

## DIM-GITI-121 Engineering Drawing and CAD

**SEMESTER:** Fall or Spring

**CREDITS:** 7.5 ECTS (5 hrs. per week: 3 Theory + 2 Lab)

**LANGUAGE:** Spanish

**DEGREES:** GITI

### Course overview

Engineering Drawing is concerned with capacity of spatial ability and knowledge of graphic representation techniques, both traditional methods of metric geometry and descriptive geometry, as in applications of computer aided design.

The aim of this course is to provide you with:

- the knowledge of the rules and formats relating to the implementation of plans for technical drawing
- the ability to make an outline plan for technical drawing of a part using the tools of views and dimensioning according to the habitual rules and conventions.
- the ability to make a sketch of a part.
- the ability to perform a three-dimensional model and a plane in one piece using a 3D parametric CAD program.
- Being able to represent and calculate a ISO dimensional tolerance.

### Prerequisites

No prior knowledge is not required, although it is advisable to know the basics of geometry and drawing.

### Course contents

#### Theory:

1. Normalization.
2. Technical Drawings Fundamentals.
  - a. Multiview Projection.
  - b. Auxiliary Views.
  - c. Sectional Views.

- d. Dimensioning.
3. Assembly Drawings.
4. Standard components.
5. Tolerancing.

### Laboratory:

1. CAD 2D (Autocad).
2. CAD 3D-Parametric.
3. Additive Manufacturing.

### Textbook

- Jesús Felez, M<sup>a</sup> Luisa Martinez. Ingeniería Gráfica y Diseño. Editorial Sintesis, 2008.

### Grading

The following conditions must be accomplished to pass the course:

- A minimum overall grade of at least 5 over 10.
- A minimum grade in the finals exams of 4 over 10.

The overall grade is obtained as follows:

- Final exam 40%.
- Other exams 20%. Typically there is 1 mid-term exam (2-hour long) and 4 additional short test exams (10 minutes long).
- Lab (CAD) final exam 20%.
- Homework exercises 20%
- Performance during the lab sessions 5% additional.