

Course guide

310706 - 310706 - Workshop 1: Learning From Traditional Construction

Last modified: 29/06/2024

Unit in charge: Barcelona School of Building Construction
Teaching unit: 753 - TA - Department of Architectural Technology.
752 - RA - Departamento de Representación Arquitectónica.
756 - THATC - Department of History and Theory of Architecture and Communication Techniques.
748 - FIS - Department of Physics.
749 - MAT - Department of Mathematics.

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

Academic year: 2024 **ECTS Credits:** 4.5 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: Montserrat Bosch, Ramon Graus

Others: Teresa Navas, Toni Guillamón, Blas Echebarria, Pere Mon, Judith Ramírez, Alina Avellaneda, Romà Crespiera

PRIOR SKILLS

High school diploma knowledge on physics, maths and chemistry. Technical drawing knowledge.

REQUIREMENTS

Given that to carry out the workshop it is necessary to visit the buildings under study, it is essential that the student body has contracted the compulsory and automatic insurance at the time of enrollment. Those over 28 years of age do not have this university insurance so they must have their own.

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

FE-06. FE-6 Knowledge of the historical evolution of the constructive techniques and elements and the structural systems which have led to stylistic forms.

Transversal:

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.

04 COE. EFFICIENT ORAL AND WRITTEN COMMUNICATION. Communicating verbally and in writing about learning outcomes, thought-building and decision-making. Taking part in debates about issues related to the own field of specialization.

05 TEQ. TEAMWORK. Being able to work as a team player, either as a member or as a leader. Contributing to projects pragmatically and responsibly, by reaching commitments in accordance to the resources that are available.

06 URI. EFFECTIVE USE OF INFORMATION RESOURCES. Managing the acquisition, structure, analysis and display of information from the own field of specialization. Taking a critical stance with regard to the results obtained.

07 AAT. SELF-DIRECTED LEARNING. Detecting gaps in one's knowledge and overcoming them through critical self-appraisal. Choosing the best path for broadening one's knowledge.

TEACHING METHODOLOGY

The teaching philosophy of the workshop is based on the learning of the students doing individual assessments and the development of teamwork projects. It will be used a methodology based on the active learning, using teamwork as a collaboration system among the students and also with the professors.

The teamwork project doesn't hold back the individuality of the team members, therefore, learning is also done and evaluated individually.

LEARNING OBJECTIVES OF THE SUBJECT

The general objective of the subject is to introduce students to the world of construction through experimentation, recognition, identification and reflection.

Specific objectives:

- 1) identify and know the constructive fact, the vocabulary proper to the profession, the boundary conditions and the technological and cultural context that give meaning to the buildings.
- 2) Apply and experiment with the available tools, software, tooling and laboratory tools applicable to building and construction
- 3) Analyze a building under different parameters; know how to apply acceptance and rejection criteria

The objectives of the subject are also: to facilitate the relationship between students and to become familiar with the building; assume responsibilities and course planning; provide and evaluate the levels of oral, written and graphic expression

STUDY LOAD

Type	Hours	Percentage
Hours small group	45,0	40.00
Self study	67,5	60.00

Total learning time: 112.5 h

CONTENTS

Unit 1 identify and recognize

Description:

On this first unit the students will come close to a traditional building from different area of knowledge: history, construction and materials. Besides this first reading of identification and contextualization, by means of graphical expression tools, it will be carried out the information gathering and move it on to a set of planes which will work as a base for the workshop.

Specific objectives:

To identify a building from different perspectives: social, historical, technological and material.

To use the appropriate language of the knowledge field.

To work with autonomy and with the graphical representation systems typical of the architecture and construction.

Related activities:

Activity 0 Elaboration of a presentation document of the student itself, by ATENEA

Activity 1 Identification of the geographical, territorial and urbanistic context of the building

Activity 2 Identification and recognition in site of the construction system and of the building materials

Activity 3 Elaboration of a graphic document which will work as a base for the application and experimentation.

Full-or-part-time: 50h

Theory classes: 7h 30m

Practical classes: 12h 30m

Self study : 30h

Unit 2 Apply and experiment

Description:

Based on the information gathered during Unit 1, students will begin to apply and experiment with different tools related to construction. From the historical knowledge they will analyze typologically the building and identify specific elements, invariant and repetitive. From the mechanics and structures field they will analyze the structural behaviour of the building and will make an intuitive reading. From the materials knowledge and their characteristics they will experiment at the laboratory. And with the incorporation of the physics and maths contents, it will be included on the software and the simulation applied to construction.

Specific objectives:

To analyze tipologically a building.

To interpret the structural systems of the building and the mechanical characteristics of the materials the building is made of.

To practice at the laboratory the different characteristics of the typical construction materials of the traditional constructions.

To get close to the propagation systems applied to building.

Related activities:

Activity 4 Typological analysis: types and invariant

Activity 5 Structural interpretation. Lowering of loads diagram

Activity 6 Materials laboratory practices

Activity 7 Practical exercises of application of maths and physics to the building field

Full-or-part-time: 38h

Theory classes: 3h

Practical classes: 2h 30m

Laboratory classes: 2h 30m

Self study : 30h

Unit 3 Analyze

Description:

On this Unit students will begin to work on coming together to conclusions and on the synthesis of everything that has been learned during the school year.

The building will be analyzed from the reflections and the correction of the documents carried out. They will analyze the materials from the parameter setting and the representation. They will apply statistical criteria to evaluate and draw conclusions. And a complete reading of the building will be done.

Specific objectives:

The main objective of this unit is for the students to understand the building from the different areas of knowledge that has been incorporating during the school year and to draw conclusions.

It is also an objective of this unit for the student to show the work done on an organized way, with criteria and self demanded levels according to the studies they are doing: correct presentations and appropriate tools for the graphic, oral and written expression on the final documents.

Related activities:

Activity 8 Sustainable development goals SDGs

Activity 9 Applied statistics

Activity 10 Parameters reading and patrimonial values

Activity 11 compendium

Related competencies :

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.

Full-or-part-time: 6h 40m

Theory classes: 1h 40m

Practical classes: 1h 40m

Guided activities: 1h 40m

Self study : 1h 40m

GRADING SYSTEM

Continuous assessment. Each week new learning objectives will be considered and it will have to be handed over what has been done during the class time of the workshop. Each activity will be evaluated and given back corrected by ATENEA or by personal correction during the workshop classes.

There will be done several Guided Activities to be handed over and evaluated, individually or in pairs, which represents a 70% of the final grade.

At the end of the school year it will be handed over the document of the workshop summary, which represents a 30% of the final grade.

There is not Reevaluation exam.

In case of exceptional sanitary cases, the evaluation system might be modified.

EXAMINATION RULES.

70% of the tests will be individually done.

BIBLIOGRAPHY

Basic:

- Fullana, Miquel. Diccionari de l'art i dels oficis de la construcció. 7a ed. Palma de Mallorca: Moll, 1999. ISBN 8427307438.
- Arquitectura tradicional : tècniques constructives. Girona: GRETA Grup de Recuperació i Estudi de la Tradició Arquitectònica, 2016. ISBN 9788494527913.
- Diccionari visual de la construcció [on line]. Barcelona: Generalitat de Catalunya. Departament de Política Territorial i Obres Públiques, 2001 [Consultation: 12/09/2022]. Available on: http://territori.gencat.cat/ca/01_departament/documentacio/general/terminologia_tecnica/diccionari_visual_de_la_construccio/.
- Fontbona, Francesc; Graus, Ramon. Les Arts aplicades a Barcelona. 1a edició. Barcelona: Àmbit : Ajuntament de Barcelona, març de 2018. ISBN 9788491561033.
- Inventari del Patrimoni històric, arquitectònic i ambiental d'Esplugues de Llobregat [on line]. Barcelona: Diputació de Barcelona. Ajuntament d'Esplugues de Llobregat. Servei de Patrimoni Arquitectònic Local, 2007 [Consultation: 12/09/2022]. Available on: https://www.diba.cat/es/web/spal/inventari_esplugues.
- Molet i Petit, Joan. "L'arquitectura eclèctica a Catalunya: una història per escriure". Matèria : revista d'art [on line]. [Consultation: 12/09/2022]. Available on: <https://revistes.ub.edu/index.php/materia/article/view/11376>.
- Paricio Casademunt, Antoni. Secrets d'un sistema constructiu : [l'Eixample] [on line]. Barcelona: Edicions UPC, 2001 [Consultation: 12/09/2022]. Available on: <http://hdl.handle.net/2099.3/36310>. ISBN 8483015420.
- Paricio Ansuategui, Ignacio. Vocabulario de arquitectura y construcción. Barcelona: Bisagra, 1999. ISBN 8492312564.

Complementary:

- Martín Nieva, Helena. Claudi Durán i el formigó armat a Catalunya. Barcelona: Projecte fi de carrera-UPC. Escola Universitària Politècnica de Barcelona, 2000.
- Sanahuja i Torres, Dolors ; Vilardell i Tarruella, Roser. Aproximació a la història d'Esplugues de Llobregat. Esplugues de Llobregat: Ajuntament d'Esplugues, 1984.
- Subias Pujadas, Ma. Pia. Pujol i Bausis : centre productor de ceràmica arquitectònica a Esplugues de Llobregat. Esplugues de Llobregat: Ajuntament d'Esplugues de Llobregat, DL 1989. ISBN 8450586240.

RESOURCES

Hyperlink:

- Nom recurs. Resource