

## EUROPASS SUPPLEMENT TO THE CERTIFICATE OF THE HIGHER DEGREE SPECIALIZATION COURSE

### NAME OF THE SPECIALIZATION COURSE

*Advanced Vocational Training Specialization Course in Building Information Modeling (BIM)*

---

### DESCRIPTION OF THE SPECIALIZATION COURSE

#### **The holder has acquired the general competence relating to:**

Develop and model the graphic and non-graphic information of Architecture, Engineering and Construction projects under the BIM methodology in its different dimensions, as well as collaborate in the project processes, respecting the client's requirements (EIR, Employer's Information Requirements) and the prescriptions established in the BIM Execution Plan (BEP, Building Execution Plan), among others.

#### **Within this framework, each PROFESSIONAL MODULE includes the following LEARNING OUTCOMES acquired by the holder.**

##### **"BIM Methodology.**

The titleholder:

- Establishes the content of the BIM execution plan by determining the scope and processes of the project.
- Characterizes work processes with interoperable applications under the BIM methodology, determining the workflows that comply with the requirements established in the BIM execution plan'.
- Operates native BIM and IFC files using different software platforms to achieve project objectives.
- Manages project deliverables and communications using cloud-based platforms, leaving traceability of information exchange.
- Reviews and analyzes BIM projects detecting possible collisions, making measurements, between the different specialties and reports them proposing solutions.
- Model the current state of sites by applying 3D scanning and digitizing techniques of the environment and inputting them into the BIM model.

##### **"Models of architecture and structures".**

The titleholder:

- Develops templates for information modeling in architecture and structures establishing the formats, families and elements necessary to achieve the objectives established in the BIM execution plan of different projects.
- Models architectural projects and objects by entering graphical and nongraphical project information according to the specifications established in the BIM execution plan.
- Models projects and structural objects by entering graphical and nongraphical project information according to the specifications established in the BIM execution plan.
- Documents all model information by generating tables and drawings from the BIM models of the Project model.

### **"Mechanical installation models and sustainability".**

The titleholder:

- Develops templates for the modeling of mechanical installation information establishing the formats, families and elements necessary to achieve the objectives established in the BIM execution plan of the project.
- Models graphical and nongraphical information of water supply and drainage facilities by introducing the necessary parameters for the proper functioning of the virtual model, as well as compliance with the requirements of the BIM implementation plan.
- Models HVAC (Heating, ventilation and air conditioning) installations by entering graphical and nongraphical information with the necessary parameters for the proper functioning of the model, as well as compliance with the requirements of the BIM execution plan.
- Analyzes the sustainability and energy efficiency conditions of projects (6D) under the methodology BIM simulating energetic information models.
- Document all model information by generating tables and drawings from the BIM models of the project.

### **"Models of electrical installations and communications".**

The titleholder:

- Develops templates for the modeling of electrical, lighting and communications information, establishing the formats, families and elements necessary to achieve the objectives established in the BIM execution plan of the project.
- Models electrical installations by determining the required parameters and entering the graphical and nongraphical information as set out in the BIM implementation plan.
- Models lighting installations by sizing equipment based on environmental conditions and technical characteristics of suppliers.
- Models communications, CCTV, and fire detection and alarm systems, entering the necessary graphical and nongraphical information.
- Document all model information by generating tables and drawings from the BIM models of the project.

### **"Control, management and budgets".**

The titleholder:

- Organizes the workspace for the control and management of projects (4D) and their budget (5D) establishing the schedule of the different phases, as well as the prices related to the BIM model.
- Models project planning and control processes by relating the required applications to the BIM model.
- Proposed construction and installation projects relating the BIM model with 5D computer applications and pricing databases.
- Documents the BIM model information by generating reports and visualizations relating the virtual model with the corresponding software.

## **JOBS THAT CAN BE PERFORMED WITH THIS SPECIALIZATION COURSE**

The most relevant occupations and jobs are as follows:

- BIM Modeler.
- BIM model coordinator.

## **CERTIFICATE ISSUANCE, ACCREDITATION AND LEVEL**

**Body issuing the certificate of the higher degree specialization course on behalf of the King:** Ministry of Education and Vocational Training or the autonomous communities within the scope of their own competences. The certificate has academic and professional effects valid throughout the State.

**Official course duration:** 600 hours.

**Certificate level (national or international).**

- NATIONAL: Non-university higher education.
- INTERNATIONAL:
  - Level P-5.5.4 of the International Standard Classification of Education (ISCED P-5.5.4).
  - Level 5C of the European Qualifications Framework (EQF 5C).

**Access requirements:**

To access the specialization course in Building Information Modeling (BIM) it is necessary to hold one of the following degrees:

- a) Degree of Higher Technician in Metallic Constructions, established by Royal Decree 174/2008, of February 8.
- b) Degree of Higher Technician in Development of Thermal and Fluids Installations Projects, established by Royal Decree 219/2008, of February 15, 2008.
- c) Degree of Higher Technician in Maintenance of Thermal and Fluids Installations, established by Royal Decree 220/2008, of February 15, 2008.
- d) Degree of Higher Technician in Energy Efficiency and Solar Thermal Energy, established by Royal Decree of Decree 1177/2008, of July 11.
- e) Degree of Higher Technician in Building Projects, established by Royal Decree 690/2010, of May 20.
- f) Degree of Higher Technician in Electrotechnical and Automated Systems, established by Royal Decree 1127/2010, of September 10.
- g) Degree of Higher Technician in Power Plants, established by Royal Decree 258/2011, of February 28.
- h) Degree of Higher Technician in Renewable Energies, established by Royal Decree 385/2011, of March 18.
- i) Higher Senior Technician in Civil Works Projects, established by Royal Decree 386/2011, of March 18.
- j) Degree of Higher Technician in Telecommunication and Computer Systems, established by Royal Decree 883/2011, of June 24.
- k) Title of Higher Technician in Industrial Mechatronics, established by Royal Decree 1576/2011, of November 4.
- l) Degree of Higher Technician in Automation and Industrial Robotics, established by Royal Decree 1581/2011, of November 4.
- m) Degree of Higher Technician in Organization and Control of Construction Works, established by the Royal Decree 636/2015, of July 10.
- n) Degree of Higher Technician in water management, established by Royal Decree 113/2017, of February 17.

**Legal Basis.** Regulations establishing the specialization course in Building Information Modeling (BIM): Minimum teaching requirements established by the State: Royal Decree 263/2021, of April 13, establishing the Specialization Course in Building Information Modeling (BIM) and setting the basic aspects of the curriculum.

**Explanatory note:** This document is intended as additional information to the title in question, but has no legal validity whatsoever.

**TRAINING OF THE OFFICIALLY RECOGNIZED SPECIALIZATION COURSE**

<b>PROFESSIONAL MODULES OF THE ROYAL DECREE OF THE HIGHER GRADE SPECIALIZATION COURSE</b>	<b>ECTS CREDITS</b>
BIM Methodology	6
Models of architecture and structures	9
Mechanical installation models and sustainability	9
Models of electrical installations and communications	7
Control, management and budgets	5
	TOTAL CREDITS
	<b>36</b>
OFFICIAL DURATION OF THE SPECIALIZATION COURSE CERTIFICATE (HOURS)	<b>600</b>

\* The minimum teaching requirements for the specialization course reflected in the table above, 50%, are valid throughout the national territory. The remaining 50% belongs to each Autonomous Community and may be reflected in **Annex I** of this supplement.

### INFORMATION ABOUT THE EDUCATION SYSTEM

