



Course guide

310751 - 310751 - Urbanisation Projects

Last modified: 17/10/2023

Unit in charge: Barcelona School of Building Construction
Teaching unit: 753 - TA - Department of Architectural Technology.

Degree: BACHELOR'S DEGREE IN ARCHITECTURAL TECHNOLOGY AND BUILDING CONSTRUCTION (Syllabus 2019).
(Optional subject).

Academic year: 2023 **ECTS Credits:** 3.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: Marta Batlle Beltrán

Others: Marta Batlle Beltrán

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

- FB-08. FB-8 Basic knowledge of the legal regulations of the Public Administration and the procedures of public and private procurement.
- FE-01. FE-1 Ability to understand and make the graphical documentation of a project, to do data gathering, surveying of plans and geometric control of construction units.
- FE-02. FE-2 Knowledge of the infographic and cartographic procedures and methods in the construction field.
- FE-03. FE-3 Ability to work with the topographic tools and proceed to the graphical survey of plots and buildings, and its setting in the plot.
- FE-05. FE-5 Ability to adapt the construction materials to the typology and use of the building, manage and run the receipt and quality control of the materials, its implementation in the construction, the control of execution of the construction units and the realization of trials and final tests.
- FE-07. FE-7 Ability to identify the constructive elements and systems, define its function and compatibility, and its implementation to construction in the construction process. Plan and solve constructive details.
- FE-08. FE-8 Knowledge of specific procedures for the material execution control of the construction.
- FE-12. FE-12 Knowledge of the evaluation of the environmental impact of the construction and demolition, the sustainability in the construction, and the procedures and techniques to evaluate the energetic efficiency of the buildings.
- FE-13. FE-13 Ability to apply the technical regulation to the construction process, and generate documents of technical specification in the constructive procedures and methods of buildings.
- FE-14. FE-14 Aptitude to apply the specific regulations about facilities in the construction process.
- FE-16. FE-16 Ability to develop constructively the facilities of a building, control and plan its execution and verify the service and receipt trials, as well as its maintenance.
- FE-17. FE-17 Ability to schedule and organise the constructive processes, the construction teams, the technical and human means for its execution and maintenance.
- FE-19. FE-19 Aptitude to write studies, basic studies and safety and occupational health plans, and coordinate the safety in the project phase or in the construction execution phase.
- FE-20. FE-20 Ability for the management of the quality control in the building constructions, the writing, application, implementation and updating of manuals and quality plans, realisation of audits of management of the quality in the companies, as well as for the writing of the Building Log Book.
- FE-22. FE-22 Knowledges of the organisation of the professional work and studies, offices and professional societies, the regulations and rules related with the functions which the Building Engineer develops and the responsibility framework associated to the activity.
- FE-23. FE-23 Ability to draft and calculate basic prices, auxiliary prices, single and split prices of the construction units; analyse and control the costs during the construction process; make budgets.
- FE-26. FE-26 Knowledge of the framework of regulation of the management and the urban discipline.
- FE-28. FE-28 Aptitude to write technical projects of constructions, which don't require architectural projects, as well as projects of demolition and design.
- FE-29. FE-29 Aptitude to write documents which are part of execution projects made in a multidisciplinary form
- FE-30. FE-30 Ability of analysis of the execution projects and their transfer to the execution in constructions.
- FE-31. FE-31 Knowledge of the functions and responsibilities of the agents which intervene in the construction and their professional or managerial organisation, as well as the administrative, managerial and processing procedures.
- FE-32. FE-32 Knowledge of the professional organisation and the basic procedures in the construction field and the promotion.

Transversal:

- 01 EIN N3. ENTREPRENEURSHIP AND INNOVATION - Level 3. Using knowledge and strategic skills to set up and manage projects. Applying systemic solutions to complex problems. Devising and managing innovation in organizations.
- 02 SCS N2. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 2. Applying sustainability criteria and professional codes of conduct in the design and assessment of technological solutions.
- 04 COE N3. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.
- 05 TEQ N2. TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.
- 06 URI N3. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.
- 07 AAT N2. SELF-DIRECTED LEARNING - Level 2: Completing set tasks based on the guidelines set by lecturers. Devoting the time needed to complete each task, including personal contributions and expanding on the recommended information sources.
- 07 AAT N3. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.
- 02 SCS. SUSTAINABILITY AND SOCIAL COMMITMENT. Being aware of and understanding the complexity of social and economic phenomena that characterize the welfare society. Having the ability to relate welfare to globalization and sustainability. Being able to make a balanced use of techniques, technology, the economy and sustainability.

TEACHING METHODOLOGY

The face-to-face and autonomous methods will be combined. With the combination of the two methods the levels of knowledge, understanding and application must be achieved.

In the face-to-face method, special attention will be paid to the aspects of clarity, precision and order by the teachers and they will be done with the whole group. The teacher will develop the course topics in the classroom. Students will have been provided with the necessary PDF documentation at ATENEA in order to better follow the class. As autonomous self-learning, students must carry out a series of activities that must be documented and delivered to the ATENEA space for evaluation.

LEARNING OBJECTIVES OF THE SUBJECT

At the end of the course, the student must be able to:

1. Evaluate the different models of plots that are developed with the different layouts of public roads.
2. Contrast the different geometric shapes of the meshes.
3. Organize all the infrastructures and their compatibility.
4. Classify the type of machinery to be used in the movement of earth and in the formation of the esplanade, by selecting their capacities, their functions and the type of work they are capable of performing.
5. Critically evaluate the different subbase compositions.
6. Explain in writing the construction process in the placement of the sidewalks, tapes and rigolas.
7. Critically evaluate the different types of finish and unique elements, comparing their properties and / or characteristics.
8. Classify gardening elements according to the climate and indigenous species in the area.
9. Design the pavements according to the functional definition of the urban road and the level of heavy traffic.
10. Explain in writing the construction process for the execution of the trenches for facilities and the coordination between them.
11. Design adequately the crossings of the facilities in the urbanizations.
12. Select from a range of different manholes for urban facilities that meet the technical specifications.
13. Recognize the compatibility and / or incompatibility that exists in the distribution of networks, through the resolution of different cases.
14. List the different materials to be used according to the type of installation.

STUDY LOAD

Type	Hours	Percentage
Hours large group	30,0	40.00
Self study	45,0	60.00

Total learning time: 75 h

CONTENTS

DESIGN CRITERIA FOR URBANIZATIONS

Description:

This content works on:

- 1 Introduction and concept of Urbanization.
- 2 Definition of the concept of place and services.
- 3 Different models that can be developed for all types of plots.
- 4 Types of infrastructures, services and collective facilities.
- 5 Application regulations

Specific objectives:

At the end of the internship the student must be able to:

- Interpret the methodology to be used in the formation of the esplanade and paving.
- Determine how control of the esplanades is carried out.
- Analyze and solve the construction systems for the execution of drains.

Related activities:

Activity 1

Full-or-part-time: 5h

Theory classes: 3h 35m

Self study : 1h 25m

EXECUTION OF URBANIZATION WORKS

Description:

This content works on:

- 1 Definition of works, earthworks and esplanade formation.
- 2 Construction of the granular subbase, sidewalks, curbs and gutters, paving
- 3 Signage.
- 4 Gardening.
- 5 Application regulations.

Specific objectives:

At the end of the activity, students must be able to:

- Classify gardening elements according to the climate and native species of the area.
- Differentiate the different signaling elements analyzed.
- Analyze the different construction elements of paving

Related activities:

Activities 2 and 3

Full-or-part-time: 11h 35m

Theory classes: 8h

Self study : 3h 35m

EXECUTION OF FACILITIES IN THE URBANIZATION

Description:

This content works on:

- 1 Criteria and implementation of sanitation networks and services.
- 2 Criteria and implementation of water distribution networks and services.
- 3 Criteria and implementation of fire protection networks and services.
- 4 Criteria and implementation of public lighting networks and services.
- 5 Criteria and implementation of electricity networks and services.
- 6 Criteria and implementation of telephone networks and services.
- 7 Criteria and implementation of gas installation networks and services.
- 8 Criteria and implementation of networks and services of irrigation facilities.
9. Application regulations

Specific objectives:

At the end of the activity, the student must be able to:

- 1 Know the materials to be used in the networks.
- 2 Determine all connection items and boxes.
- 3 Recognize the compatibility and / or incompatibility that exists in the distribution of networks
- 4 Explain in writing the construction process for the execution of the trenches for facilities and the coordination between them.
- 5 Adequately design the crossings of the facilities in the urbanizations.
- 6 Explain in writing the construction process of the facilities in Urbanization.
- 7 Recognize the compatibility and / or incompatibility that exists in the distribution of networks.
- 8 List the different materials to be used according to the type of installation.

Related activities:

Activities 4 and 5

Full-or-part-time: 11h 12m

Theory classes: 8h

Self study : 3h 12m

GRADING SYSTEM

Continuous evaluation will be done. Continuous assessment consists of doing different activities, in this case a group, of an additive and formative nature, carried out during the course (inside the classroom and outside it).

The final grade is the sum of the following partial grades:

Activity-1 10%

Activity-2 30%

Activity-3 10%

Activity-4 35%

Activity-5 15%

BIBLIOGRAPHY

Basic:

- Eduard Alabern i Valentí.. Execució, Inspecció i Control d'obres de Urbanització Generalitat de Catalunya- Departament Política territorial i obres Públiques. Direcció general de Urbanisme..
- Eduard Alabern i Valentí. Infraestructuras Urbanas.
- Orden de 14/05/1990 por la que se aprueba la Instrucción de carreteras 5.2-IC "Drenaje superficial" (BOE 23/05/1990).
- J. Martinez; M. Medina y M.A. Herrero. Árboles en la Ciudad. Mº de Obras Publicas, 1992.
- Orden 27/12/1999, Norma 3.1-IC. "Trazado, de la Instrucción de carreteras" (BOE 2/02/2000).
- UNE-EN-124 1995. Dispositivos de cubrimiento y de cierre para zonas de circulación utilizadas por peatones y vehículos. Principios de construcción, ensayos de tipo, marcado, control de calidad. .
- Real Decreto Legislativo 1/2013, de 29 de noviembre, por el que se aprueba el Texto Refundido de la Ley General de derechos de las personas con discapacidad y de su inclusión social. Real Decreto 505/2007, de 20 de abril, por el que se aprueban las condiciones básicas de accesibilidad y no discriminación de las personas con discapacidad para el acceso y utilización de los espacios públicos urbanizados y edificaciones.
- Real Decreto 1890/2008 Reglamento de eficiencia energética en instalaciones de alumbrado exterior y sus instrucciones técnicas complementarias EA-01 a EA-07. (BOE 19/11/2008).
- Pliego de prescripciones técnicas generales para obras de carreteras y puentes Pg-3. M. de Fomento,
- Nou llibre.
- Orden FOM/3460/2003, de 28 de noviembre, por la que se aprueba la norma 6.1-IC "Secciones de firme", de la instrucción de Carreteras. (BOE 12/12/2003) .
- Llei 6/2001, d'ordenació ambiental de l'enllumenat per a la protecció del medi ambient (DOGC 12/06/2001) .
- Instrucción para el dimensionamiento de firmes y carreteras. Normas 6.1 y 6.2-1C . M. de Fomento,
- M. Wright. Guía completa del jardín.. Editorial Blume, 1979.
- L. Felipe Manchon y Juan A. Santamara . Recomendaciones para el proyecto y diseño del viario urbano. M. de Fomento,
- Consejo Superior de los Colegios de Arquitectos de España. Guía para la redacción de proyectos de Urbanización..
- Real Decreto 842/2002 por el que se aprueba el Reglamento Electrotécnico de Baja Tensión, ITC-BT-09 Instalaciones de alumbrado exterior. (BOE 18/09/2002).
- The Royal Horticultural Society. Enciclopedia de Jardinería. Editorial Grijalbo, 1994.
- DECRET 344/2006, de regulació dels estudis d'avaluació de la mobilitat generada.
- Genèric d'instal·lacions urbanes Decret 120/1992 del Departament d'Indústria i Energia de la Generalitat de Catalunya: Característiques que han de complir les proteccions a instal·lar entre les xarxes dels diferents subministraments públics que discorren pel subsòl. (DOGC núm. 1606 de 12/06/1992) Decret 196/1992 del Departament d'Indústria i Energia de la Generalitat de Catalunya pel que es modifica l'apartat a) del preàmbul i el punt 1.2 de l'article 1 del Decret 120/1992. (DOGC núm. 1649 de 25/09/1992) Ordenança d'obres i d'instal·lacions de serveis en el domini públic municipal de la ciutat de Barcelona. (BOP 22/05/1991) Especificacions Tècniques de les companyies subministradores dels diferents serveis..
- F. Naves. El Árbol, en jardinería y paisajismo. Ediciones Omega, 1995.
- The Royal Horticultural Society. Enciclopedia de Plantas y Flores. The Royal Horticultural Society, 1990.
- Ordenança d'obres i d'instal·lacions de serveis en el domini públic municipal de la ciutat de Barcelona. (BOP núm. 122 de 22/05/1991) Afectat per: Modificació (28/10/1994) Derogacions (18/03/2002) Ordenança reguladora del procediment sancionador (26/03/2010).