



DEGREE CURRICULUM
PATHOLOGY AND DIAGNOSIS

Coordination: FARRE PALLAS, MONTSERRAT

Academic year 2023-24

Subject's general information

Subject name	PATHOLOGY AND DIAGNOSIS			
Code	101415			
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION			
Typology	Degree	Course	Character	Modality
	Bachelor's Degree in Architectural Technology and Building Construction	3	COMPULSORY	Attendance-based
Course number of credits (ECTS)	6			
Type of activity, credits, and groups	Activity type	PRAULA	TEORIA	
	Number of credits	3	3	
	Number of groups	1	1	
Coordination	FARRE PALLAS, MONTSERRAT			
Department	INDUSTRIAL AND BUILDING ENGINEERING			
Important information on data processing	Consult this link for more information.			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
FARRE PALLAS, MONTSERRAT	montserrat.farrepallas@udl.cat	6	

Subject's extra information

The subject is aimed at giving a generic view of the Pathological Processes of both buildings and the materials that make them up, as the name of the subject "Pathology and Diagnosis" makes clear in terms of Intervention despite not being the objective of the subject are treated superficially. Subject taken in the 2nd semester of the 3rd year of education. It belongs to the "Form specification" module, specifically to the "Building techniques and technologies" subject.

Learning objectives

Plan the realization of a prediagnosis in existing buildings

Carry out the prediagnosis, identifying and documenting the lesions and dysfunctions in the different construction systems in a real building

Make a first approximation to the causes of lesions and dysfunctions based on visual analysis

Assess, based on the prediagnosis, the state of security of existing buildings

Raise the need or not to carry out further diagnostic studies

Use computer tools and type documents as help to carry out the prediagnosis

Competences

University of Lleida strategic competences

- Master Information and Communication Technologies.

Degree-specific competences

- Knowledge of the historical evolution of construction techniques and elements and of the structural systems which have given rise to the stylistic forms.
- Aptitude to identify the constructive elements and systems, define their function and compatibility, and their use in the construction process. Raise and resolve constructive details.
- Knowledge of the evaluation of the environmental impact of the building and demolition processes, of the sustainability in building and of the procedures and techniques to evaluate the energy efficiency of buildings.
- Knowledge of the traditional or prefabricated construction systems used in building, their varieties and the physical and mechanical characteristics which define them.
- Knowledge of the chemical characteristics of the materials used in construction, their elaboration processes, the methods of the tests to determine their characteristics, their geological origin, their environmental impact, the recycling and residue management.
- Ability to elaborate manuals and maintenance plans and manage their implementation in a building.
- Ability to apportion construction materials to the type and use of the building, manage and direct the reception and quality control of the materials, their use, the execution control of the work units and the realisation of trials and final tests.
- Ability to pass judgement on the causes and manifestations of the lesions in buildings, propose solutions to avoid or repair pathologies, and analyse the useful life cycle of constructive elements and systems.
- Aptitude to intervene in the rehabilitation of buildings and in the restoration and construction of the existing heritage.

Degree-transversal competences

- Ability to reunite and interpret relevant data, inside an area of study, to express reasons which include reflecting upon relevant subjects of a social, scientific or ethical nature.
- Ability for abstraction and critical, logical and mathematical reasoning.

- Ability to analyse and synthesise.
- Ability to plan and organise the personal work.
- Ability to consider the socio-economical context as well as the criteria of sustainability in the solutions of engineering.
- Ability to work in a team, be it unidisciplinary or multidisciplinary.
- Ability to work in situations where information is lacking or you are under pressure.
- Ability to transmit information, ideas, problems and solutions to a public which is both specialised and not specialised in the matter.

Subject contents

Without translate-

- 1.- Introduction to Pathology and Diagnosis
- 2.- Diagnosis Methodology
- 3.- Tools and Tests
- 4.- Injuries and Causes
- 5.- Diagnosis and Treatment of Moisture
- 6.- Diagnosis and Intervention in Structural Foundation Systems
- 7.- Diagnosis and Intervention in Structural Wood Systems
- 8.- Diagnosis and Intervention in Concrete Structural Systems
- 9.- Diagnosis and Intervention in Roof Structural Systems
- 10.-Diagnosis and Intervention in Masonry Structural Systems
- 11.-Diagnosis and Intervention in Steel Structural Systems
- 12.-Diagnosis and Intervention in Closure Systems
- 13.- Diagnosis and Intervention in Finishing Systems

Methodology

Lectures: theoretical concepts

Realization of a Prediagnosis in a real building

Resolution of exercises by students in class and at home

Diagnostic practices in the EPS buildings

Development plan

PATHOLOGY AND DIAGNOSIS 2023-24

Dates (Weeks)	Description::	Activity face-to-face Presencial	HTP (2) (Hours)	Work activity autonomous	HTNP (3) (Hours)
1 week	1.- Beginning of Pathology and Diagnosis	Theory Exercises	4	Exercises- study - course work	6
2 week	2.- Diagnosis Methodology	Theory Exercises	4	Exercises- study - course work	6
3 week	3.- Tools and Tests	Theory Exercises	4	Exercises- study - course work	6
4 week	4.- Lesions and Causes	Theory Exercises	4	Exercises- study - course work	6
5 week	5.- Diagnosis and Treatment of Moisture	Theory Exercises	4	Exercises- study - course work	6
6 week	6.- Diagnosis and Intervention of Structural Foundation Systems	Theory Exercises	4	Exercises- study - course work	6
7 week	7.- Diagnosis and Intervention in Wood Structural Systems	Theory Exercises	4	Exercises- study - course work	6
8 week	8.- Diagnosis and Intervention in Concrete Structural Systems	Theory Exercises	4	Exercises- study - course work	6
9 week	1A- Scheduled evaluation Themes 1 2 3 4 5 6 7 8				
10 week	8.- Diagnosis and Intervention in Concrete Structural Systems	Theory Exercises	4	Exercises- study - course work	6
11 week	9.- Diagnosis and Intervention in Roof Structural System	Theory Exercises	4	Exercises- study - course work	6
12 week	9.- Diagnosis and Intervention in Roof Structural System	Theory Exercises	4	Exercises- study - course work	6
13 week	10.-Diagnosis and Intervention in Masonry Structural Systems	Theory Exercises	4	Exercises- study - course work	6
14 semana	11.- Diagnosis and Intervention in Structural Steel Systems	Theory Exercises	4	Exercises- study - course work	6
15 week	12.- Diagnosis and Intervention in Closure Systems	Theory Exercises	4	Exercises- study - course work	6
16 week	13.- Diagnosis and Intervention in Finishing Systems	Theory Exercises	4	Exercises- study - course work	6
17 week	Delivery of work				
18 week	2A- Scheduled evaluation Themes 8 9 10 11 12 13				
19 week	Tutorships				
20 week	Scheduled recovery				

Evaluation

OBJECTIVES	DATES	ACTIVITIES of d'EVALUATION Criterias	%	O/V (1)	Individual/Group (2)	OBSERVATIONS
BLOCK I	9 ^a week	Scheduled assessment1 A	25	O	I	The evaluation must be passed with a 4 to achieve average
	18 ^a week	Scheduled assessment2 A	25	O	I	The evaluation must be passed with a 4 to achieve average
BLOCK II	16 ^a week	General course work C-1 PATHOLOGY	15	O	G	It is essential to present the work to pass the subject
	16 ^a week	General course work C-2 DIAGNOSIS	15	O	G	It is essential to present the work to pass the subject
BLOCK III	16 ^a week	EXERCISES	15	O	I	
	16 ^a week	ATTENDANCE- PARTICIPACIÓAttendance - participation	5	O	I	
ALTERNATIVE EVALUATION	18 ^a week	RECOVERY EXAM	50	O	I	
	18 ^a week	DELIVERY EXERCISES AND DIAGNOSIS	50	O	I	

Bibliography

Recommended bibliography

1- Manual de diagnosi i tractament d'humitats

Col·legi d'Aparelladors i Arquitectes Tècnics de Barcelona

carrer Bon Pastor nº 5, 08021Barcelona

ISBN-

2- Manual de diagnosi i intervenció en sostres unidireccionals de formigó

Col·legi d'Aparelladors i Arquitectes Tècnics de Barcelona

Carrer Bon Pastor nº 5, 08021Barcelona

ISBN-

3- Manual de diagnosi patologia i intervenció en estructures de fusta

Col·legi d'Aparelladors i Arquitectes Tècnics de Barcelona

Carrer Bon Pastor nº 5, 08021 Barcelona

ISBN- 84-87104-29-0

4- Manual de diagnosi i intervenció en sistemes estructurals de parets de càrrega

Col·legi d'Aparelladors i Arquitectes Tècnics de Barcelona

Carrer Bon Pastor nº 5, 08021Barcelona

ISBN- 84-87104-23-1

5- Manual de diagnosis y tratamientode materiales pétreos y cerámicos

Col·legi d'Aparelladors i Arquitectes Tècnics de Barcelona

Carrer Bon Pastor nº 5, 08021Barcelona

ISBN- 84-87104-29-0

6- Manual de geotècnia i patologia, diagnosi i intervenció en fonaments

Col·legi d'Aparelladors i Arquitectes Tècnics de Barcelona

Carrer Bon Pastor nº 5, 08021Barcelona

ISBN- 84-87104-37-1

7- Manual per a la diagnosi i el tractament de l'amiant a la construcció

Col·legi d'Aparelladors i Arquitectes Tècnics de Barcelona

Carrer Bon Pastor nº 5, 08021Barcelona

ISBN- 84-87104-37-1

8- Manual de diagnosis e intervenció en estructuras de hormigón armado

Col·legi d'Aparelladors i Arquitectes Tècnics de Barcelona

Carrer Bon Pastor nº 5, 08021Barcelona

ISBN- 84-87104-43-6

9- Manual de diagnosis e intervenció en cubiertas planas

Col·legi d'Aparelladors i Arquitectes Tècnics de Barcelona

Carrer Bon Pastor nº 5, 08021Barcelona

ISBN- 84-87104-50-9

10- Curso de patologia, conservacióny restauración de edificios

Tomo 1

Tomo 2

I -Introducción

IV- Patología de estructuras leñosas

II -Patología de cimentaciones V -Patología de estructuras de hormigón

III-Patología de fábricas VI- Patología de estructuras metálicas

Tomo 3

Tomo 4

VII -Patología de cerramientos X -Ambiente higrométrico

VIII-Patología de los acabados XI -Ambiente luminosos

IX -Patología de cubiertas

XII-Sistemas de seguridad

1991 Colegio Oficial de Arquitectos de Madrid (COAM)

ISBN: Obra Completa - 84-7740-040-7

11- LA CONSERVACIÓN DEL PATRIMONIO ARQUITECTÓNICO

TECNICAS

Alfredo Vera Boti

DM- Diego Marin Librero Editor

ISBN: 84-8426-317-1

12- COLECCIÓN PATOLOGÍA EN LA EDIFICACIÓN (Tomo I)

CURSO, Informes Dictámenes y Periciales s/ la Ley de Enjuiciamiento Civil (LEC 2000)

Alfonso Lozano – Gerónimo Lozano

Edición Lozano y Asociados. Consultores Técnicos de Construcción S.L.

La Redonda s/n Somió – 33203 Gijón

ISBN: 84-86889-83-9

13- TECNOLOGÍA DE LA ARQUITECTURA Y DE LA CONSTRUCCIÓN

HUMEDADES EN EDIFICACIÓN

Francisco Ortega Andrade

1999- EDITAN S.A.

ISBN: 84-87005-01-2

14- INSTITUT DE LA TECNOLOGIA DE LA CONSTRUCCIÓ DE CATALUNYA

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<http://www.itec.cat/nouPdf.c/presentacio.aspx>