



Universitat de Lleida

DEGREE CURRICULUM  
**GRAPHIC EXPRESSION 1**

Academic year 2015-16

## Subject's general information

<b>Subject name</b>	Graphic Expression 1
<b>Code</b>	101403
<b>Semester</b>	1r semester Continuous Avaluation
<b>Typology</b>	Troncal
<b>ECTS credits</b>	6
<b>Theoretical credits</b>	0
<b>Practical credits</b>	0
<b>Office and hour of attention</b>	Send an email in order to arrange a date  Office 0.12 CREA building Campus Cappont
<b>Department</b>	Department of computer science and Industrial Engineering
<b>Modality</b>	Presencial
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.
<b>Language</b>	Catalan
<b>Degree</b>	Degree in Architectural Technology
<b>Office and hour of attention</b>	Send an email in order to arrange a date  Office 0.12 CREA building Campus Cappont
<b>E-mail addresses</b>	gperez@diei.udl.cat

Gabriel Perez Luque

## Subject's extra information

### Suggestions

Practical course in which the study is based on the realization of all the exercises and practices requested, as well as consulting and realization of other exercises given in the recommended bibliography.

### The course as part of the academic plan

This course takes place in the 1st semester of the 1st year of teaching. The course belongs to the subject "Fundamentals of Graphic Expression" from the "Basic Training" module.

## Learning objectives

See section Competences

## Competences

### University of Lleida strategic competences

- Mastering ICT's.
  - Knowing the operating of tools, materials and techniques of graphic expression and use them correctly and in the right time.

### Degree-specific competences

- Capacity to apply the spatial representation methods, the development of the sketch, the proportionality, the language and the techniques of graphic representation of the elements and constructive processes.
  - Value the graphic language (Expression Graphic) as a means of communication in the work environment of the Building Engineer
  - Express themselves fluently and property with the terminology of Graphic Expression, knowing at all times use the most appropriate graphic resource.
  - Purchase the habit of working in an orderly, organized and accurate way.
  - Developing the spatial vision and learn to represent three-dimensional shapes and spaces.
  - Draw shapes and spaces, making transfers from the three-dimension to the two-dimension, and in the same two-dimension.

### Degree-transversal competences

- Capacity of abstraction and of critical, logical and mathematical thinking.
  - Understanding the geometry as a set of concepts related through properties and laws.
  - Reason and solve problems in graph and technical representation, using the standards established in a correct way.

## Subject contents

1. Introduccion to Descriptive Geometry
2. Dihedral system

3. Axonometric system
4. Cone system
5. Dimensional planes system

## Methodology

The classes have both a theoretical component, in which the program items will be followed, and also a practical component in which the exercises will be performed on traditional drawing board, related to corresponding theory in each class.

The work format will be primarily in A3 and A4.

Since the time available is limited, students will have some printed course notes in which they will find all the theoretical concepts covered in class.

Each chapter will be followed by series of exercises that will help the students to further practice the different concepts and techniques explained in class.

## Development plan

Dates (Weeks)	Description	Classroom activity	HTP (2) (Hours)	Activity autonomous work	HTNP (3) (Hours)
1 18 set					
9-9:50 h	Introduction				
11:10-13:00 h	T1. Introduccion to Descriptive Geometry	Masterly lesson	6	Exercises and study	4,5
2 25 set					
	PR1. Dihedral wiews	Class practice PR1		Exercises and study	4,5
3 2 oct					
9-9:50 h	T2. Point, line and plane. Dihedral movements	Masterly lesson	3	Exercises and study	4,5
11:10-13:00 h	PR1. Views Pick up the exercises				
4 9 oct					
9-9:50 h	T2. Relative positions	Masterly lesson	3	Exercises and study	4,5
11:10-13:00 h	PR2. Point, line and plane. Dihedral movements Pick up the exercises	Class practice PR2	3	Exercises and study	4,5

5 <b>16 oct</b>					
9-9:50 h	T2. Relative positions	Masterly lesson	3	Exercises and study	4,5
11:10-13:00 h	PR3. Relative positions. Pick up the exercises	Class practice PR3	3	Exercises and study	4,5
6 <b>23 oct</b>					
9-9:50 h	T2. Polyhedra. Prism and pyramid.	Masterly lesson	3	Exercises and study	4,5
11:10-13:00 h	PR4. Prism and pyramid. PR5. Polyhedra	Class practice PR4,PR5	3	Exercises and study	4,5
7 <b>30 oct</b>					
9-9:50 h	T2. Polyhedra. Prism and pyramid.	Masterly lesson	3	Exercises and study	4,5
11:10-13:00 h	PR4. Prism and pyramid.. Pick up the exercises	Class practice PR4	3	Exercises and study	4,5
8 <b>6 nov</b>					
9-9:50 h	T3. Axonometric system	Masterly lesson	3	Exercises and study	4,5
11:10-13:00 h	PR5. Polyhedra Pick up the exercises	Class practice PR5	3	Exercises and study	4,5
9 <b>10 nov</b>	Assessment activity 1	Assessment activity 1	3	Exercises and study	4,5
10 <b>20 nov</b>					
9-9:50 h	T3. Axonometric system	Masterly lesson	3	Exercises and study	4,5
11:10-13:00 h	PR6 (1) . Axonometric system	Class practice PR6	3	Exercises and study	4,5
11 <b>27 nov</b>					
9-9:50 h	T3. Axonometric system	Masterly lesson	3	Exercises and study	4,5
11:10-13:00 h	PR6 (2). Axonometric system. Pick up the exercises	Class practice PR6	3	Exercises and study	4,5
12 <b>4 Des</b>					
9-9:50 h	T4. Conical system	Masterly lesson Class practice	3	Exercises and study	4,5
11:10-13:00 h	PR7. Conical system	Class practice PR7	3	Exercises and study	4,5
13 <b>11 Des</b>					
9-9:50 h	T4. Conical system	Masterly lesson Class practice	3	Exercises and study	4,5

11:10-13:00 h	PR7. Conical system. Pick up the exercises	Class practice PR7	3	Exercises and study	4,5
14 18 Des					
9-9:50 h	T5. Dimensional planes system	Masterly lesson Class practice	3	Exercises and study	4,5
11:10-13:00 h	PR. Dimensional planes system				
15 8 Jan					
9-9:50 h	Doubts and questions				
11:10-13:00 h	PR8. Dimensional planes system. Pick up the exercises	Class practice PR8	3	Exercises and study	4,5
16,17 11 Jan	Assessment activity 2	Assessment activity 2	3	Exercises and study	4,5
18	Seminar and mentoring		3		4,5
19 1 Feb	Seminar and mentoring	Activities recovery	3	Exercises and study	4,5

## Evaluation

Objectives	Assessment activity	%	Dates	M/V (1)	I/G (2)
	Assessment activity 1	30	Week 9	M	I
	Assessment activity 2	50	Week 16,17	M	I
	PR1	2.5	Week 3	M	I
	PR2	2.5	Week 4	M	I
	PR3	2.5	Week 5	M	I
	PR4	2.5	Week 7	M	I
	PR5	2.5	Week 8	M	I
	PR6 (2)	2.5	Week 11	M	I
	PR7	2.5	Week 13	M	I
	PR8	2.5	Week 15	M	I

## Bibliography

### Basic Bibliography

- **Geometria Descriptiva. Sistema Dièdric Directe. Fonaments i exercicis. Volum 1/ Josep Bertran Guasp/ Ed. Donostiarra, 1995.**
  - This book introduces the students in the direct dihedral system, without using land line, being one of main bibliographical references on the subject, both for its clarity and quality of the technical drawings.
- **El Sistema Dièdric Directe. Propostes pel COU i per l'Ensenyament Secundari/ Josep Bertran i Guasp/ Ed. II-lustre Col·legi Oficial de Doctors i Llicenciats en Belles Arts i Professors de Dibuix de Catalunya, 1993.**

- Previous to the former, in the same topic, this book presents interesting practical examples.
- **El Sistema Dièdric / Ramon Comasòlivas Font/ Ed. UPC, Quaderns Aula, 1993.**
  - Brief overview of the fundamentals of direct dihedral system and its most important practical applications.
- **Geometria Descriptiva / Mario Gonzalez Monsalve i Julian Palencia Cortes / Ed. Salesiana – Sevilla, 1971.**
  - This book shows in depth the four representation systems, with some interesting and clear examples.
- **Geometria Descriptiva/ Fernando Izquierdo Asensi / Ed. Dossat, 1974.**
  - Llibre de referència imprescindible per a conèixer els traçats propis de la geometria descriptiva.
- **Ejercicios de Geometria Descriptiva / Fernando Izquierdo Asensi / Ed. Dossat, 1984.**
  - Collection of exercises about dihedral system that complements with some examples the previous theoretical treatise.
- **Geometria Descriptiva I. Diédrico / F.JavierRodriguez de Abajo / Ed. Donostiarra.**
- **Geometria Descriptiva II. Planos Acotados / F.Javier Rodriguez de Abajo / Ed. Donostiarra.**
- **Geometria Descriptiva III. Axonomètrico / F.Javier Rodriguez de Abajo / Ed. Donostiarra.**
- **Geometria Descriptiva IV. Perspectiva caballera / F.Javier Rodriguez de Abajo / Ed. Donostiarra.**
- **Geometria Descriptiva V. Sistema cónico /F.Javier Rodriguez de Abajo / Ed. Donostiarra.**
  - Collection of treatises on the different systems of representation. Their consultation is necessary.
- **Dibujo Técnico (Expresión Gráfica de la Ingeniería) / VicenteCollado / Ed. Tébar, 1996.**
  - Theory and practical about dimensioned plans system, standardization of both industrial design and construction.
- **Col·lecció Prácticas de Dibujo Técnico / Diferents autors / Ed. Donostiarra.**
  - Material to practice on different systems of representation.
- **Geometria Paso a Paso. Volumen I. Elementos de geometria métrica y sus aplicaciones en Arte, Ingeniería y Construcción. / Álvaro Rendón / Ed. Tébar, 2001.**

### Complementary Bibliography

- **Temes clau de dibuix tècnic/ Juan Antonio Sánchez i Lluís Villanueva Bartrina/ Ed. UPC,1991.**
- **Recull de conceptes de tipus general sobre dibuix tècnic, i aprofundiment en l'operativitat dièdrica i la perspectiva cònica, per mitjà d'exercicis de molt interès.**
- **Tratado de dibujo. Problemas de geometria descriptiva con aplicaciones al dibujo lineal /J. Solá Torrella. Aparejador / Ed. Campás, 1961.**
- **Interessant col·lecció d'exercicis del sistema dièdric i de plans acotats. Treballa les interseccions de superfícies amb profunditat i fa un recull de aplicacions a peces mecàniques.**
- **Geometria Paso a Paso. Volumen II Geometria Projectiva y Sistemas de Representación /Álvaro Rendón / Ed. Tébar, 2001.**
- **Tractat que aprofundeix en els sistemes de representació, de molt bona qualitat gràfica.**
- **Geometria Descriptiva Aplicada / Kathryn Holliday / Ed. Thomson, 2000.**
- **Aquesta obra treballa el sistema dièdric (sistema americà) i les seves aplicacions al món de l'enginyeria i la construcció.**
- **Ejercicios de Dibujo Técnica I Resueltos Y Comentados / Carlos Cobos y M<sup>a</sup> Gloria del Rio / Ed. Tébar, 1996.**
- **Col·lecció d'exercicis de l'assignatura de Geometria Descriptiva Aplicada del primer curs d'Enginyeria Industrial de l'Escola Superior d'Enginyers de Sevilla. Molt interessant.**

### Interesting Websites

- <http://www.dibujotecnico.com>
- <http://www.librys.com/dibujotecnico>
- <http://www.cnice.mecd.es/eos/materialeseducativos/mem2001/108d/>
- <http://www.arqhys.com/arquitectura/dibujo-tecnico-historia>
- <http://www.infomecanica.com>

These websites provide access to support materials for the Graphic Expression subject.