820058 - ACAD - Advanced Computer-Aided Design

Coordinating unit: 295 - EEBE - Barcelona East School of Engineering
Teaching unit: 717 - EGE - Department of Engineering Presentation
Academic year: 2018
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 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 MECHANICAL 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 MATERIALS ENGINEERING (Syllabus 2010). (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
GrEaphic 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%. No reassessment test is performed.

Learning objectives of the subject
820058 - ACAD - Advanced Computer-Aided Design

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

<table>
<thead>
<tr>
<th>Study load</th>
<th>Hours large group</th>
<th>Hours medium group</th>
<th>Hours small group</th>
<th>Guided activities</th>
<th>Self study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total learning time</td>
<td>150h</td>
<td>0h</td>
<td>0h</td>
<td>45h</td>
<td>15h</td>
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<td>0.00%</td>
<td>30.00%</td>
<td>10.00%</td>
<td>60.00%</td>
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</tbody>
</table>
### Content

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

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

<table>
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<tr>
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<th>Description</th>
<th>Learning time: 30h</th>
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</table>
| **(ENG) Getting knowledge on how to use 2D layer CAD systems** | | Practical classes: 7h 12m  
Guided activities: 3h  
Self study: 19h 48m |

**Description:**
- Introduction
- 2D plots
- Modification and Editing
- Blocks, dimensioning and layers
- 2D to 3D
- Layouts
- Solids

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<tr>
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</thead>
</table>
| **(ENG) Using tools on CAD software: Drawings, Animation, Simulation, Analysis, Assembly Visualization, Configurations, Exploded assemblies** | | Practical classes: 7h 12m  
Guided activities: 3h  
Self study: 19h 48m |

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

**Description:**
- Introduction
- Precision 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

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**Qualification system**

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

**Bibliography**

**Basic:**

