66434 - Advanced mechanical CAD

Información del Plan Docente

Academic Year	2017/18
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	536 - Master's in Mechanical Engineering
ECTS	4.5
Year	1
Semester	Second semester
Subject Type	Optional
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. It is based on the understanding of the methodologies used to work with CAD software and the development of some different mechanical machines. A wide range of teaching and learning tasks are implemented, such as technical case studies, lectures, autonomous work, laboratory sessions, tasks, projects, and tutorials.

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5.2.Learning tasks

The course (4.5 ECTS: 112 hours) includes the following learning tasks:

Lectures (12 hours distributed in weekly one-hour sessions)**.** The teacher will explain the most used technologies. The syllabus is the following:

- Topic 1. 3D modelling techniques to design mechanical structural and aesthetic components:
  - Parametric solid modelling
  - Synchronous modelling
  - Surface modelling
  - Reverse engineering. Debugging and model simplification
- Topic 2. Design and development of mechanical assemblies:
  - Parameterization and associativity
  - Verification
  - Specific modules design of components and shaping tools
- Topic 3. Integrated Product Information (PMI) in collaborative environments.

Laboratory sessions (33 hours, distributed in 11 sessions of 3 hours each). They will be used to solve practical exercises and technical cases, and to develop and apply these methodologies to a concrete case that sometimes must be completed with some autonomous work. Students will use some commercial software with student license to work at home and to develop diverse task and the

Project (67 hours). The final project will be supervised by the teacher and it is where students will apply the studied methodologies to a concrete machine.

5.3.Syllabus

The course will address the following topics:

1. 3D modelling techniques for structural, mechanical and non-mechanical designs, parts and assemblies (week 1 to 5)
2. Design and development of mechanical assemblies (week 5 to 10)
3. Product Management Information (PMI) in collaborative environments. (Week 11)

5.4.Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the EINA website.

5.5.Bibliography and recommended resources

There is non recommended bibliography.

Autodesk software will be used.