Course guides
820058 - ACAD - Advanced Computer-Aided Design

Unit in charge: Barcelona East School of Engineering
Teaching unit: 717 - DEGD - Department of Engineering Graphics and Design.
Degree: BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN MATERIALS ENGINEERING (Syllabus 2010). (Optional subject).

Academic year: 2020 ECTS Credits: 6.0 Languages: English

LECTURER
Coordinating lecturer: JORDI TORNER RIBÉ
Others: Primer quadrimestre:
JORDI TORNER RIBE - M11

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>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guided activities</td>
<td>15,0</td>
<td>10.00</td>
</tr>
<tr>
<td>Self study</td>
<td>90,0</td>
<td>60.00</td>
</tr>
<tr>
<td>Hours small group</td>
<td>45,0</td>
<td>30.00</td>
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</tbody>
</table>
**Total learning time:** 150 h

## CONTENTS

### (ENG) Giving a general knowledge of features and characteristics in CAD systems

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

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

### (ENG) Getting knowledge on how to use 2D layer CAD systems

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

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


**Description:**
- Drawings
- Animation
- Simulation
- Analysis
- Assembly Visualization
- Configurations
- Exploded assemblies

**Full-or-part-time:** 30h
- Practical classes: 7h 12m
- Guided activities: 3h
- Self study : 19h 48m
(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

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

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(ENG) Using visualization and rendering solutions

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

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

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**GRADING SYSTEM**

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

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**BIBLIOGRAPHY**

**Basic:**