Engineering Graphics

Academic Year: (2022 / 2023) **Review date: 18-05-2022**

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: ALVAREZ CALDAS, CAROLINA

Type: Basic Core ECTS Credits : 6.0

Year : 1 Semester : 2

Branch of knowledge: Engineering and Architecture

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Students are expected to have completed Technical Drawing in the high school
Students will use a CAD software that is in Spanish.

OBJECTIVES

Upon successful completion of this subject, students will be able to:
1. Know, interpret and use the representation systems, their geometric foundation and the conventions and standardized symbols that underlie industrial design and computer-aided design.
2. Apply your knowledge and understanding to read, interpret and correctly develop industrial drafts.
3. Understand and use different methods to graphically express ideas, designs and projects in a precise, clear, unambiguous and standardized manner.
4. Develop technical level and computer-aided design laboratory tasks.
5. Select and use appropriate tools and methods to graphically document industrial designs.
6. Combine theory and practice to solve problems of engineering graphics.
7. Work effectively both individually and as a team

DESCRIPTION OF CONTENTS: PROGRAMME

1. Standardized representation systems.
1.1. Ortographic projection
1.2. Isometric projection
2. Representation of industrial assemblies
2.1. Representation of parts
2.2. Dimensioning
2.3. Standardized representation of basic industrial elements
2.4. Representation of industrial assemblies
3. Dimensional and geometric tolerances
4. Computer Aided Design

LEARNING ACTIVITIES AND METHODOLOGY

Magistral lectures, exercises in classroom and / or computer room, personal work and drafts elaboration.

ASSESSMENT SYSTEM

Items with evaluation percentages are indicated
Continuous assessment
TR: Subject work, delivered exercises, computer classroom exercises, etc: 30%
EC1: Partial exam part 1. 4,5%, if not passed. 15% if passed (F1 exempt in Ord. Conv.)
EC2: Partial exam part 2. 7,5%, if not passed. 25% if passed (F2 exempt in Ord. Conv.)
EC3: Partial exam part 3. 9%, if not passed. 30% if passed (F2 exempt in Ord. Conv.)
Final exam
F1: Final exam part 1. 10,5%. Exempt (in Ord. Conv.) If P1 is passed
F2: Final exam part 2. 17,5%. Exempt (in Ord. Conv.) If P2 is passed
F3: Final exam part 3. 21%. Exempt (in Ord. Conv.) If P1 is passed
To pass the subject, it is necessary to obtain a minimun of 35% of each part of the exam and in the CAD part.
The final mark must be at least 5.

In extraordinary call, no part is exempt. The qualification will be the most beneficial among the cases i) 100% of the exam and ii) 10,5%, 17,5% and 21% of F1, F2 and F3 respectively, plus 4,5%, 7,5% and 9% of the partial EC1, EC2 and EC3 respectively, plus 30% of TR
To have the chance of ii) you must obtain a minimum of 35% of the exam

% end-of-term-examination:	49
% of continuous assessment (assigments, laboratory, practicals…):	51

BASIC BIBLIOGRAPHY

- J. Félez y M. L. Martínez Dibujo industrial, Síntesis.
- Meneses, Álvarez, Rodríguez Introducción al Solid Edge, Paraninfo.

ADDITIONAL BIBLIOGRAPHY

- B. Ramos Barbero y E. García Maté Dibujo Técnico, AENOR.
- C. Preciado y F.J. Moral Normalización del dibujo técnico, Ed. Donostiarra.
- F. J. Rodríguez de Abajo y R. Galarraga Normalización del dibujo industrial, Ed. Donostiarra, 1993
- Izquierdo Asensi Geometría Descriptiva, Autor.
- Varios autores Normas UNE, UNE.

BASIC ELECTRONIC RESOURCES

- Grupo de EG de la UC3M . SPOC de la asignatura: https://spoc.uc3m.es/