25868 - Graphic Expression I

Información del Plan Docente

Academic Year	2018/19
Subject	25868 - Graphic Expression I
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	558 - Bachelor's Degree in Industrial Design and Product Development Engineering
ECTS	6.0
Year	1
Semester	Second semester
Subject Type	Basic Education
Module	

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

BASIC COMPETENCES

CB01. Students have demonstrated knowledge and understanding in a field of study that is part of the general secondary educationcurricular, 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 determinationto achieve goals.

SPECIFIC COMPETENCES

SC04. Capacity of spatial vision and knowledge of graphic representation techniques, both traditional methods of metric geometry and descriptive geometry, such as through applications of computer-aided design.

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

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

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed in this course is oriented towards the achievment of the learning objectives and is based on theory sessions, practice sessions, laboratory and supervised activities:

- Lecture. Exposition and development of theoretical concepts using different tools.
- Practice sessions. Development of problems and type exercices by the student under the supervision of the teacher.
- Laboratory sessions. Exposition of practical contents and use of Computer Aided Design (CAD) tools.
- Supervised activities. Autonomous works that will be individually supervised by the teacher.

Students are expected to participate actively in the class throughout the semester. Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials. Further nformation regarding the course will be provided on the first day of class.

4.2.Learning tasks

This is a 6 ECTS course organized as follows:

- Lectures (30 h). The teacher explains the course contents and solves representative applied problems. These problems and exercices can be found in the problem set provided at the begining of the course. Regular attendance is highly recommended.

- Practice sessions (15 h). Students solve exercices and problems supervised by the teacher.
- Computer lab sessions (15 h). Sessions wil take place every two weeks (5 sessions in total) and they last 3 hours each. Students will work individually doing tasks such as practices of computer aided design.
- Autonomous work (90h). Students are expected to spend about 84 hours to study theory, solve problems and prepare sessions. In addition, 6 hours are expected to spend to take exams.
- Tutorials: Teacher's office hours allow students to solve questions and discuss unclear course contents. It is advisable to come with clear and specific questions.

4.3.Syllabus

The course will address the following topics:

- Topic 1. Standardization and drawing sets

Introduction to Graphic Expression
Standardization and Computer Aided Design
Tools and equipment for drawing
Formats, scales, line types and writing
Views dihedral. Representation of threads and gears
Cuts and sections
Dimensioning
Introduction to drawing sets

- Topic 2. Dihedral system

Intersection of lines and planes
Parallelism
Perpendicularity
Projection change plans
Views partial single and double
Spins
Lowering the elements of a plane
Measure distances
Measuring angles

- Practical applications dihedral system

Defining and building surfaces, apparent contour and representation surfaces
Flat sections and intersection straight
Intersection of surfaces
Surface development
Shades

- Conical perspective

Principles of conical perspective
Basic geometric concepts
Running prospects
Shades

4.4.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 (http://eina.unizar.es)

4.5.Bibliography and recommended resources