

Course guide

310182 - 310182 - Pathological and Diagnostic Processes

Last modified: 22/11/2023

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

Degree: MASTER'S DEGREE IN DIAGNOSIS AND INTERVENTION TECHNIQUES IN BUILDING CONSTRUCTION
(Syllabus 2020). (Compulsory subject).

Academic year: 2023 **ECTS Credits:** 5.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: JUAN RAMON ROSELL AMIGÓ

Others: Navarro Ezquerro, Maria Antonia

REQUIREMENTS

Have completed an official degree in the fields of architecture, building or civil engineering

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

CE12MUDITI. To make decisions based on the analysis of the results.

CE8MUDITIE. To design a methodology guide to confront the knowledge and the diagnosis of a building and its later rehabilitation.

CE10MUDITI. To acquire an evaluation methodology starting from observed or measured data and from the results of the analysis processes with numerical support.

Transversal:

CT3MUDITIE. (ENG) Treball en equip. Ser capaç de treballar com a membre d'un equip interdisciplinari, ja sigui com un membre més o realitzant tasques de direcció, amb la finalitat de contribuir a desenvolupar projectes amb pragmatisme i sentit de la responsabilitat, assumint compromisos, tenint en compte els recursos disponibles.

Basic:

CB6MUDITIE. To possess and comprehend the knowledge that provides a basis or opportunity of being original on the development and/or implementation of ideas, often in an investigation context.

CB7MUDITIE. For the students to know how to apply the knowledge acquired and their problem-solving capacity in new environments or slightly familiar, within wider contexts (or multidisciplinary) related to their area of study.

CB8MUDITIE. For the students to be able to integrate knowledge and face the complexity of making judgements based on some information which, being incomplete or limited, includes considerations about the social and ethical responsibilities linked to the application of their knowledge and judgement.

CB9MUDITIE. For the students to know how to communicate their conclusions and the knowledge and underlying reasons to a specialised and a non-specialised public on a clear and concise way.

CB10MUDITI. For the students to obtain learning skills that allows them to continue studying on a mainly autonomous and self-taught way.

TEACHING METHODOLOGY

Master lessons

Exercises and practices in the classroom and laboratory.

Autonomous learning from recommended reading

Case study

LEARNING OBJECTIVES OF THE SUBJECT

The subject provides the knowledge and skills necessary for the identification and assessment of the different pathological processes until reaching their etiology. Use and apply the different methodologies for the analysis of the symptoms and observed dysfunctions, the global behavior of the building over time and the results of the prospecting and other sources of information.

STUDY LOAD

Type	Hours	Percentage
Hours small group	5,0	4.00
Hours medium group	5,0	4.00
Self study	80,0	64.00
Hours large group	25,0	20.00
Guided activities	10,0	8.00

Total learning time: 125 h

CONTENTS

Module 1 General

Description:

This module will develop the general and most recurrent themes of pathology. General topics of processes and nomenclature. Pathological processes linked to water (surface transport and porous network, dissolution and leaching, salts and crystallization, hygroscopicity, bio-habitat, erosion, oxidation-corrosion, ...) and the processes associated with stresses-deformations-breaks (of mechanical origin, thermohygroscopic, induced stresses, elastic and permanent deformations, creep, ...).

Full-or-part-time: 10h 30m

Theory classes: 10h 30m

Module 2 Materials

Description:

This module will develop the specific topics of pathology and diagnosis (P&D) of some specific materials, with special relevance in those of the case study. P&D of stone and ceramic materials, as well as coatings. Wood P&D. P&D of reinforced concrete

Full-or-part-time: 10h 30m

Theory classes: 10h 30m

Module 3 Construction systems

Description:

This module will develop the specific topics of pathology and diagnosis of the main construction systems. P&D of floors-foundations, stone and ceramic factories, floors, arches and vaults, concrete structures, vertical and horizontal walls, etc.

Full-or-part-time: 15h

Theory classes: 15h



Module 4 Real case study

Description:

This module is considered transversal to the previous ones and basically develops the real case study from prospecting and sampling visits, and work in a workshop format.

Full-or-part-time: 9h

Theory classes: 9h

GRADING SYSTEM

To be defined