

Academic Year/course: 2022/23

## 30758 - Cartographic methods for the city and the territory

### Syllabus Information

---

**Academic Year:** 2022/23

**Subject:** 30758 - Cartographic methods for the city and the territory

**Faculty / School:** 110 - Escuela de Ingeniería y Arquitectura

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

**ECTS:** 6.0

**Year:** 5

**Semester:** Second semester

**Subject Type:** Optional

**Module:**

## 1. General information

### 1.1. Aims of the course

- That the student has a training in advanced and specific graphic expression in his chosen path.
- That the student receives training in graphic expression applied to the developed works.
- That the student works with specialized computing tools in the urban and landscape graphic representation, particularly those linked to the GIS.

*These approaches and objectives are in line with the following Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/es/>), in such a way that the acquisition of the course learning outcomes provides training and competence to contribute to their achievement to some degree.*

- ODS 5. Achieve gender equality and empower all women and girls

5.1 End all forms of discrimination against all women and girls everywhere

- ODS 8. Promote inclusive and sustainable economic growth, employment and decent work for all

8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors

- ODS 9. Build resilient infrastructure, promote sustainable industrialization and foster innovation

9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

- ODS 11. Make cities inclusive, safe, resilient and sustainable

11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage

11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

- ODS 12. Ensure sustainable consumption and production patterns

12.2 By 2030, achieve the sustainable management and efficient use of natural resources

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

This subject is into the itinerary 'Proyecto urbano y paisaje' of the degree and it is imparted, and it is imparted in the last year of the degree, so the student has already mastered the fundamentals of the urban discipline, architectural graphic expression and the management of several computing tools.

It is a transversal subject, in which two different knowledge areas participate: Architectural and Urban Graphic Expression

and Territorial Planning. The two areas involved operate in parallel and with the students themselves, to contribute to obtaining analytical and purposeful criteria about the city and the territory, as well as the tools necessary to intervene in them. The aim of the subject is twofold: on the one hand, to know new ways of reading and understanding the city and the territory; on the other, we provide the necessary tools for analysis, focused on both traditional and advanced representation techniques.

### 1.3. Recommendations to take this course

Mapping Urbanism is an elective course of six ECTS credits, which is offered in the Bachelor Studies in Architecture at the University of Zaragoza, in the line of intensification of Landscape and Urban Design. It is recommended as a supplement to this course, to take the elective courses of ~~Cultural Landscapes~~ and Landscape Urbanism.

## 2. Learning goals

### 2.1. Competences

- To manage and interpret current and historical urban graphic documents.
- To work with actually graphic representation computer tools.
- To interpret and employ the most common standard graphics; and to plan personal graphic strategies to the specific projects.
- Master different ways to represent maps and the associated information and representation.
- To analyze, manage and interrelate graphic documents from several sources and different scales, and integrate it graphically in the projects.
- CE81OP: Adequate knowledge of urban planning, landscape and urban projects (T)
- CE103OP: Adequate knowledge of the relationships between urban planning, the environment, spatial planning (T)
- CE104OP: Knowledge of urban ecosystems (T)
- CE105OP: Ability to virtually recreate urban and architectural spaces, representing advanced scenes, with the application of lights, materials and virtual tours (T)
- C.E. 106.OP: Ability to use high performance graphic elements with direct connectivity with calculation of structures, calculation of lighting, acoustics and facilities (T).

### 2.2. Learning goals

- The student knows the fundamentals of graphic representation oriented to the urban and landscape project, with its specific characteristics, making a historic tour to the most representative maps.
- The student knows the different handmade and current computer techniques.
- The student is capable of read and employ the most common standard graphics; at the same time, is capable of planning his own graphics strategies to the specific projects.
- The student domains the different ways to represent the maps and the kind of information and the associate representation to each one. Domains the different kinds to representation (plans, sections, diagram, etc.) and the kind of information associated to each one.
- The student is capable of analyze, manage and interrelate graphic documents of several sources and different sizes, and integrate them graphically in his projects.

### 2.3. Importance of learning goals

The importance of the learning outcomes of this course is to obtain analytical and proactive urban and landscape environmental criteria, as well as the provision of the necessary tools for its graphic realization. Additionally, it is a student's level of specialization that distinguishes Zaragoza's curriculum compared to other Spanish and European studies and facilitate their entry into the job market.

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

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

The overall assessment of the student is made according to the following method:

Assessment will be based on the practical contents. It consists of two parts:

- The individual exercises of class on Geographic Information Systems (GIS).
- An individual cartographic project and its oral presentation, based on a topic proposed by the teachers at the beginning of the course and agreed with each of the students. Throughout the development of the subject, the development of this project

will be monitored.

#### *Assessment of non-face students*

Students who cannot attend classes during the semester must submit the required work to other students in the evaluation date indicated by the center and make a test. The work submitted and the test will be 100% of the course score.

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

### **4.1. Methodological overview**

The learning process is mainly based on the student's own work, supervised and advised by the teacher. Since the student is in the final year of the degree, he is expected to have a certain level of expertise and initiative enough for autonomous management. However, the teacher monitors the student work during the practical sessions. Moreover, the theory sessions provide the necessary resources to the satisfactory development of the practical work.

### **4.2. Learning tasks**

The course is divided into 1h theoretical sessions and 3h practical workshop sessions throughout the semester.

The practical sessions are based on a personal work developed by the student and achieved through personalized and intensive coaching. The student works with his computer.

The theoretical sessions provide essential learning tools and the necessary content for the student to develop their final project.

### **4.3. Syllabus**

After an introduction to the basic tools for mapping, the course is developed in three blocks. The first one, 'Mapping urban forms' consider different traditions of mapping socioecological systems, its morphology, patterns and processes. The second one, 'Advanced Mapping' is focused on new techniques of Urban Mapping. The third one, 'Mapping landscape urbanism plans and projects', analyzes ways of representation in these sub disciplines.

In parallel, special work will be done on Geographic Information Systems (GIS), useful for preparing complex analyzes of the urban environment and the landscape, learning how to handle it in the practical part of the subject through the use of free open source software (QGIS).

### **4.4. Course planning and calendar**

A flexible teaching methodology based on active and cooperative learning of students is proposed, through the combination of various didactic models. The theoretical sessions are proposed as participatory lectures that will be developed for all the students and that, as far as possible, will be adapted to their interests. The practice sessions will consist of workshop, in which you will work in the classroom with the support of the teaching staff. Autonomous and supervised work is proposed since in these sessions the teacher will exercise a guiding role, in such a way that he will advise and accompany the student in the search and development of a path on which to investigate. In this process, the participation of the rest of the students will be encouraged through a critical and purposeful spirit.

As for the Geographic Information Systems (GIS), it is considered important to transmit the fundamentals of the tool and not only its use, in order to understand both its philosophy, its possibilities and its limits. It is about implementing an operational teaching capable of showing the underlying logic in the work methodology and allowing students to discover the transformations that it is capable of generating in the reading, understanding and ideation of reality, avoiding the mere mechanical application of the tool.

There is no theoretical exam. Both the exercises and the course project will be delivered on the date assigned for the final evaluation test.