Universitat de Lleida

DEGREE CURRICULUM

GRAPHIC EXPRESSION

Coordination: ESTEBAN DALMAU, BERNAT

Academic year 2023-24

GRAPHIC EXPRESSION 2023-24

Subject's general information

<table>
<tr><td>Subject name</td><td>GRAPHIC EXPRESSION</td></tr>
<tr><td>Code</td><td>102326</td></tr>
<tr><td>Semester</td><td>1st Q(SEMESTER) CONTINUED EVALUATION</td></tr>
<tr><td>Typology</td><td>
<table>
<tr><th>Degree</th><th>Course</th><th>Character</th><th>Modality</th></tr>
<tr><td>Bachelor's degree in Industrial Organization and Logistics Engineering</td><td>1</td><td>COMMON/CORE</td><td>Attendance-based</td></tr>
<tr><td>Common branch in industrial engineering programs - Igualada</td><td>1</td><td>COMMON/CORE</td><td>Attendance-based</td></tr>
<tr><td>Doble titulació: Grau en Enginyeria en Organització Industrial i Logística i Grau en Administració i Direcció d'Empreses</td><td>1</td><td>COMMON/CORE</td><td>Attendance-based</td></tr>
<tr><td>Not informed</td><td>1</td><td>COMMON/CORE</td><td>Attendance-based</td></tr>
</table>
</td></tr>
<tr><td>Course number of credits (ECTS)</td><td>9</td></tr>
<tr><td>Type of activity, credits, and groups</td><td>
<table>
<tr><th>Activity type</th><td>PRALAB</td><td>TEORIA</td></tr>
<tr><th>Number of credits</th><td>3.6</td><td>5.4</td></tr>
<tr><th>Number of groups</th><td>2</td><td>1</td></tr>
</table>
</td></tr>
<tr><td>Coordination</td><td>ESTEBAN DALMAU, BERNAT</td></tr>
<tr><td>Department</td><td>INDUSTRIAL AND BUILDING ENGINEERING</td></tr>
<tr><td>Teaching load distribution between lectures and independent student work</td><td>1ECTS = 10h class face-to-face + 15h of independent student work</td></tr>
<tr><td>Important information on data processing</td><td>Consult this link for more information.</td></tr>
<tr><td>Language</td><td>Catalan and spanish.</td></tr>
<tr><td>Distribution of credits</td><td>Theoretical credits: 5,4 ECTS
Lab practices credits: 3,6 ECTS</td></tr>
</table>

GRAPHIC EXPRESSION 2023-24

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
BERNADET SOLE, ANTONI	antoni.bernadet@udl.cat	4,4	
ESTEBAN DALMAU, BERNAT	bernat.esteban@udl.cat	8,2	

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.

GRAPHIC EXPRESSION 2023-24

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:

Final Mark = 42,5% Test-1 + 42,5% Test-2 + 15% EC

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

Alternative evaluation: Students who have the approval to be assessed through alternative evaluation (see requirements and procedure in the Evaluation regulations) must carry out the following activities: test (85%) and activities (15%).

Bibliography

Basic bibliography

Félez, Jesús., Martínez, Maria Luisa., Cabanellas, Jose., y Carretero, Antonio. (1996) *Fundamentos de Ingenieria Gràfica.* Síntesis. Madrid

Pérez, Jose. y Palacios, Sebastián. (1998) *Expresiçon Gráfica en la Ingenieria. 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., Temes 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