

## Course guide

### 310506 - 310506 - Real Estate Management. FM

Last modified: 23/01/2024

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

**Degree:** MASTER'S DEGREE IN BUILDING CONSTRUCTION MANAGEMENT (Syllabus 2015). (Compulsory subject).

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

#### LECTURER

**Coordinating lecturer:** Royano García, Verónica

**Others:** Royano García, Verónica

#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

##### Specific:

CE14MUGE. Carry out reliability analysis and study the life cycle of the building and its components

CE12MUGE. Apply management models suitable for edification processes

##### Transversal:

01 EIN. ENTREPRENEURSHIP AND INNOVATION: Knowing about and understanding how businesses are run and the sciences that govern their activity. Having the ability to understand labor laws and how planning, industrial and marketing strategies, quality and profits relate to each other.

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.

##### Basic:

CB7. The students must be able to apply the acquired knowledges and their ability of resolution of problems in new or little known environments inside more wide environments (or multidisciplinary) related with their study field.

#### TEACHING METHODOLOGY

Master class.

Expository participative class.

Practices.

#### LEARNING OBJECTIVES OF THE SUBJECT

Upon completing the course, the student should be able to:

- Identify the components of a building following the criteria established in international standards.
- Estimate the service life of a real estate asset.
- Evaluate the functional condition of different systems using specific questionnaires.
- Propose improvement actions during the operation and maintenance stage.

#### STUDY LOAD

| Type               | Hours | Percentage |
|--------------------|-------|------------|
| Self study         | 90,0  | 72.00      |
| Guided activities  | 7,5   | 6.00       |
| Hours medium group | 5,0   | 4.00       |

| Type              | Hours | Percentage |
|-------------------|-------|------------|
| Hours small group | 5,0   | 4.00       |
| Hours large group | 17,5  | 14.00      |

**Total learning time:** 125 h

## CONTENTS

### Topic 1. Standardized identification of construction elements

#### Description:

In this first section of the course, the objective is to familiarize the student with the organization of information in construction systems. The most widely employed classification systems in use today will be addressed, highlighting both their similarities and differences. To conclude, detailed guidelines will be provided on the identification and coding of construction elements in accordance with international standards.

#### Specific objectives:

Classify the construction elements (functional systems, technical systems, and components) of a building subsystem.

#### Related activities:

Classes of theoretical explanation.

Task 1: Classify the construction elements of a building subsystem.

Task 4: Comprehensive analysis and future perspectives.

#### Full-or-part-time: 41h 40m

Theory classes: 6h 40m

Practical classes: 10h

Self study : 25h

### Topic 2. Service life estimation of a real estate asset

#### Description:

In this second section of the course, awareness will be gained regarding the factors of durability and degradation that establish the foundations for building management and conservation. Additionally, students will be guided in defining the estimated service life of construction elements. This will enable effective planning of necessary replacements throughout the required lifespan of the building.

#### Specific objectives:

Define the estimated service life of construction elements using the Factor Method.

#### Related activities:

Classes of theoretical explanation.

Task 2: Estimate the service life of construction elements.

Task 4: Comprehensive analysis and future perspectives.

#### Full-or-part-time: 41h 40m

Theory classes: 6h 40m

Practical classes: 10h

Self study : 25h



### Topic 3. Functional condition assessment of construction elements

**Description:**

The final section of the course is dedicated to introducing the concept of functional condition in the evaluation of the building during the operation and maintenance stages. The relationship between elements and their functions will be established, and an evaluation method will be presented, designed to minimize the subjectivity of the technician during technical inspections.

**Specific objectives:**

Evaluate the functional condition of construction elements using specifically designed questionnaires.

**Related activities:**

Classes of theoretical explanation.

Task 3. Evaluation of the functional condition of construction elements.

Task 4. Comprehensive analysis and future perspectives.

**Full-or-part-time:** 41h 40m

Theory classes: 6h 40m

Practical classes: 10h

Self study : 25h

## GRADING SYSTEM

---

Tasks: 100%

- Task 1: 25%
- Task 2: 30%
- Task 3: 30%
- Task 4: 15%

## EXAMINATION RULES.

---

The activities will be developed by means of a practical case, individually or in groups.

## BIBLIOGRAPHY

---

### Basic:

- ISO. ISO 11863: Buildings and building-related facilities - Functional and user requirements and performance - Tools for assessment and comparison. 2011.
- AENOR. UNE-EN ISO 12006-2 Construcción. Organización de la información de las obras de construcción. Parte 2: Marco para la clasificación. 2020.
- AENOR. UNE-EN IEC 81346-2: Sistemas industriales, instalaciones y equipos y productos industriales. Principios de estructuración y designación de referencia. Parte 2: Clasificación de objetos y códigos para las clases. 2019.
- AENOR. UNE-EN IEC 81346-1: Sistemas industriales, instalaciones y equipos y productos industriales. Principios de estructuración y designación de referencia. Parte 1: Reglas básicas. 2022.
- ASTM. ASTM E1679-13(2019) Standard Practice for Setting the Requirements for the Serviceability of a Building or Building-Related Facility, and for Determining What Serviceability is Provided or Proposed. 2019.
- Royano, V.; Gibert, V.; Serrat, C.; Rapinski J.. "Analysis of classification systems for the built environment: Historical perspective, comprehensive review and discussion". Journal of Building Engineering [on line]. Available on: <https://doi.org/10.1016/j.jobbe.2023.105911>.
- ISO. ISO 81346-12: Industrial systems, installations and equipment and industrial products Structuring principles and reference designations Part 12: Construction works and building service. 2018.
- ISO. ISO 81346-10:2022 Industrial systems, installations and equipment and industrial products : Structuring principles and reference designations — Part 10 : Power supply systems. Geneva: International Organization for Standardization, 2022.
- AENOR. UNE-EN 15331: Criterios para el diseño, la gestión y el control de servicios de mantenimiento de edificios. Madrid: Asociación Española de Normalización y Certificación, 2012.
- Gibert, V.; Royano, V.; Pascual, J.; Avellaneda, A.; Gibert, A.; Lucea, J.. Mantenimiento de edificios 1. Barcelona: Escola Politècnica Superior d'Edificació de Barcelona, 2009.
- Feingold, Víctor; Gisbert, Marisa; Chardon, Enrique. El Libro del facility management. Buenos Aires: Sociedad Latinoamericana de Facility Management, 2012. ISBN 9789872780500.
- AENOR. UNE-EN 13306: Mantenimiento.Terminología del mantenimiento. Madrid: Asociación Española de Normalización y Certificación, 2018.
- AENOR. UNE-EN 60706-2: Mantenibilidad. Parte 2: Requisitos y estudios de mantenibilidad durante la fase de diseño y desarrollo. Madrid: Asociación Española de Normalización y Certificación, 2009.
- AENOR. UNE-EN 15221: Gestión de Inmuebles y Servicios de Soporte. Madrid: Asociación Española de Normalización y Certificación, 2012.
- AENOR. UNE-EN 13460: Mantenimiento. Documentos para el mantenimiento. Madrid: Asociación Española de Normalización y Certificación, 2009.