



Universitat de Lleida

DEGREE CURRICULUM  
**GRAPHIC EXPRESSION**

Coordination: ESTEBAN DALMAU, BERNAT

Academic year 2021-22

Subject's general information

<b>Subject name</b>	GRAPHIC EXPRESSION			
<b>Code</b>	102326			
<b>Semester</b>	1st Q(SEMESTER) CONTINUED EVALUATION			
<b>Typology</b>	<b>Degree</b>	<b>Course</b>	<b>Character</b>	<b>Modality</b>
	Bachelor's degree in Industrial Organization and Logistics Engineering	1	COMMON	Attendance-based
	Double degree: Bachelor Degree in Industrial Organisation and Logistics Engineering and Business Administration and Management	1	COMMON	Attendance-based
	Not informed	1	COMMON	Attendance-based
<b>Course number of credits (ECTS)</b>	9			
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	PRALAB		TEORIA
	<b>Number of credits</b>	3.6		5.4
	<b>Number of groups</b>	2		1
<b>Coordination</b>	ESTEBAN DALMAU, BERNAT			
<b>Department</b>	COMPUTER SCIENCE AND INDUSTRIAL ENGINEERING			
<b>Teaching load distribution between lectures and independent student work</b>	1ECTS = 10h class face-to-face + 15h of independent student work			
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.			
<b>Language</b>	Catalan and spanish.			
<b>Distribution of credits</b>	Theoretical credits: 5,4 ECTS Lab practices credits: 3,6 ECTS			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
ESTEBAN DALMAU, BERNAT	bernat.esteban@udl.cat	4,8	
VIVES COLOM, DAVID	david.vives@udl.cat	7,8	

## Subject's extra information

Continuous work is recommended in order to achieve the objectives of the course, as well, frequently visit the Virtual Campus because, information related to the subject will be announced and teaching materials will be provided. There are no prerequisites for this course.

## Learning objectives

- Apply the descriptive geometry techniques.
- Apply the parallel orthographic projection representation techniques.
- Be able to visualize and interpret 3-dimensional physical elements.
- Be able to interpret and obtain parallel orthographic projection views of both simple and complex objects.
- Be able to interpret and represent mechanical object drawings and mechanical assemblies using UNE normative.
- Develop skill in handling conventional drawing instruments.
- Acquire skills in freehand sketching.
- Acquire skills in using program computer-aided design.

## Competences

### Basic Competences

**B01** That students have demonstrated to possess and understand knowledge in an area of study that starts from the base of general secondary education, and is usually found at a level that, although supported by advanced textbooks, also includes some aspects that imply knowledge coming from the vanguard of his/her field of study.

**B02** That students know how to apply their knowledge to their work or vocation in a professional manner and possess the skills that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study.

**B05** That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

### Transversal Competences

**CT3.** To implement new technologies and technologies of information and communication.

**CT5.** To apply essential notions of scientific thinking.

## General Competences

**CG4.** To solve problems with initiative, make decisions, creativity, critical reasoning and to communicate and transmit knowledge, skills and abilities in the field of Industrial Chemical Engineering.

**CG5.** To carry out measurements, calculations, valuations, appraisals, surveys, studies, reports, work plans and other analogous work.

**CG6.** To implement specifications, regulations and mandatory rules.

**CG10.** To work in a multilingual and multidisciplinary environment.

## Specific Competences

- **CE5.** To apply spatial vision and knowledge of graphic representation techniques, both by traditional methods of metric geometry and descriptive geometry, as well as by computer-aided design applications.

## Subject contents

The table of contents is structured as follows:

**THEMATIC BLOCK I:** Descriptive geometry. Standardization.

**THEMATIC BLOCK II:** Industrial drawing. Parametric Drawing.

**THEMATIC BLOCK III:** Computer aided design (CAD).

## Methodology

The teaching methodology consists of:

- **Lecture class and problems (online class and face-to-face class):** These classes are held in large groups and consist of combined lectures with the aim of exposing theoretical aspects, with problems classes, in which problems are solved in order to consolidate the theoretical learning aspects.
- **Practices (online class and face-to-face class):** These classes are held in groups of smaller size in the CAD Lab. In this classes, the student can put into practice the theoretical aspects and be able to solve real problems using computer aided design tools (CAD).
- **Evaluation System:** The teaching methodology used in the evaluation system includes written tests and practical tests.

## Development plan

Week	Methodology	Content	Class hours	Independent work hours
1				
2	Master class Exercises and Practices	Block I, II Block III: session 1	6	9
3	Master class Exercises and Practices	Block I, II Block III: session2	6	9
4	Master class Exercises and Practices	Block I, II Block III: session 3	6	9

5	Master class Exercises and Practices	Block I, II Block III: practice 4	6	9
6	Master class Exercises and Practices	Block I, II Block III: session 5	6	9
7	Master class Exercises and Practices	Block I, II Block III: session 6	6	9
8	Master class Exercises and Practices Practical test	Block I, II Block III: test CAD-1	6	9
9	Evaluation	test PA-1	2	9
10	Master class Exercises and Practices	Block I, II Block III: session 7	6	9
11	Master class Exercises and Practices	Block I, II Block III: session 8	6	9
12	Master class Exercises and Practices	Block I, II Block III: session 9	6	9
13	Master class Exercises and Practices	Block I, II Block III: session 10	6	9
14	Master class Exercises and Practices	Block I, II Block III: session 11	6	9
15	Master class Exercises and Practices Practical test	Block I, II Block III: test CAD-2	6	9
16-17	Evaluation	test 2 (PA-2)	2	9
18	Tutoring	Tutoring		
19	Evaluation	Retake (PR)	2	

## Evaluation

The evaluation method consists of:

1. Test-1: The test will evaluate contents of blocks I,II and III and it will be held during 9th week. This exam has a percentage over the final mark of **42,5%**.
2. Test-2: The test will evaluate contents of blocks I,II and III and it will be held during 16th and 17th week. This exam has a percentage over the final mark of **42,5%**.
3. Test 1 and test 2 activities each require a minimum of 3.5 out of 10 to weight in the final grade.
4. EC. They are the class exercises with a percentage on the final mark of the subject of **15%**.

The subject's final mark will be obtained as the sum of all percentages explained above, following the next mathematical expression:

$$\text{Final Mark} = 42,5\% \text{ Test-1} + 42,5\% \text{ Test-2} + 15\% \text{ EC}$$

Retake exam: Allows you to recover test-1 and test-2. **85%**

## Bibliography

### Basic bibliography

Félez, Jesús., Martínez, María Luisa., Cabanellas, Jose., y Carretero, Antonio. (1996) *Fundamentos de Ingeniería Gráfica*. Síntesis. Madrid

Pérez, Jose. y Palacios, Sebastián. (1998) *Expresión Gráfica en la Ingeniería. Introducción al Dibujo Industrial*. Prentice Hall, Madrid

Ramos, Basilo y Garcia, Esteban. (1999) *Dibujo Técnico*. AENOR . Madrid

Comasòlives Font, Ramon., *Sistema Dièdric*. (2001) Ed. UPC Barcelona ISBN [8483014335](#)

Sánchez, Juan Antonio. y Villanueva, Lluís., *Temas clau de dibuix tècnic* (1991) Ed UPC Barcelona ISBN [848-7653-119-2](#)

## **Complementary bibliography**

AENOR (1999). *Dibujo Técnico. Normes Bàsiques*. AENOR, Madrid

Mediaactive. *Aprender AutoCAD 2017 con 100 ejercicios prácticos*. Marcombo. 2017. ISBN:[9788426724342](#)

Montaño la Cruz, Fernando. *AUTOCAD 2017 (Guía Práctica)*. Anaya Multimedia. 2016. ISBN: [9788441538603](#)

Reyes Rodriguez, Antonio Manuel. *AUTOCAD 2017 (Manual imprescindible)*. Anaya Multimedia. 2016. ISBN: [9788441538610](#)