25872 - Computer-assisted design I

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	558 - Bachelor's Degree in Industrial Design and Product Development Engineering
ECTS	6.0
Course	2
Period	First semester
Subject Type	Compulsory
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

BASIC COMPETENCES

CB01. Students have demonstrated knowledge and understanding in a field of study that is part of the general secondary education curricular, and is typically at a level which, although it is supported by advanced textbooks, includes some aspects that involve knowledge of the forefront of their field of study.

CB02. Students can apply their knowledge to their work or vocation in a professional manner and have competences typically demonstrated through devising and defending arguments and solving problems within their field of study.

CB03. Students have the ability to gather and interpret relevant data (usually within their field of study) to inform judgments that include an important reflection on social, scientific or ethical issues.

CB04. Students can communicate information, ideas, problems and solutions to both specialist and non-specialist

audiences.

CB05. Students have developed those skills needed to undertake further studies with a high degree of autonomy.

GENERAL COMPETENCES

GC06. Ability to generate the necessary documentation for the proper transmission of ideas through graphics, reports and technical documents, models and prototypes, oral presentations in Spanish and other languages.

GC07. Ability to use and master techniques, skills, tools and techniques and communication and others specific of design engineering needed for design practice.

GC08. Ability to learn continuously, to develop autonomous learning strategies and to work in multidisciplinary groups with motivation and determination to achieve goals.

SPECIFIC COMPETENCES

SC18. Ability to generate 3D geometric models for application to presentations, photorealistic rendering, simulations and tests of various kinds.

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The learning process is based on teaching in class theoretical contents and the subsequent realization of practices proposed by the teacher which progressively increase in complexity allowing to consolidate the theoretical content that is taught.

Enrolled students will have access from the beginning of the course through the corresponding course moodle-unizar to all information relevant for monitoring the course:

Program structure and content of the subject.

Timetable

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Evaluation criteria

chronological planning and content of the sessions.

Documentation of the subject.

Course notes.

Problems and statements of work to do.

Bibliography of reference for the contents of the subject.

Teacher data as tutoring schedules, etc.

5.2.Learning activities

1 Theory classes taught to all students (1h / week)

In these classes the teacher presents the entire group of students most theoretical content needed for the development of the subject, the various modules that compose it and the interrelationship between them

2 Lessons guided practice (3h / week) in computer classroom.

They are taught in groups of about 20 people. In these and on the computer the contents are taught applied to each of the modules. The teacher with the help of a video projector makes a practical application of the most important commands. Students try to reproduce on their own computer the obtained explanations.

3 tutored classes.

In them the teacher monitors the progress of the work, gives indications for the next steps and verifies the level of learning of each student.

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The distribution of the workload is set out below

The total teaching load of the subject is 6 ECTS: 150 hours for the student.

Of which:

15 hours of lecture (15 sessions of 1 hour)

40 hours of practical classes (20 sessions of 2 hours)

20 hours of theoretical study.

70 hours of practical work.

2.5 h examination and presentation of papers.

2.5 hours of protection of jobs.

5.3.Program

Subject program.

1. Modules that set up the application and the relationship between them (Week 1)

2. Pieces modeling (Week 2 to 4)

Definition of sketches

restrictions

Dimensioning

Sketch operations

Work operations

Predefined operations

3. Getting exploded drawings. (Week 5 to 7)

Generation of formats and boxes

Obtaining different types of views

Documentation plans

4. Creating assemblies (Week 8 to 9)

Restrictions between pieces

Sharing components

Simulations of operation of sets

5. Presentations (Week 9 to 10)

Application of materials and colors

Views

Animations and explosions

6. Obtainment of general plans and list of materials (Week 11 to 12)

7. adaptive design and advanced features (Week 13 to 14)

8. Technics of Import and export of models between applications (Week 15)

5.4.Planning and scheduling

The practice sessions are held in the laboratory according to schedule established by the Center and published prior to the start date of the course on the website of the Centre and on bulletin boards.

Each teacher will inform its hours of tutoring.

The other activities will be planned depending on the number of students and will be announced with enough time.

5.5.Bibliography and recomended resources

Bibliography

Modeling with Autodesk Inventor 2014. Barona Francisco Caparros. Ed. Rama.

Autodesk Inventor 2012. Thom Tremblay. Ed. Anaya Multimedia.

Industrial drawing. Sets and Exploded. J.M.Auría, P. Ibañez, P. Ubieto.

The great book of Solidworks. Sergio Gomez. Ed. Marcombo.