

## 30707 - Architectural graphic expression 3

### Syllabus Information

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**Academic Year:** 2019/20

**Subject:** 30707 - Architectural graphic expression 3

**Faculty / School:** 110 -

**Degree:** 470 - Bachelor's Degree in Architecture Studies

**ECTS:** 6.0

**Year:** 1

**Semester:** Second semester

**Subject Type:** Basic Education

**Module:**

## 1.General information

### 1.1.Aims of the course

The main objective is the achievement, by the students, of the learning results and the acquisition of the competences foreseen for the course (see points 2.1 and 2.2).

In addition, the course pursues:

- to transmit the importance that graphic expression and geometry have in contemporary architectural design and, in general, in architecture, urbanism and design
- to foster interest and curiosity about new technologies and about computer-aided design
- to foster the capacity for autonomous learning through continued work and exploration
- to initiate the student in the development and presentation of their own ideas and designs
- to foster the team work

### 1.2.Context and importance of this course in the degree

As a practical course of the degree's first year, the fundamental meaning of EGA 3 is to teach the knowledges and skills necessary for a proper graphical communication in architecture. The introduction to these contents takes place in the previous semester in the EGA 1 and EGA 2 courses; and continues in the second semester in EGA 3, EGA 4 and Analysis of Forms. As a special feature, EGA 3 introduces students to the use of computer-aided design tools. In the second year, students will face the first two courses of Architectural Design, where graphic expression has an important weight and the skills acquired in the courses of Architectural Graphics will be required.

### 1.3.Recommendations to take this course

Academic recommendations: EGA 1 and EGA 3 are consecutive courses and their contents are related, therefore it is recommended to have completed EGA 1 before EGA 3.

The student is advised to approach the course with a proactive attitude, curiosity and willingness to learn, since a certain capacity for autonomous learning through continuous work and exploration is expected of him. This course, like any university course, requires regular dedication, work discipline and time management capacity.

Technical recommendations: Students are recommended to work in practical sessions with their own laptop, and to have installed the newest versions of the software used in the subject. The teachers will focus their explanations about its use in Windows OS, therefore users of other operating systems will have to assume the differences that may exist.

## 2.Learning goals

### 2.1.Competences

In addition to the basic (CB1, CB2), general (CGG7) and transversal competences (CT2, CT4), established for the subjects of the Area of Architectural Graphics, EGA 3 deals with the following SPECIFIC COMPETENCES:

- "*CE2OB - Aptitud para concebir y representar los atributos visuales de los objetos y dominar la proporción y las técnicas del dibujo, incluidas las informáticas. (T)*"

- "CE3OB - Conocimiento adecuado y aplicado a la arquitectura y al urbanismo de los sistemas de representación espacial."
- "CE6OB - Conocimiento adecuado y aplicado a la arquitectura y al urbanismo de: Las técnicas de levantamiento gráfico en todas sus fases, desde el dibujo de apuntes a la restitución científica."

## 2.2.Learning goals

As indicated by the memory of the study, the learning goals of the course are:

- "Capacidad de representación espacial y capacidad de resolver ejercicios prácticos en proyecciones tridimensionales o diseño asistido por ordenador."
- "Capacidad de resolver ejercicios de representación de figuras tridimensionales geométricas, calcular intersecciones y dibujar sombras, en sistema axonométrico, cónico y CAD 3D."

## 2.3.Importance of learning goals

Those learning goals have a direct application in most of the degree's courses, as well as in the architectural professional practice. The use of computer aided design, on which the course is based, provides the student with up-to-date technological competences in the discipline.

## 3.Assessment (1st and 2nd call)

### 3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

The courses of Architectural Graphics includes the following assesment tasks:

- 1.- Written / graphic exam (30% - 15%)
- 3.- Non-attendance, tutored projects, without presentation (15% - 30%)
- 4.- Tutored works (20% - 40%)
- 5.- Practice exercises (35% - 15%)

The student will be assessed through a CONTINUED ASSESSMENT system, based on the completion of several practice exercises [5] and tutored works [4] throughout the semester, which will be marked in a weighted manner (in sum, up to 75% of the qualification). The practice sessions (3 hours/week) will be used for the development of those works, which students may be required to deliver at the end of any session, in digital format, for their assessment. In some cases, students may also be required to deliver them in print format (with a previous notification of the delivery date).

The qualification will be completed with an exam [1] or final project [3], which will take place / be delivered after the end of the teaching period.

The student not following a the continued evaluation may opt for a FINAL ASSESSMENT, based on a global exam of all the course's contents, which will take place once the teaching period has ended and will be scheduled by the school. Its mark will constitute the complete assessment of the course.

The second call (September) is also based on a FINAL ASSESSMENT, consisting of a global exam which will take place following the school's official scheduling.

The assessment criteria are based on:

- the correct follow-up of the requirements
- the appropriate application of the concepts and methods presented in the theory sessions
- the correct resolution of drawings and models, avoiding geometric or conceptual errors
- the level of detail and complexity of the designs made
- the correct graphic presentation, taking into account aspects such as line value, order and composition, use of color, typography, etc.
- the proper management of computer tools, including the order and clarity of the digital material developed.

The levels of demand are adapted to the students' previous experience and knowledge, assuming that they have already completed the two EGA courses of the first semester (EGA 1 and EGA 2) and that their knowledge and skills have been acquired; taking however into account that this is a first-year course and the competences in Architectural Graphics still have to be completed. In order to pass the course, students have to prove having acquired the specific skills detailed in point 2.2. at a sufficient level.

## 4.Methodology, learning tasks, syllabus and resources

### 4.1.Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. It is based on the following methodologies

- M1 - Theory session
- M2 - Seminar

- M3 - Workshop
- M10 - Tutorial
- M11 - Assessment

that favor the development/acquisition of CE2OB, CE3OB and CE6OB (see 2.1 "Competences"). A wide range of teaching and learning tasks are implemented (see 4.2 "Learning tasks").

The subject is based on the combination of a guided teaching and an autonomous learning by the student. Its orientation is eminently practical: both the theory sessions and the practice sessions are aimed at the acquisition, by the student, of applied drawing skills. Teaching is based on computer tools, not only through the use of computer-aided design tools, but also from a didactic point of view, with materials disposable via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials, including a discussion forum.

Apart from the theory and practice sessions, students have also the possibility of attending tutorials, that can be arranged with the teacher (provided appointment) based on specific academic needs.

Students are expected to participate actively in the class throughout the semester. Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials, including a discussion forum. Further information regarding the course will be provided on the first day of class.

## 4.2.Learning tasks

This is a 6 ECTS course organized with the following learning tasks:

- A01 Theory sessions
- A02 Seminar
- A09 Practice sessions
- A11 Practice sessions
- A13 Applied works

## 4.3.Syllabus

The course will address the following topics:

- 2D computer aided design

Teaching-learning methodologies: M1, M2, M3, M10, M11  
Related to competences: CE1OB, CE2OB, CE3OB, CE5OB, CE6OB

- Conical and axonometric representation system

Teaching-learning methodologies: M1, M2, M3, M10, M11  
Related to competences: CE1OB, CE2OB, CE3OB, CE5OB, CE6OB, CE9OB

- 3D computer-aided design (includes a part of photorealistic image generation)

Teaching-learning methodologies: M1, M2, M3, M10, M11  
Related to competences: CE1OB, CE2OB, CE3OB, CE5OB, CE6OB, CE9OB

## 4.4.Course planning and calendar

The course is organized in 1-hour/week theory sessions and 3-hour/week practice sessions. For the former there is only one division between group of mornings and group of afternoons, and for the second ones a more detailed division is made in groups of practices, each directed by a teacher.

The contents explained in the theory classes will be temporarily adapted to the contents worked on in the practices, so that the practices can be carried out based on the contents already explained.

The temporary distribution of the contents throughout the semester will be approximately the following:

- 2D computer-aided design: 4-6 weeks
- Conical and axonometric representation system: 2-4 weeks
- Computer-aided 3D design: 4-6 weeks

Due to festivities, there is sometimes a weekly lag between practice groups, which may affect the dates of delivery of work (they may be in different weeks for different groups). The school adjusts the calendar if necessary to ensure that the total number of sessions is the same for all groups (see <https://eina.unizar.es/calendarios/>).

All sessions (both theory and practice) will take place in the schedule and classroom assigned by the centre. Throughout the semester, delivery deadlines will be set (notified in the classroom and via Moodle). The final assessment dates (June and September call) will be those assigned by the school, and can be consulted in the exam calendar of the current academic year.

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to Moodle.

#### 4.5. Bibliography and recommended resources

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials.

Additionally, the consultation of the official help guides of the different computer tools used in the course is suggested.

Below are some titles available in the library that can also help the student. They are a guidance, other titles can also be useful.

Albert Ballester, J., Querol Romero, V., Albert Pardo, J. (2014) Geometría para la arquitectura: ejercicios de superficies y volúmenes. Valencia: UPV  
ISBN: 9788483639818. Signatura Hypatia: EGA 109

Bassler, B. (ed) (2008). Architectural graphic standards: student edition. Hoboken, N.J. : John Wiley & Sons, cop.  
ISBN: 9780470085462. Signatura Hypatia: EGA 11(3)

Bielefeld, B., Skiba, I. (2010). Dibujo técnico. Barcelona : Gustavo Gili.  
ISBN: 9788425222955. Signatura Hypatia: EGA 10(1)

Ching, F. D. K. (2016). Manual de dibujo arquitectónico (5ª ed). Barcelona : Gustavo Gili.  
ISBN: 9788425229268. Signatura Hypatia: EGA 8. Disponible también como e-book.

Ching, F. D. K. (2012). Dibujo y proyecto. Barcelona : Gustavo Gili.  
ISBN: 9788425225079. Signatura Hypatia: DIBU 30

Esteban Maluenda, I. (2007). Curso de AutoCAD para arquitectos. Barcelona : Reverté.  
ISBN: 9788429121131. Signatura Hypatia: EGA 44(1)

Estepa Rubio, A. (2014). SketchUp + V-Ray : técnicas gráficas de producción en infoarquitectura. Villanueva de Gállego (Zaragoza) : Ediciones Universidad San Jorge  
ISBN: 9788494289521. Signatura Hypatia: EGA 94(1)

Farrelly, L. (2008). Técnicas de representación. Barcelona : Promopress.  
ISBN: 9788493588144. Signatura Hypatia: EGA 25(1)

Galcerán Vila, M. (2013) Representación arquitectónica: elaboración de planos. Madrid : Delta  
ISBN: 9788415581277. Signatura Hypatia: EGA 69(1)

Girón Sierra, J. (2008). Lecciones de dibujo, (I). Estructura formal I: por dónde empezar a construir un dibujo de arquitectura. Madrid : Instituto Juan de Herrera.  
ISBN: 9788497281737 (O. C.); 9788497281737 (V. I). Signatura Hypatia: EGA 104(1), EGA 104(2)

Goitia Cruz, A. (2001). Temas de Dibujo 3. Introducción al Sistema: Planta-Sección-Alzado y Escalas. Madrid : Instituto Juan de Herrera.  
ISBN: 849728013X (O. C.), 8497280148. Signatura Hypatia: EGA 103(1); EGA 103(2)

Guerra Rubio, Daniel (2012). Esto no es un manual V-Ray. Madrid : Maireia  
ISBN: 9788492641567. Signatura Hypatia: EGA 71(1)

Izquierdo Asensi, Fernando (2005) Ejercicios de geometría descriptiva. Tomo III, Sistema axonométrico. Madrid : El autor, D. L.  
ISBN: 8492210931 (o. c.), 9788493366827. Signatura Hypatia: DIBU-PR 22(1)III; DIBU-PR 22(2)III, DIBU-PR 22(3)III

Izquierdo Asensi, Fernando (1997) Ejercicios de geometría descriptiva. Tomo IV, Sistema cónico. Madrid : El autor, D.L.  
ISBN: 8492210931 (O. C.), 8492210923. Signatura Hypatia: DIBU-PR 22(1)IV, DIBU-PR 22(2)IV, DIBU-PR 22(3)IV, DIBU-PR 22(4)IV, DIBU-PR 22(5)IV

Minguet, J. M. (2006) Sketch Casas. Barcelona : Monsa  
ISBN: 8496429687. Signatura Hypatia: EGA 2(1)

Porter, Tom (1990) Architectural drawing. New York : Van Nostrand Reinhold, cop.  
ISBN: 0442303041. Signatura Hypatia: EGA 74(1)

Pottman, H. et al. (2007). Architectural geometry. Exton-Pennsylvania : Bentley Institute Press  
ISBN: 9781934493045. Signatura Hypatia: EGA 64(1)

Rodríguez de Abajo F.J. (2012). Geometría descriptiva. Tomo III. Sistema axonométrico. Editorial Donostiarra.  
ISBN: 8470631705. Signatura Hypatia: DIBU 39

Rodríguez de Abajo, F. J. (2007) Geometría descriptiva. T. 5, Sistema cónico. San Sebastián : Editorial Donostiarra  
ISBN: 9788470630507. Signatura Hypatia: DIBU 41

Sainz, J., Avia J.S. (2005). El dibujo de arquitectura. Barcelona: Reverté  
ISBN: 9788429121063. Signatura Hypatia: EGA 7(1); EGA 7(2); EGA 7(3)

Schillaci, Fabio (2010) Architectural renderings: construction and design manual. Chichester (United Kingdom): John Wiley & Sons  
ISBN: 9780470664100. Signatura Hypatia: EGA 31(1)

Sondermann, H. (2009). Photoshop in architectural graphics. Wien; New York: Springer, cop.  
ISBN: 9783211715918. Signatura Hypatia: EGA 39(1)

Yee, Rendow (2007) Architectural drawing: a visual compendium of types and methods. New York: John Wiley & Sons, cop.  
ISBN: 9780471793663. Signatura Hypatia: EGA 28(1)

Zell, M. (2009). Curso de dibujo arquitectónico. Barcelona : Acanto.  
ISBN: 9788495376909. Signatura Hypatia: EGA 16(1); EGA 16(2)