



# COMILLAS

UNIVERSIDAD PONTIFICIA

ICAI

ICADE

CIHS

**Syllabus**  
**2025 - 2026**

## GENERAL INFORMATION

### Data of the subject

|                   |  |
|-------------------|--|
| Subject name      | Mechanical Design  |
| Subject code      | DIM-GITI-434   |
| Mainprogram       | <a href="#">Bachelor's Degree in Engineering for Industrial Technologies</a> |
| Involved programs | Grado en Ingeniería en Tecnologías Industriales [Fourth year]                |
| Credits           | 3,0 ECTS   |
| Type              | Optativa (Grado)   |
| Department        | Department of Mechanical Engineering   |

### Teacher Information

#### Teacher

|            |                                      |
|------------|--------------------------------------|
| Name       | José Porras Galán                    |
| Department | Department of Mechanical Engineering |
| Office     | Alberto Aguilera 25 [D-009]          |
| EMail      | jporras@iit.comillas.edu             |
| Phone      | 2356                                 |

#### Teacher

|            |                                      |
|------------|--------------------------------------|
| Name       | Xavier Soldani                       |
| Department | Department of Mechanical Engineering |
| EMail      | xsoldani@icai.comillas.edu           |

### Profesores de laboratorio

#### Teacher

|            |                                      |
|------------|--------------------------------------|
| Name       | Rodrigo Álvarez Hernández            |
| Department | Department of Mechanical Engineering |
| EMail      | rahernandez@comillas.edu             |

## DESCRIPTION OF THE SUBJECT

### Contextualization of the subject

#### Prerequisites

No prerequisites are required except those acquired in the previous years of the degree.

## Course contents

### Contents



## Graphic representation

### Graphic representation

1. Representation and interpretation of drawings of mechanical assemblies and exploded views:
  - a. Conventional and symbolic representations.
  - b. Assembly drawings. Design, operation and assembly drawings.
  - c. Detail drawings. Manufacturing drawings.
2. Representation and interpretation of plans of thermal and hydraulic installations:
  - a. Basic symbology.
3. Tolerance, precision and uncertainty. Calculation and representation of dimensional, geometric and surface tolerances. Symbology and normalized graphic representation.
4. Basic functional analysis and graphic representation of machines and mechanisms.

## Standard elements.

### Standard elements.

1. Fitting elements with detachable and non-detachable elements:
  - a. threaded elements.
  - b. Pins, keys, springs, etc.
  - c. Rivets, rivets, staples, etc.
  - d. Union by welding or adhesion.
2. Representation of mobile joints:
  - a. Axes.
  - b. Gears.
  - c. Pulleys and chains.
  - d. Bearings.

## EVALUATION AND CRITERIA

The use of AI to produce full assignments or substantial parts thereof, without proper citation of the source or tool used, or without explicit permission in the assignment instructions, will be considered plagiarism and therefore subject to the University's General Regulations.



# COMILLAS

UNIVERSIDAD PONTIFICIA

ICAI

ICADE

CIHS

**Syllabus**  
**2025 - 2026**

## Grading

The final mark of the subject will be the following in the ordinary call:

- Midterm exam 10%
- Laboratory reports 20%
- Final group work 20%
- Final Exam (minimum grade of 4.0) 50%

In the extraordinary call will be:

- Laboratory reports 20%
- Final group work 20%
- Final Exam (minimum grade of 4.0) 60%

Class attendance is mandatory and will be checked every day. The absence of more than 15% of the teaching hours or the non-delivery of the practices may result in the impossibility of apply for the exam in both the ordinary and extraordinary calls.

During exams:

- The student must bring their own drawing material, which cannot be loaned or exchanged between students.
- The use of any books, notes or forms will not be allowed, nor their storage in programmable calculators that may falsify the results of the exam, except those provided with the statement of the exam, if any.
- Mobile phones must remain off, inside the backpack, purse or folder and away from the student.
- It is not allowed to attend the exam with a smartwatch or any other device that allows the connection or storage of data.

## BIBLIOGRAPHY AND RESOURCES

In compliance with current regulations on the **protection of personal data**, we would like to inform you that you may consult the aspects related to privacy and data [that you have accepted on your registration form](#) by entering this website and clicking on "download"

<https://servicios.upcomillas.es/sedelectronica/inicio.aspx?csv=02E4557CAA66F4A81663AD10CED66792>