

66434 - Advanced mechanical CAD

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	536 - Master's in Mechanical Engineering
ECTS	4.5
Course	1
Period	Second semester
Subject Type	Optional
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The learning process on this signature is based on:

The learning process is based on the understanding of the work methodologies used to work with CAD software and the development of some different mechanical machines. The concepts will be assimilated using some different technical and practice cases that could be integrated in some other signatures.

The theoretical classes will be used to explain the most used technologies and the laboratory classes will be used to

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develop and apply these methodologies to a concrete case that sometimes must be completed with some autonomous work. It will be used some commercial software with student license to work at home and to develop diverse task and the final projects that will be supervised and where there will be applied the studied methodologies to a concrete machine.

5.2.Learning activities

The offered program is designed to help students to achieve the expected results includes the following activities:

Learning activities scheduled are divided into lectures, practical classes and tutored work.

In theoretical sessions, it will be developed all the concepts related to the subject, grouped in these themes:

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

The practical sessions will be used to make some practical exercises and technical cases aimed at enhancing the acquisition and assimilation of acquired knowledge in the theoretical part.

5.3.Program

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

5.4.Planning and scheduling

- Schedule of sessions and presentations

The schedule of the course for both, theoretical and laboratory sessions, will be determined by the academic calendar that the center establish for each course.

Timing and load distribution

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Subject with 4.5 ECTS credits: 112 hours / student

12 h. of master class (12 weeks * 1 hour)

33 h. of laboratory class (11 sessions of 3 hours for the development of technical exercises and cases)

67 h. autonomous practical work

5.5. Bibliography and recommended resources

There is not any recommended bibliography

It will be used some software of Autodesk students.