:**
- CAD software
- Project management

<table>
<thead>
<tr>
<th>(ENG) Getting knowledge on how to use 2D layer CAD systems</th>
<th>Learning time: 30h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical classes: 7h 12m</td>
<td>Guided activities: 3h</td>
</tr>
<tr>
<td>Self study: 19h 48m</td>
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**Description:**
- Introduction
- 2D plots
- Modification and Editing
- Blocks, dimensioning and layers
- 2D to 3D
- Layouts
- Solids

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<td>Self study: 19h 48m</td>
<td></td>
</tr>
</tbody>
</table>

**Description:**
- Drawings
- Animation
- Simulation
- Analysis
- Assembly Visualization
- Configurations
- Exploded assemblies
### (ENG) Introducing concepts on Advanced Surface Modeling (Bezier, B-Spline i NURBS)

**Description:**
- Introduction
- Presision modeling
- Creating surfaces
- NURBS basics
- Editing objects 3-D
- Modeling and editing
- Importing and exporting

**Learning time:** 30h
- Practical classes: 7h 12m
- Guided activities: 3h
- Self study: 19h 48m

### (ENG) Using visualization and rendering solutions

**Description:**
- Animator
- Photoview
- Events
- Simulation

**Learning time:** 30h
- Practical classes: 7h 12m
- Guided activities: 3h
- Self study: 19h 48m

### Qualification system

- Exam 1: 20%
- Exam 2: 20%
- Final Project: 55%
- Competence: 5%

### Bibliography

#### Basic: