Course guide
310772 - 310772 - Introduction to Lean Construction

Last modified: 15/05/2023

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

Degree: BACHELOR'S DEGREE IN ARCHITECTURAL TECHNOLOGY AND BUILDING CONSTRUCTION (Syllabus 2019). (Optional subject).

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

LECTURER

Coordinating lecturer: Víctor Roig

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
FE-11. FE-11 Ability to write manuals and maintenance plans and manage its implementation in the building.
FE-12. FE-12 Knowledge of the evaluation of the environmental impact of the construcion and demolition, the sustainability in the construction, and the procedures and techniques to evaluate the energetic efficiency of the buildings.
FE-17. FE-17 Ability to schedule and organise the constructive processes, the construction teams, the technical and human means for its execution and maintenance.

Transversal:
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.
06 URI. EFFECTIVE USE OF INFORMATION RESOURCES. Managing the acquisition, structure, analysis and display of information from the own field of specialization. Taking a critical stance with regard to the results obtained.

TEACHING METHODOLOGY

Theoretical classes where the faculty will teach the theoretical and practical contents of the subject.
Practical class: the students, in work groups, must solve the problems presented to the class and present them in front of the class.
Self-study: Students diagnose their learning needs, in collaboration with the lecturers, and plan their own learning process.

LEARNING OBJECTIVES OF THE SUBJECT

The aim of this course is to teach the subject related to new techniques for production management on the construction sector, providing students with both a theoretical and practical vision. The course takes a holistic approach to the building life cycle, including design, construction, management, maintenance and sustainability, with an emphasis on collaborative management practices.

STUDY LOAD

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

Total learning time: 75 h

CONTENTS

Introducing Lean Construction

Description:
This content works on:
-The origins of the LEAN philosophy and its basic principles.
-The singularities of the construction sector.
-The foundations of LEAN construction.

Specific objectives:
Knowing the origins and principles of Lean Thought and understand construction waste.

Full-or-part-time: 15h
Theory classes: 2h 15m
Practical classes: 3h 45m
Self study : 9h

Basic notions of LEAN techniques and tools

Description:
In this content we work on:
- Lean techniques that are applicable in the construction sector.
- Tools related to the Lean techniques studied

Specific objectives:
Knowing Lean techniques and tools applicable in the construction sector.
Practical application of Lean techniques and tools

Related activities:
Theoretical sessions and practical workshops for the application of techniques and tools.

Full-or-part-time: 45h
Theory classes: 6h 45m
Practical classes: 11h 15m
Self study : 27h

Characteristics of a Lean project

Description:
In this content we work on:
- The stages of a Lean project
- The roles and responsibilities of the agents
- Lean project management systems

Specific objectives:
Know the differences between traditional and LEAN projects.
Changes in the traditional phases of a project

Related activities:
Theoretical sessions and practical workshops

Full-or-part-time: 15h
Theory classes: 3h
Practical classes: 3h
Self study : 9h

GRADING SYSTEM

Continuous assessment about the practical exercises that are developed during the classes (20%)
Mid-term work (35%)
Final work (45%)

BIBLIOGRAPHY

Basic:
- Pons, Juan Felipe ; Rubio, Iván. Lean Construction y la planificación colaborativa [on line]. 1a. Madrid: Consejo General de la Arquitectura Técnica de España, 2019 [Consultation: 27/07/2023]. Available on: https://www.cgate.es/pdf/LEAN%20CONSTRUCTION%20PDF%20Web.pdf. ISBN 978-84-09-10609-7.
- Ayats Pérez, Cristina. Lean: diseño y construcción. 1a. Ejido: Círculo Rojo, 2015. ISBN 9788491157960.
- Pons Achel, Juan Felipe. Introducción al Lean Construction [on line]. 1a ed. Madrid: Fundación Laboral de la Construcción, 2014 [Consultation: 27/07/2023]. Available on: http://www.juanfelipepons.com/wp-content/uploads/2017/02/Introduccion-al-Lean-Construction-1.pdf.

Complementary:
- O'Connor, R. Swain, B. Implementing Lean in construction : Lean tools and techniques - an introduction [on line]. London: CIRIA, 2013 [Consultation: 27/07/2023]. Available on: https://leanconstruction.org.uk/wp-content/uploads/2018/09/C730-Lean-tools-hi.pdf. ISBN ISBIN 978-0-86017-732-6.