

Máster online 100%

# Master in BIM Applied to Building + 60 ECTS Credits

Structuralia

Máster online 100%

# Master in BIM Applied to Building + 60 ECTS Credits

Modality
**Online**

Languages
**Español**

Duration
**1500 hours (60 ECTS)**

No Limit
**AI Assistant**

Does it include practices?
**NO**

Educational Institutions

Structuralia Engineering eLearning

UNIVERSIDAD NEBRIJA

## Summary

This program offers a comprehensive vision of BIM processes, from their initial conception to the completion of a project's life cycle. Prepares to face the current and future challenges of the sector, promoting digital transformation in the way projects are conceived and executed. From the fundamental concepts of BIM and its applications, to advanced modeling with Autodesk Revit, you gain the skills to create accurate architectural, structural and facility models. This specialization allows digital models to be used in critical uses such as project coordination, cost estimation, construction planning, health and safety management, and energy analysis. It makes it easy to master the application of the BIM methodology in each phase of design, development and documentation generation, ensuring efficient and optimized execution. With this master's degree, you consolidate your profile as an expert capable of leading innovation in the field of construction, providing strategic value at each stage of the project and guaranteeing coherence and quality in the information generated.

# Agenda

## MODULE 1. BIM. INTRODUCTION TO BIM

### 1. DIDACTIC UNIT 1. FUNDAMENTAL CONCEPTS.

1. What is BIM: digitization, processes, communication.
2. Development stages, possible uses of a BIM model and work teams.
3. Viewing IFC Models
4. Federation of models
5. CDE (Common Data Environment), BIM 360.

### 2. DIDACTIC UNIT 2. APPLICATIONS

1. Data collection.
2. Photogrammetry, point clouds Modeling: coordination, analysis and documentation (3D).
3. Cost control (5D).
4. Construction planning (4D).
5. Other uses and dimensions.

## MODULE 2. BIM. REVIT 1 BASICS

### 1. DIDACTIC UNIT 1. MAKING CONTACT

1. Introduction; graphical environment.
2. Parametric objects.
3. Views
4. Project start; levels, grids and insert references.
5. Location and orientation.

### 2. DIDACTIC UNIT 2. BASIC ELEMENTS.

1. Editing model elements.
2. Visualization editing.
3. Annotations.
4. Quantification.
5. Publication.

## MODULE 3. BIM. BASIC ARCHITECTURE MODELING IN REVIT

### 1. DIDACTIC UNIT 1. ELEMENTS OF ARCHITECTURE (I).

1. Beginning of architectural modeling.
2. Soils and land.
3. Walls, pillars and holes.
4. Covers and roofs.
5. Connect elements.

### 2. DIDACTIC UNIT 2. ELEMENTS OF ARCHITECTURE (II).

1. Stairs and ramps.

2. Curtain walls and glazed roofs.
3. Railings.
4. Components.
5. Rooms

## MODULE 4. BIM. BASIC MODELING OF STRUCTURES IN REVIT

### 1. DIDACTIC UNIT 1. STRUCTURAL MODELING ELEMENTS.

1. General concepts.
2. Vertical lift.
3. Horizontal lift (I).
4. Horizontal lift (II).
5. Foundation elements.

### 2. DIDACTIC UNIT 2. STRUCTURAL SYSTEMS.

1. Beam systems.
2. Lattice beams.
3. Structural systems (I).
4. Structural systems (II).
5. Preparation for analysis.

## MODULE 5. BIM. BASIC MODELING OF FACILITIES IN REVIT

### 1. DIDACTIC UNIT 1. BASIC CONCEPTS OF MEP MODELING (I).

1. Start of the facilities model.
2. MEP systems.
3. Configuration of the mechanical discipline.
4. Ducts, joints, accessories and insulation.
5. Terminals and mechanical equipment.

### 2. DIDACTIC UNIT 2. BASIC CONCEPTS OF MEP MODELING (II).

1. Setting up the plumbing discipline.
2. Pipes, joints, accessories and insulation.
3. Sanitary appliances and plumbing equipment.
4. Configuration of the electrical discipline.
5. Trays, tubes and cables.
6. Appliances and equipment.

## MODULE 6. BIM. REVIT MODEL MANAGEMENT

### 1. DIDACTIC UNIT 1. DATA MANAGEMENT.

1. Data management.
2. Graphic management.
3. Advanced visualization.
4. Advanced quantification.
5. Advanced publishing.

### 2. DIDACTIC UNIT 2. ORGANIZATION AND REVIEW OF THE MODEL.

1. Groups and links.
2. Design options.
3. Phases.
4. Shared use.
5. Model audit.

## MODULE 7. BIM. ELEMENTS OF THE BIM METHODOLOGY

### 1. DIDACTIC UNIT 1. FUNDAMENTALS OF THE BIM METHODOLOGY.

1. Stages of the asset life cycle.
2. Agents participating in BIM processes.
3. BIM objectives and uses.
4. Definition of information in the BIM project.

### 2. DIDACTIC UNIT 2. INFORMATION PRODUCTION.

1. Information creation rules.
2. Information level
3. Information production methods.

### 3. DIDACTIC UNIT 3. INFORMATION EXCHANGE.

1. Centralized information management.
2. Documents for the exchange of information.
3. Information exchange process.

## MODULE 8. BIM. BIM INTEROPERABILITY

### 1. DIDACTIC UNIT 1. EXPORT OF BIM MODELS.

1. Export to traditional formats.
2. Basic concepts of the IFC format.
3. Importing IFC files into Revit.
4. Exporting IFC files in Revit.
5. Model exchange at Autodesk.

### 2. DIDACTIC UNIT 2. BIM MODEL VIEWERS.

1. BIMvision.
2. BIMcollab.
3. DDS-CAD Viewer.
4. CellBIM Viewer.
5. Autodesk Viewer.

## MODULE 9. BIM. CAPTURE AND MODELING OF REALITY

### 1. DIDACTIC UNIT 1. INTRODUCTION TO POINT CLOUD.

1. Work in environment.
2. Revit with point cloud Introduction and laser scanner methodology.
3. Point cloud link and export.
4. Revit point cloud import.
5. Walls, doors and windows in CloudWorx.

6. Pipes with CloudWorx.

### 2. DIDACTIC UNIT 2. POINT CLOUD MODELING AND INSPECTION.

1. Cyclone 3DR.
2. Delineation and point cloud modeling in Cyclone 3DR.
3. Comparison of IFC model with MDT and Script point cloud.
4. Tunnel inspection.

## MODULE 10. BIM. BIM FOR COORDINATION AND COST ESTIMATION

### 1. DIDACTIC UNIT 1. PROJECT PLANNING. PREPARATION OF SOFTWARE COMPONENTS

1. Project Planning: preparation of the software components necessary for integration with access control and parking management systems
2. Project Planning: preparation of the software components necessary for integration with the air conditioning, lighting and billing systems
3. Project Planning: preparation of operational modules that do not require integration with third-party systems
4. Planning of user interfaces and pre-production tests
5. Planning tool. Microsoft Project

### 2. DIDACTIC UNIT 2. PROJECT PLANNING: INSTALLATION OF SMART BUILDING SOLUTIONS WITHIN THE BUILDING

1. Installation of physical infrastructure
2. Third party review of physical infrastructure
3. Deployment of the software platform. Basic components, access control and parking
4. Deployment of the software platform. Air conditioning, billing and user services
5. Onboarding

### 3. DIDACTIC UNIT 3. PROJECT BUDGETING

1. Budgeting of the necessary physical infrastructures
2. Base infrastructure budgeting: IoT sensors
3. Base infrastructure budgeting: networks and hardware
4. Budgeting of the base software applications for smart building management
5. Budgeting of access control software applications, air conditioning and lighting management. Installation maintenance service budget

### 4. DIDACTIC UNIT 4. PROJECT GOVERNANCE

1. Project team: management, business experts and software profiles
2. Project team: installers, information exploiters and support teams
3. Support service management
4. Project Monitoring
5. Project risk management"

## MODULE 11. BIM. BIM FOR CONSTRUCTION PLANNING

### 1. DIDACTIC UNIT 1. 4D PLANNING.

1. The Work Breakdown Structure (WBS).

2. Activity codes, reMODULES and performance rules.
3. Costs and monitor the progress of tasks.
4. Model import and basic 4D linking.
5. Advanced 4D linking.

### 2. DIDACTIC UNIT 2. SECURITY PLANNING, 4D ANIMATION AND CONTROL OF PROJECT PROGRESS.

1. Use of equipment and 3D tours.
2. Security planning.
3. 4D animation.
4. Synchronize models and programming.
5. User field graphs and 4D reports.

## MODULE 12. BIM. SAFETY AND HEALTH MODELING

### 1. DIDACTIC UNIT 1. MODELING FOR BIM SAFETY AND HEALTH.

1. Modeling for construction planning.
2. Work chapters in Revit.
3. Risk assessment on site.
4. Modeling of fenced collections and signage.
5. Modeling scaffolding projects in Revit.

### 2. DIDACTIC UNIT 2. BIM SAFETY AND HEALTH ON THE SITE.

1. Graphic documentation of the project.
2. Visualization of BIM models on site.
3. Basic health and safety project.
4. Applicable regulations.
5. Personalized family creation.

## MODULE 13. BIM. REVIT II BASICS

### 1. DIDACTIC UNIT 1. ADVANCED GRAPHIC TECHNIQUES.

1. Materials library.
2. Customization 2D views.
3. Location plans and construction details.
4. 3D views, tours.
5. Rendered.

### 2. DIDACTIC UNIT 2. REVIT FAMILIES.

1. Families: nature and classification.
2. Management of parameters in families.
3. In situ mass and conceptual mass.
4. Pattern-based components.
5. Adaptive components.

## MODULE 14. BIM. THE ARCHITECTURE PROJECT IN REVIT

### 2. DIDACTIC UNIT 2. ARCHITECTURE FAMILIES.

1. Curtain walls.
2. Windows.
3. Doors.
4. Execution project documents (I).
5. Execution project documents (II).

## MODULE 15. BIM. THE STRUCTURE PROJECT IN REVIT

### 1. DIDACTIC UNIT 1. ASSEMBLY AND DETAILING OF STRUCTURES.

1. - Armed.
2. - Fundamentals.
3. - Assembly of linear and surface elements.
4. - Meetings of steel and wood structures.
5. - Meetings of steel and wood structures: application.
6. - Meetings of steel and wood structures: cuts and holes.

### 2. DIDACTIC UNIT 2. CALCULATION AND DOCUMENTATION.

1. - Mechanical properties, parameters and surface treatments.
2. - Interoperability with calculation programs (I).
3. - Interoperability with calculation programs (II).
4. - Plans of concrete structures.
5. - Armed.
6. - Steel and wood structure plans.

## MODULE 16. BIM. ENERGY SAVING

### 1. DIDACTIC UNIT 1. ENERGY CALCULATIONS IN REVIT

1. Introduction to energy simulation with Revit
2. Create Revit spaces
3. Create analytical systems in Revit
4. Create system zones in Revit
5. Create energy models in Revit

### 2. DIDACTIC UNIT 2. ENERGY CALCULATIONS WITH CYPE

1. BIMserver Center and OpenBIM
2. OpenBIM Construction Systems
3. CYPETHERM HE interface
4. Calculations with CYPETHERM HE
5. Lighting calculation with CYPELUX.

## MODULE 17. BIM. THE FACILITIES PROJECT IN REVIT

### 1. DIDACTIC UNIT 1. REVIT MEP (I). MODELING

1. Initial configuration of the BIM model of facilities. Introduction to the implementation of systems in the BIM model and systems navigator
2. Introduction and modeling of plumbing and sanitation installation
3. Introduction and modeling of the air conditioning installation
4. Introduction and modeling of the electricity installation
5. Fabrication parts and planning tables (measurements)

## 2. DIDACTIC UNIT 2. REVIT MEP (II). FAMILIES

1. Introduction to MEP families
2. Procedure for creating MEP families (I)
3. Procedure for creating MEP families (II)
4. Procedure for creating MEP families (III)
5. MEP family in Revit project

## 3. DIDACTIC UNIT 3. REVIT MEP (III). CALCULATIONS

1. Introduction to calculation and analysis with Revit MEP
2. Ventilation and air conditioning calculations. Duct networks
3. Air conditioning calculation. Pipe networks
4. Plumbing calculation (cold water and DHW)
5. Analysis of electrical panels

## 4. DIDACTIC UNIT 4. MEP INTEROPERABILITY

1. Revit interoperability with installation calculation software
2. Interoperability between Revit and CYPECAD MEP
3. Interoperability between Revit and Caneco BIM
4. Interoperability between Revit and DIALux EVO
5. Interoperability between Revit and TeKton

# MODULE 18. TFM. MASTER BIM APPLIED TO BUILDING

## Qualification

University Degree in Master of Lifelong Training in BIM Applied to Building issued by the Antonio de Nebrija University with 60 ECTS University Credits. Teachings not leading to obtaining an official qualification

## Objectives

- • Consolidate a comprehensive understanding of BIM principles and their strategic application in the life cycle of construction projects. • Perfect the modeling of architectural, structural and facility projects with Autodesk Revit software. • Develop project coordination strategies based on digital models to optimize multidisciplinary collaboration. • Manage cost estimation and work planning using precise information from BIM models. • Evaluate the impact of BIM management on occupational health and safety, implementing preventive solutions from the design phase. • Analyze the energy performance of buildings through BIM models, proposing improvements for sustainability. • Apply the BIM methodology in the design, development and generation of technical documentation for construction projects. • Support decision making for the optimization of construction processes, relying on centralized information from the BIM environment.

## What does it prepare you for?

This program prepares you to lead the digital transformation in construction, providing you with the necessary skills to manage complex projects with a collaborative approach. Develop a comprehensive vision of BIM processes, from conceptualization to the creation of advanced construction models. It allows you to master modeling with Revit for architecture, structures and facilities, facilitating the generation of basic digital models and integrating federated models. Teaches how to use these models for BIM project coordination, cost estimation, construction planning, and health and safety management. It facilitates strategic decision making based on accurate data, optimizing project design, development and documentation, and increasing efficiency at every stage of the construction life cycle.

## Who is it addressed to?

Aimed at professionals in the building sector, including engineers, architects and technical architects, who are seeking advanced specialization in BIM project management. This master's degree is for those who work in construction and need to update their skills to integrate the BIM methodology into their daily practice. It allows you to master Revit modeling of architecture, structures and facilities, applying this knowledge to optimize the coordination and planning of works. Aimed at profiles seeking a strategic vision to face the future challenges of the sector, improving efficiency and quality in each phase of the building's life cycle.

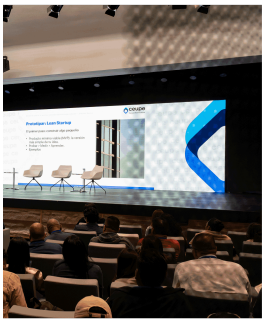
## Official Character

This training is not included within the scope of official regulated training (Early Childhood Education, Primary Education, Secondary Education, Official Vocational Training FP, Baccalaureate, University Degree, Master University Officer and Doctorate). It is therefore a complementary and/or specialization training, aimed at the acquisition of certain competencies, skills or aptitudes of a professional nature, which can be assessed as merit in job boards and/or competitive examinations, always within the section of Complementary Training and/or Continuous Training. It is always essential to review the specific grading requirements of the specific public job boards to which we wish to apply.

# Professional Outings

- Specialization in the BIM methodology strategically positions you in the building sector, opening doors to highly responsible roles. prepares you to assume roles as BIM Manager, leading multidisciplinary teams and optimizing workflows in construction companies and architecture studios. Also for BIM Coordinator roles, ensuring the integration of architectural models, structures and facilities, and proactively resolving interferences in complex projects. In addition, it allows you to work as a specialized BIM Consultant, advising organizations on the adoption and standardization of BIM processes, or as Project Manager with BIM Methodology, managing the complete life cycle of the building with advanced tools such as Revit. Likewise, it qualifies for the role of Advanced BIM Modeling Specialist, focused on the creation and management of complex models for specific analyses. This training drives the professional profile towards efficiency and innovation in any phase of the construction project.







Live Madrid

# Live the International Week

As an additional complement to your training, you can be part of the SIM: Week International in Madrid. A unique meeting that brings together students from all over the world. For seven days you can live an academic and cultural experience in the heart of Europe, culminating with the graduation ceremony in Madrid.

- Conferences and workshops with international experts
- Visits to companies and reference organizations
- Networking with students from different countries
- Cultural activities and discovery of Madrid
- graduation ceremony

# Structural

Structuralia is a leading educational institution in postgraduate and highly specialized online training, focused on the fields of engineering, architecture, construction, energy, technology and digital transformation.

Founded in 2001 with a strong industrial DNA, the result of collaboration between large companies in the sector and the Universitat Politècnica de Catalunya (UPC), for more than 25 years we have accompanied technical professionals in their academic and professional development through practical, flexible training aligned with the reality of the labor market.

Our training proposal connects advanced technical knowledge, real employability and international projection, acting as key support in the professional evolution of those seeking to specialize, grow professionally and generate impact in their sector, with a firm commitment to the democratization of access to technical excellence.



+350.000

Students have gone through our virtual classrooms



+20 years

Experience in the training sector



5 stars

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EDUCA EDTECH Group leads the digital revolution in education, promoting the continuous learning and technological transformation. The group is made up of recognized training institutions and its mission is to democratize access to education, promote the transfer of knowledge, technological development and research.

With the experience accumulated over more than 20 years, we have perfected our learning platform EDUCA LXP (Learning Experience Platform), the basis of our educational methodology, which provides students with online training practical and meaningful.



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## Funding and scholarships

Finance your course or master's degree and enjoy the available scholarships. Contact our expert team to know which one best suits your profile.

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