

## Course guide

### 205269 - BIM MANAG. - BIM Management

**Last modified:** 09/02/2024

**Unit in charge:** Terrassa School of Industrial, Aerospace and Audiovisual Engineering  
**Teaching unit:** 758 - EPC - Department of Project and Construction Engineering.

**Degree:** BACHELOR'S DEGREE IN AEROSPACE TECHNOLOGY ENGINEERING (Syllabus 2010). (Optional subject).  
BACHELOR'S DEGREE IN AEROSPACE VEHICLE ENGINEERING (Syllabus 2010). (Optional subject).  
BACHELOR'S DEGREE IN INDUSTRIAL TECHNOLOGY ENGINEERING (Syllabus 2010). (Optional subject).

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

#### LECTURER

---

**Coordinating lecturer:** Forcada Matheu, Nuria

**Others:** Gordo Gregorio, Paula

#### PRIOR SKILLS

---

-

#### REQUIREMENTS

---

-

#### TEACHING METHODOLOGY

---

Lectures: Lecturers present concepts, principles, and techniques, with the active participation of students.

Problem Based Learning: Lecturers and students resolve exercises and standard problems through specific techniques related to the theoretical contents and principles of the course.

Project Based Learning: Students resolve complex problems through specific techniques related to the theoretical contents and principles of the course.

Self-study: Students diagnose their learning needs, in collaboration with the lecturers, and plan their own learning process.

#### LEARNING OBJECTIVES OF THE SUBJECT

---

Building Information Modelling (BIM) is an approach to build a model in which a digital representation of the building process is used to facilitate the exchange of information. BIM has changed the landscape of Architecture, Engineering and Construction (AEC) practice around the world by integrating new technologies of information in the construction field. Contemporary approaches to BIM tools, offer a 3D model which can be used to generate information for quantity take-offs, solar studies, day-lighting simulation, facility management or monitoring the construction site. This approach provides engineers with more control over the buildings during the design, construction and maintenance phases.

In this course, participants will gain a comprehensive understanding of BIM terminology and practices and will be able to analyse and extract building information data from a BIM model. Throughout the course, students will have the opportunity to learn how to use a range of BIM tools for tasks such as analysis, visualization, and interaction with building data, enabling them to effectively manage BIM projects. Furthermore, students will acquire expertise in project management for BIM projects, understanding the roles and responsibilities of the actors involved in such projects, analysing BIM models, and preparing BIM documentation.

## STUDY LOAD

Type	Hours	Percentage
Self study	45,0	60.00
Hours large group	30,0	40.00

**Total learning time:** 75 h

## CONTENTS

### Module 1- BIM Management: Context and Practices

#### Description:

What is BIM? How can BIM be a part of the building design process? This module presents the definition of BIM and the history of BIM on the architecture and engineering disciplines. This module covers the essentials of managing BIM projects, including principles, methodologies, regulations, processes, stages, and stakeholder roles. It also guides students in creating a BIM execution plan and understanding tender requirements. Moreover, it delves into the roles of BIM managers and coordinators, providing a comprehensive understanding of their responsibilities. The module also includes assessing BIM models for compliance with current standards.

#### Specific objectives:

-

#### Related activities:

-

#### Full-or-part-time: 15h

Theory classes: 6h

Self study : 9h

### Module 2: BIM data in design phase

#### Description:

In this module, we explore the benefits and uses of Building Information Modeling (BIM) in building projects during the design phase. BIM goes beyond just creating 3D models and offers advantages such as effective data management for energy analysis, optimizing project budgets, and integrating environmental considerations.

Additionally, the module offers practical guidance on how to develop the BIM Uses. It focuses on some uses such as cost management, creating detailed quantity lists, As-Built information, conducting energy simulations etc. The module also covers topics such as introducing data for circular economy initiatives and energy simulations.

#### Specific objectives:

-

#### Related activities:

-

#### Full-or-part-time: 30h

Theory classes: 12h

Self study : 18h

### Module 3: BIM management in the construction site

**Description:**

This module explores various BIM approaches and applications for the construction phase. It covers simulating construction schedules, buildability forecasting, clash detection, and 4D for efficient time management. Students will learn about new BIM tools for construction phases, actively participate in tasks, and understand how BIM technology improves project management and construction processes. The module also emphasizes the importance of information for facility management, providing at the end a broad perspective on the entire life cycle of a building.

**Specific objectives:**

-

**Related activities:**

-

**Full-or-part-time:** 30h

Theory classes: 12h

Self study : 18h

## GRADING SYSTEM

---

- \* 30%, Activities module 1
- \* 35%, Activities module 2
- \* 35%, Activities module 3

## BIBLIOGRAPHY

---

**Basic:**

- Eastman, Charles M.. BIM Handbook: A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers and Contractors. 2011. John Wiley & Sons,
- Hosseini, M. Reza, Farzad Khosrowshahi, Ajibade Aibinu, et Sepehr Abrishami. BIM Teaching and Learning Handbook: Implementation for Students and Educators.. 2021. Routledge.,
- Baldwin, Mark. Nou llibreThe BIM-Manager: A Practical Guide for BIM Project Management. 2019. Beuth Verlag,

## RESOURCES

---

**Other resources:**

Class material.