



Course guide

310068 - 310068 - Rehabilitation Projects

Last modified: 15/05/2023

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 2015).
(Optional subject).

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

LECTURER

Coordinating lecturer:

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

1. 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.
2. 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.
3. FE-28 Aptitude to write technical projects of constructions, which don't require architectural projects, as well as projects of demolition and design.
4. FE-29 Aptitude to write documents which are part of execution projects made in a multidisciplinary form
5. FE-30 Ability of analysis of the execution projects and their transfer to the execution in constructions.

Transversal:

6. 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.
7. 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.
8. 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.
9. 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.

TEACHING METHODOLOGY

The in-person learning hours consist on theoretical classes where the professor does a brief exposition to introduce the general learning objectives related with the basic concepts of the subject. Subsequently and by practical exercises, the professor motivates and involves the students so that they can participate actively in their learning.

The lab learning is planned from the monitoring of an activity during all the course which could be put into practice the different objectives of the subject.

It exists a specific teaching material which allows the student to acquire the necessary knowledge of each one of the subject contents.

LEARNING OBJECTIVES OF THE SUBJECT

The subject wants to provide to the students the necessary elements for doing an analysis in the diagnosis of a building, so that they can define a coherent programme for the future uses and write a restoration project of an existing building which contain all the necessary elements from a technical and documentary point of view.

It must allow the students to finish their studies with a good basis for specializing in the realisation of diagnosis, projects and other restoration works of existing buildings.

At the end of the subject, the students should be able to:

- . Understand the values and the condition of a building in a comprehensive form.
- . Evaluate the possibilities that the building offers and take advantage of them for future uses.
- . Define with precision the restoration works to do.
- . Represent graphically the interventions to do.
- . Adjust a measurement state in the real construction lots of the project.
- . Materialise, technically and documentally, a restoration project.

STUDY LOAD

Type	Hours	Percentage
Self study	45,0	60.00
Hours large group	12,0	16.00
Hours medium group	9,0	12.00
Hours small group	9,0	12.00

Total learning time: 75 h

CONTENTS

C1 Introduction, methodology and criteria in intervention.

Description:

In this content the students work:

An introduction to the concepts related with the intervention in existing buildings, a methodological presentation of the processes to follow and the criteria used over time.

Related activities:

Activity 1: Restoration project. Applied practice.

Activity 4: Individual evaluation exam.

Theoretical explanation at class.

Full-or-part-time: 6h

Theory classes: 2h

Self study : 4h



C2 Intervention techniques in rehabilitation

Description:

In this content the students work:

Intervention techniques for the correction of damages in materials and constructive systems, and for the improvement of the building features (Structure, façades, enclosures, energy efficiency, humidity...).

Related activities:

Theoretical explanation at class.

Activity 1: Restoration project. Applied practice.

Activity 2: Various practices applied to the acquired theoretical knowledge.

Activity 4: Individual evaluation exam.

Full-or-part-time: 31h

Theory classes: 8h

Practical classes: 10h

Self study : 13h

C3 Documentation and graphic representation of the project

Description:

In this content the students work:

Draft as a first approximation.

Documentation of the project. The Report and the measuring State.

Graphic representation of the project and constructive details.

Related activities:

Theoretical explanation at class.

Activity 1: Restoration project. Applied practice.

Activity 3: Oral exposition at class of the progress of the restoration project.

Full-or-part-time: 38h

Laboratory classes: 10h

Self study : 28h



ACTIVITIES

A1 PROJECT OF REHABILITATION. APPLIED PRACTICE.

Description:

Realisation of a course exercise. The students, in groups of 3 members, will develop a restoration project about a real building. The building must be chosen, proposed by the faculty or the students (with the approval of the professor). Depending on the features of the selected building there will be defined the necessary contents of the work to develop.

Specific objectives:

At the end of the practice the students should be able to:

- . Understand the values and the condition of a building in a comprehensive form.
- . Evaluate the possibilities which the building offers and take advantage of them in future uses.
- . Define with precision the restoration works to do.
- . Represent graphically the interventions to do.
- . Adjust a measurement state to the real construction lots of the project.
- . Materialise, technically and documentally, a restoration project.

Material:

Restoration projects, available at the library, done by former students as TFC.
Contents and material provided during the theory sessions.
Complementary and specific bibliography.

Delivery:

There are two intermediate corrections and at the end of the four-month term the work is delivered and evaluated. It represents the 50% of the final evaluation.

Full-or-part-time: 50h

Practical classes: 5h

Laboratory classes: 5h

Self study: 40h

A2 DIVERSE PRACTICES APPLIED TO THE THEORETICAL KNOWLEDGE OBTAINED

Description:

Practical activities related with the progress on the contents and the restoration Project, in-person at class or by ATENEA (AD).

Specific objectives:

This activity allows to do a following in the progress and consolidation of the knowledge by the students.
The faculty and the students will use this tool for persevering and going deep into the negative aspects.

Material:

Contents and material provided during the theory sessions.
Complementary and specific bibliography.

Delivery:

The results will be delivered and corrected by the faculty. It represents a part of the continuous evaluation (10%).

Full-or-part-time: 4h

Laboratory classes: 2h

Self study: 2h



A3 ORAL EXPOSITION IN THE ANTICIPATED CLASS OF THE REHABILITATION PROJECT.

Description:

Exposition at class of the essential aspects treated in each project and the way to confront them. Regularly, the students must prepare a presentation of their project to expose it at class with limited time.

Specific objectives:

- At the end of the activity the students should be able to:
- Communicate orally in an efficient way.
 - Use the appropriate strategies in the presentation of their work.
 - Take advantage of the experience acquired to improve the course work.

Material:

Material made by the students.

Delivery:

It allows to evaluate the progress in the knowledge and the practice in process, to orientate the aspects detected as weak and reinforce the contents well orientated. It represents a part of the continuous evaluation (10%).

Full-or-part-time: 5h

Theory classes: 2h

Self study: 3h

A4 INDIVIDUAL TEST OF EVALUATION

Description:

Individual written exam at class for evaluate the minimum theoretical concepts of the contents of the subject. Correction by the faculty.

Specific objectives:

- At the end of the activity the students should be able to:
- Write correctly.
 - Express the knowledge in an efficient and understandable way.
 - Explain the intervention systems in the damage correction and the improvement of the existing buildings.

Material:

Exam wording.

Delivery:

It represents a 30% of the final evaluation.

Full-or-part-time: 2h

Theory classes: 2h

GRADING SYSTEM

The final mark is the addition of these partial marks:

$$N_{\text{final}} = 0,50 \times A1 + 0,10 \times A2 + 0,10 \times A3 + 0,30 \times A4.$$

A_n = The different activities.

The continuous evaluation consists on doing different activities, individually or in groups, with summative and educational nature, done during the course (in and out of class).

The different activities contain the theory, practice and lab hours.

EXAMINATION RULES.

If some of the continuous evaluation or lab activities is not done, it will be considered as non-marked.
All the activities contain all the teaching methodologies used and the objectives which must be assumed in the subject.

BIBLIOGRAPHY

Basic:

- Trujillo, Lara. Manuals de diagnosi. Vol. 9. Barcelona: Col·legi d'Aparelladors i Arquitectes Tècnics de Barcelona, 2002. ISBN 8487104509.
- Fitxes de rehabilitació. Barcelona: ITEC, 1983. ISBN 8460032698.
- Mètode RehabiMed : arquitectura tradicional mediterrània. Barcelona: Rehabimed, 2008. ISBN 8487104959.
- "Rehabilitación. El edificio". Método RehabiMed. Barcelona: COAATB, 2007. Vol. 2.

Complementary:

- Curso de rehabilitación. Madrid: Colegio Oficial de Arquitectos de Madrid, 1984-1988.
- Curso de patología : conservación y restauración de edificios. Madrid: Colegio Oficial de Arquitectos de Madrid, 1995. ISBN 8477400806.
- La Terra cruda dei Campidani, del Cixerri e del Sarrabus. Roma: Dei Tipografia del genio civile, 2008. ISBN 9788849624410.
- Loggia : arquitectura & restauración. València: Universitat Politècnica de València, 1996-.
- Permanyer, E. (rev.). Soluciones constructivas para la rehabilitación de viviendas de alta montaña. Barcelona: ITEC, 1986. ISBN 8485954297.
- Recomendaciones para la terapia de forjados unidireccionales de viguetas autoportantes de hormigón. Barcelona: l'Institut : Generalitat de Catalunya. Departamento de Política Territorial y Obras Públicas. Dirección General de Arquitectura y Urbanismo, 1992. ISBN 8478531130.
- Mañà i Reixach, Fructuós. Recomanacions per al reconeixement, la diagnosi i la teràpia de sostres de fusta [on line]. Barcelona: ITEC, 1993 [Consultation: 26/09/2014]. Available on: http://www.itec.cat/serveis/lilibrespdf/pdfs/Recomanacions%20per%20al%20reconeixement,%20la%20diagnosi%20i%20la%20ter%20C3%A0pia%20de%20sostres%20de%20fusta_ITeC_1993.pdf. ISBN 8478531548.
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- Seguí Santana, Víctor. Recomanacions per al reconeixement, la diagnosi i la teràpia de sostres ceràmics [on line]. Barcelona: ITEC, 1995 [Consultation: 26/09/2014]. Available on: http://www.itec.cat/serveis/lilibrespdf/pdfs/Recomanacions%20per%20al%20reconeixement,%20la%20diagnosi%20i%20la%20ter%20C3%A0pia%20de%20sostres%20cer%20C3%A0mics_ITeC_1995.pdf. ISBN 847853279X.
- Genescá, J. M.; Rosell, J. R. Recomanacions per al reconeixement, la diagnosi i la teràpia d'estructures de fàbrica de maó [on line]. Barcelona: ITEC, 1997 [Consultation: 26/09/2014]. Available on: http://www.itec.cat/serveis/lilibrespdf/pdfs/Recomanacions%20per%20al%20reconeixement,%20la%20diagnosi%20i%20la%20ter%20C3%A0pia%20d%27estructures%20de%20f%20C3%A0brica%20de%20ma%20C3%B3_ITeC_1997.pdf. ISBN 8478533176.

RESOURCES

Other resources:

http://www.rehabimed.net/ca_es/Paginas/lilibres.aspx /> <http://www.itec.es/nouPDF.e/presentacio.aspx> />