Universitat de Lleida

DEGREE CURRICULUM

GRAPHIC EXPRESSION 2

Coordination: PÉREZ LUQUE, GABRIEL

Academic year 2021-22

GRAPHIC EXPRESSION 2 2021-22

Subject's general information

<table>
<tr><td>Subject name</td><td>GRAPHIC EXPRESSION 2</td></tr>
<tr><td>Code</td><td>101404</td></tr>
<tr><td>Semester</td><td>2nd Q(SEMESTER) CONTINUED EVALUATION</td></tr>
<tr><td>Typology</td><td>
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<tr><th>Degree</th><th>Course</th><th>Character</th><th>Modality</th></tr>
<tr><td>Bachelor's Degree in Architectural Technology and Building Construction</td><td>1</td><td>COMMON</td><td>Attendance-based</td></tr>
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<tr><td>Course number of credits (ECTS)</td><td>6</td></tr>
<tr><td>Type of activity, credits, and groups</td><td>
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<tr><th>Activity type</th><th>PRAULA</th><th>TEORIA</th></tr>
<tr><td>Number of credits</td><td>3</td><td>3</td></tr>
<tr><td>Number of groups</td><td>1</td><td>1</td></tr>
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<tr><td>Coordination</td><td>PÉREZ LUQUE, GABRIEL</td></tr>
<tr><td>Department</td><td>COMPUTER SCIENCE AND INDUSTRIAL ENGINEERING</td></tr>
<tr><td>Teaching load distribution between lectures and independent student work</td><td>Theoretical credits (2)
Classroom 20h, 30h autonomous work (study)
Practical credits (4)
Classroom 40h, 60h autonomous work (practice)</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</td></tr>
</table>

GRAPHIC EXPRESSION 2 2021-22

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
PÉREZ LUQUE, GABRIEL	gabriel.perez@udl.cat	3	
RINCÓN VILLARREAL, LÍDIA	lidia.rincon@udl.cat	3	

Subject's extra information

The activity of the Technical Architect takes place largely to the field of projects either in the drafting and development, in its execution or in its subsequent operation and maintenance.

Since in this area, projects, information expressed graphically is often prioritized, it is essential that technical architect has a good knowledge in this communication language.

Basically the graphical expression must be used by the Technical Architect for the following purposes:

- First, as the way of expression between the Architect and third parties.
- Moreover, as a means of communication with himself, in the processes of design, in the research of alternative solutions.
- Finally, as a means of description and analysis of reality (making sketches and drawings of the current state of constructions, etc.).

It can therefore deduce that Graphic Expression is configured as a true universal graphic language.

Students will then begin to control their spatial vision, to be able to make fluently transfers from the three dimensions (real objects) to the two-dimensional (flat) and vice versa.

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.

Prerequisites:
There are no prerequisites for this subject.

Learning objectives

- Knowing the operating of tools, materials and techniques of graphic expression and use them correctly and in the right time.
- To know the current CAD systems and to learn working in this type of system, combining it appropriately with the traditional systems of graphic expression
- 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.
- Representation of perspectives to facilitate the interpretation of three-dimensional forms and spaces projected and / or designed.
- Value the graphic language (Expression Graphic) as a means of communication in the work environment of the Building Engineer
- Express them 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.
- Correctly apply the regulations governing the technical graphic expression (standardized lettering, dimensioning, etc.)
- Correctly apply the concept of scale of drawing, in order to spend from most general to details without loss of rigor in the transmission of information
- To learn the use of the freehand drawing and sketching as a fundamental means of expression in the creative process and in the realization of ideas and forms
- To do sketches of uprisings, both for sites and existing buildings as well as of construction details, which represent the most

important and significant elements. They must be understandable and proportionate as well as properly dimensioned and using the appropriate symbology.
- To know and to graphically specify the constructive solutions of different elements as well as the details of construction of a building project.

Competences

Significant competences

University of Lleida strategic competences

- UdL3. Mastering ICT's.

Degree-transversal competences

- EPS5. Capacity of abstraction and of critical, logical and mathematical thinking.

Degree-specific competences

- GEE3. 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.

Subject contents

- **Introduction**

  Theme 1. Freehand drawing. The sketch

  This theme introduces students to the freehand drawing as a means of immediate expression of ideas, as well as analysis and description of reality, both essential in the first stages of creation as well as during field collection data. Firstly a more free and artistic representation will be faced, the sketch, very useful in the creative phase in order to use a quickly transmission of ideas.

  Theme 2. freehand drawing. The sketch

  In a second stage of freehand representation, it will deepen learning sketch, a more technical freehand drawing, which can realize more accurately the designs as well as the existing reality, and it is usually used prior to the final representation.

  Moreover, the student begins the representation of constructive elements, typical of architectural constructions, specifying different solutions and details, while put into practice the knowledge acquired in previous stages of representation.

  Theme 3. Projects. CAD 3D (Revit)

  In parallel to the development of the above mentioned agenda, two of the four hours per week of the course, will be dedicated throughout the whole semester to learn a BIM system (Building Information Modeling), specifically REVIT, because it is the most widespread software in the field of architecture.

  The educational project imply that during the first weeks of the semester, coinciding with the themes of freehand drawing, will be engaged to know and learn REVIT drawing tool.

  Once acquired the basic knowledge on REVIT, the two hours will be connect to the other two hours in order to carry out all the practice exercises by mean REVIT.

  The educational project envisages that all classes of the subject will be made in computer classroom, since the practices of different themes (sketches, representing construction elements, and plans) will be completed in electronic format.

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.

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.

For the realization of by hand drawing practices, for example dihedral views exercises, axonometric representations as well as freehand and technical sketches; the work format will be primarily in A3 and A4.

For practical training by means computer drawing, in either 2D or 3D, students can work in the computer lab digital, which will have the necessary software updated.

The software currently used within the subjects of graphic expression, for the Degree in Architectural Technology and Building Construction, are AutoCAD and Revit, both from Autodesk.

Learning of these digital representation technologies requires many hours of practice, which is why many of the practices that should be developed by students must be done regardless of the hours of work available in the classroom, in understanding that this commitment involves already learning and therefore some time to study the subject.

Different deadlines for the practices will be established, in order to ensure a progressive learning of the subject, thus fulfilling the continuous training and evaluation.

TEACHING METHODS
Training activities
1. Lectures: In the lectures the contents of the subject are presented orally by a lecturer without the active participation of students.
2. Practices classroom / laboratory: Let you apply and configure a practical level, the theory of a field of knowledge in a particular context.
3. Assessment tests (examination)
4. Work: Individual and group
5. Study: Independent work of students to consolidate the concepts of the subject.
Evaluation systems
1. Written tests
2. Practical tests
3. Practices

Development plan

Week	Session content	To be explained at class	Deliverables
1	Introduction T1. Freehand drawing. Sketch. Previous concepts T2. Freehand drawing. Sketch	PR2.1_Sketch of Lleida	
	Revit C1 + Practice 1		
2	In-situ sketches of EPS indoors	PR2.2_SketchIMPIVA + Free sketches A/B	PR2.1_ Sketch of Lleida
	Revit C2 + Practice 2		
3	In-situ sketches of EPS indoors		PR2.2_SketchIMPIVA + Free sketches A/B
	Revit C2 + Practice 2		
4	T3. Freehand drawing. Technical sketches		PR2.2_ Free sketches A
	Revit C3 + Practice 2		
5	PR31_Technical sketch_Campus stairs (Data)	PR31_ Technical sketch_Campus stairs PR4_BIM project	PR2.2_ Free sketches B
6	PR31_ Technical sketch_Campus stairs (CAD)		
	Revit C4 + + Practice 4		
7	PR32_ Technical sketch _Classrooms building (Data)	PR32_ Technical sketch _Classrooms building	PR31_ Technical sketch_Campus stairs PR4_ BIM project (1st review)
	Revit C4 + + Practice 4		
8	PR32_ Technical sketch _Classrooms building (CAD)		

9	Assessment activity 1		
	Easter		
	Revit C4 + + Practice 4		
10	PR32_ Technical sketch _Classrooms building (CAD)	PR33_Your house	
	Revit C4 + PR4 BIM Project		
11	PR33_ Your house (CAD base)		PR32_ Technical sketch _Classrooms building PR4_BIM project (2nd review)
	UdL student's festivity		
12	PR33_ Your house (CAD base)		
	Revit C5 + PR4 BIM Project		
13	PR33_ Your house (CAD facilities)		
	Revit C5 + PR4 BIM Project		
14	PR33_ Your house (CAD facilities)		PR4_Projecto BIM (3rt review)
	Revit C6 + PR4 BIM Project		
15	PR33_ Your house (CAD facilities)		
	Revit C6 + PR4 BIM Project		
16,17	Assessment activity 2		PR33_ Your house PR4_ BIM project
18			
19	Recovery		

Evaluation

Evaluation

Monitoring and evaluation will be conducted according to a system of continuous assessment, where the final grade will consist of the sum of the percentages of different evaluation activities.

Recovery:

During the 19th week it can be recover / improve the grade of the subject, following the guidelines of the Academic Degrees Framework of EPS, through a recovery test, which will have equal value and content to the theoretical contents (50%).

Assessment activity	%	Dates
PR2.1. Sketch	5	Week 2
PR2.2. Sketch	10	Week 3, 4, 5
PR3.1. Technical sketches + CAD 2D	15	Week 7
PR3.2. Technical sketches + CAD 2D	20	Week 11
PR3.3. Technical sketches + CAD 2D	30	Week 17
PR4.CAD 3D	20	Week 17

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