

## DIM-GITI-434 MECHANICAL DESIGN

**SEMESTER:** Fall  
**CREDITS:** 3 ECTS  
**LANGUAGE:** Spanish  
**DEGREES:** GITI

### Course overview

Getting students to acquire an overview of mechanical elements through:

- Know and represent in a standardized way, parts and industrial elements.
- Create drawings of basic mechanical assemblies and prepare lists of materials.
- Perform the analysis and determine the operation of industrial mechanical assemblies from a drawing.

The aim of this course is to provide you with:

- Design a mechanical component based on its specifications, selecting the material, defining the geometry and dimensioning it.

### Prerequisites

- Basic knowledge of industrial drawings.

### Course contents

#### Theory:

1. REPRESENTATION AND INTERPRETATION OF DRAWINGS of mechanical assemblies and simple drawings.
2. REPRESENTATION AND INTERPRETATION OF DRAWINGS OF THERMAL AND HYDRAULIC INSTALLATIONS.
3. TOLERANCE, PRECISION AND UNCERTAINTY. Calculation and representation of dimensional, geometric and surface tolerances. Symbology and standardized graphic representation.
4. BASIC FUNCTIONAL ANALYSIS AND GRAPHIC REPRESENTATION OF MACHINES AND MECHANISMS. Standardized elements.

## Laboratory:

- P1. Practices standard about recognition and selection of mechanical elements.
- P2. Practical assembly and disassembly of mechanical elements.

## Textbook

- DIBUJO INDUSTRIAL. CONJUNTOS Y DESPIECES. Editorial: Paraninfo. Autor: PEDRO IBAÑEZ CARABANTES y otros. ISBN 13: 9788497323901.
- DIBUJO Y DISEÑO EN INGENIERIA. Editor: McGraw-Hill Companies 2005. Autor: Cecil Jensen. ISBN-10: 970103967X

## Software

- CAD – Solid Edge
- CAD/CAM/CAE – CREO Parametric.

## Grading

The following conditions must be accomplished to pass the course:

- A minimum overall grade of at least 5 over 10.

The overall grade is obtained as follows:

- Standard evaluation at the end of the term:
  - 10% Midterms exams.
  - 10% Homework.
  - 30% Lab reports.
  - 50% End of term exam (paper). A minimum grade in the final exam of 4 over 10.
- Attendance: minimum 85% to be allowed to take the exam.
- Additional evaluation during July (for those who do not pass at the end of the term):
  - 30% Lab reports.
  - 70% July exam (paper)