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: 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 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 CHEMICAL 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
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%. No reassessment test is performed.

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>0h</th>
<th>0.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours medium group:</td>
<td>0h</td>
<td>0.00%</td>
<td></td>
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<tr>
<td>Hours small group:</td>
<td>45h</td>
<td>30.00%</td>
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</tr>
<tr>
<td>Guided activities:</td>
<td>15h</td>
<td>10.00%</td>
<td></td>
</tr>
<tr>
<td>Self study:</td>
<td>90h</td>
<td>60.00%</td>
<td></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>Description: CAD software, Project management</td>
<td>Practical classes: 7h 12m</td>
</tr>
<tr>
<td></td>
<td>Guided activities: 3h</td>
</tr>
<tr>
<td></td>
<td>Self study: 19h 48m</td>
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</tbody>
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<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>Description: Introduction, 2D plots, Modification and Editing, Blocks, dimensioning and layers, 2D to 3D, Layouts, Solids</td>
<td>Practical classes: 7h 12m</td>
</tr>
<tr>
<td></td>
<td>Guided activities: 3h</td>
</tr>
<tr>
<td></td>
<td>Self study: 19h 48m</td>
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</tbody>
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<table>
<thead>
<tr>
<th>(ENG) Using tools on CAD software: Drawings, Animation, Simulation, Analysis, Assembly Visualization, Configurations, Exploded assemblies</th>
<th>Learning time: 30h</th>
</tr>
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<td>Description: Drawings, Animation, Simulation, Analysis, Assembly Visualization, Configurations, Exploded assemblies</td>
<td>Practical classes: 7h 12m</td>
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<tr>
<td></td>
<td>Guided activities: 3h</td>
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<tr>
<td></td>
<td>Self study: 19h 48m</td>
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</tbody>
</table>
**820058 - ACAD - Advanced Computer-Aided Design**

| (ENG) **Introducing concepts on Advanced Surface Modeling (Bezier, B-Spline i NURBS)** | **Learning time:** 30h  
Practical classes: 7h 12m  
Guided activities: 3h  
Self study : 19h 48m |
|---|---|
| **Description:**  
Introduction  
Presision modeling  
Creating surfaces  
NURBS basics  
Editing objects 3-D  
Modeling and editing  
Importing and exporting |

| (ENG) **Using visualization and rendering solutions** | **Learning time:** 30h  
Practical classes: 7h 12m  
Guided activities: 3h  
Self study : 19h 48m |
|---|---|
| **Description:**  
Animator  
Photoview  
Events  
Simulation |

**Qualification system**

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

**Bibliography**

**Basic:**

