

Course guide

210517 - BIM - Bim for the Multidisciplinary Project

Last modified: 08/07/2024

Unit in charge: Barcelona School of Architecture
Teaching unit: 753 - TA - Department of Architectural Technology.
Degree: MASTER'S DEGREE IN ARCHITECTURE (Syllabus 2015). (Optional subject).
Academic year: 2024 **ECTS Credits:** 5.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: ELOI COLOMA PICÓ - ALEJANDRO GAUTHIER AMIGO

Others: Primer quadrimestre:
ELOI COLOMA PICÓ - M1
ALEJANDRO GAUTHIER AMIGO - M1

PRIOR SKILLS

Basic knowledge about computer tool, notions of architectural project development.

REQUIREMENTS

The student will need to install specific software on their personal computers. Specifically, Revit and Navisworks 2021 or higher, BIM Vision and BIM Collab Zoom. The first two require students to register on the Autodesk student portal, and the other two are free.

TEACHING METHODOLOGY

The learning will be carried out from workshops where contents will be explained and some practices will be done from a material pre-elaborated by the teacher. Also, in some cases, audiovisual learning material may be provided to be studied before attending class.

LEARNING OBJECTIVES OF THE SUBJECT

- Develop a project from a multidisciplinary perspective.
- Develop a project in a non-linear way, optimizing each step to obtain the maximum with the minimum of effort.
- Coordinate with other team members through protocols that allow them to move forward week by week.
- Communicate with the customer effectively without the need to print plans and through online platforms.
- Use digital collaboration environments, to be able to work in a team remotely using BIM tools.
- Use communication tools to manage conversations related to various topics effectively and efficiently.
- Know how to use open format to visualize the project and submit it to various analyzes, such as the cost of execution of the works.
- Understand how BIM is carried out, so that the work done during the drafting of the project is successful.

STUDY LOAD

Type	Hours	Percentage
Hours large group	30,0	24.00
Self study	95,0	76.00

Total learning time: 125 h

CONTENTS

BIM for the multidisciplinary project

Description:

Since the public administration has begun to include the use of Building Information Modeling as a mandatory requirement in the drafting of projects, BIM is being implemented at a high speed in architectural firms.

One of the great challenges of this process is to learn to coordinate other teams using new tools and work methodologies, to achieve the expectations that customers have in terms of improving the functional, economic and constructive viability of their proposals.

This course aims to train students with the use of BIM for architectural design from the perspective of interdisciplinary collaboration, the analysis of the quantifiable requirements of the project and the improvement of the constructibility of the proposal, in order to add value to both its public and private customers.

Specific objectives:

- Develop a project from a multidisciplinary perspective.
- Develop a project in a non-linear way, optimizing each step to obtain the maximum with the minimum of effort.
- Coordinate with other team members through protocols that allow them to move forward week by week.
- Communicate with the customer effectively without the need to print plans and through online platforms.
- Use digital collaboration environments, in order to be able to work in a team remotely using BIM tools.
- Use communication tools to manage conversations related to various topics in an effective and efficient way.
- Know how to use an open format to visualize the project and submit it to various analyzes, such as the cost of execution of the works.
- Understand how BIM is carried out, so that the work done during the drafting of the project is successful.

Related activities:

- Development of multidisciplinary projects through collaborative processes.
- Agreement of purposes and objectives. Development of modifications in a project in short review cycles.
- Digital collaboration environments. Use and configuration.
- Tools for reviewing projects represented with BIM models.
- Model-oriented incident management.
- Document-oriented document management.
- Collaborative design using BIM.
- Iterative and incremental design.
- Techniques to involve the client in decision making.
- Organization of internal and shared work.
- Use of open formats in the BIM environment.
- Export to open formats from BIM models.
- Iterative calculation of the cost of the project.
- BIM on the field.

Full-or-part-time: 45h

Theory classes: 15h

Laboratory classes: 30h

GRADING SYSTEM

The course will be evaluated based on a groupal work that they will have to present. However, some parts of this work will be evaluated individually, while others will be done collectively.

Continuous assessment: Continuous assessment will be based on the work carried out by the student during the academic year, through the submission of assignments or the performance of written and/or oral tests, according to the criteria and timetable established.

Final assessment: If the continuous assessment is not positive, a second assessment may be carried out, which will consist of a final overall test in the established methodology according to the criteria of the lecturer in charge (written or oral test and/or submission of assignments).



EXAMINATION RULES.

Content that can be evaluated by the delivery of material must be delivered on time on the agreed date. In the part that is evaluated through an oral presentation, the whole team will have to participate.

BIBLIOGRAPHY

Basic:

- Jernigan, Finith E. Big BIM, little BIM : the practical aproach to building information modeling : integrated practice done the right way. 2nd ed. Salisbury, MD: 4Site Press, cop. 2008. ISBN 9780979569920.
- Deutsch, Randy; American Institute of Architects. BIM and integrated design. Boston etc: The American Institute of Architects, cop. 2011. ISBN 9780470572511.
- Eastman, Charles M. BIM handbook : a guide to building information modeling for owners, managers, designers, engineers and contractors. 2nd ed. Hoboken New Jersey: Wiley, cop. 2011. ISBN 9780470541371.

Complementary:

- Lévy, François. BIM in small-scale sustainable design. New Jersey: John Wiley, 2012. ISBN 9780470590898.
- Kensek, Karen M., 1962-; Noble, Douglas, 1959-. Building information modeling : BIM in current and future practice. Indianapolis, IN: Wiley, cop. 2014. ISBN 9781118766309.