

Quality Management (250718)

General Information

School	ETSECCPB
Departments	Departament d'Enginyeria Civil i Ambiental (DECA) Departament d'Enginyeria de Projectes i de la Construcció (EPC)
Credits	5.0 ECTS
Programs	MÀSTER UNIVERSITARI EN ENGINYERIA ESTRUCTURAL I DE LA CONSTRUCCIÓ (pla 2015)
Course	2024/25

Main teaching language at each group

- Group 10ES2 Spanish (Q2)

Faculty

Responsible Faculty: Nuria Forcada Matheu
Faculty: Nuria Forcada Matheu

Objectives of Education

Subject to give a clear vision of quality in construction

- Capability to interpret the results of in situ tests in structures and laboratory tests. - Capability to perform management and quality assurance in construction .

The quality of construction. The life cycle of a construction project . The management of construction projects. The Project Manager and his functions. Management models. Types and methods of recruitment. Evolution of the concept of quality. Quality and costs. Regulation and infrastructure for quality. Standardization. Certification. Introduction to the ISO 9000 family. Implementation of a system of quality management. Development of a Quality Manual. Structure and content of the Quality Plans . Audits . Integration of management systems : quality, safety and environment. Quality control in the construction project, materials, execution, installation, concrete works .

This course aims to give an overview of the systems and tools for quality management and control in projects and organizations linked to the construction sector.

Currently the quality represents a strategic value and differentiation in all companies. The characteristics of the construction sector and the lack of training has led to the construction companies encounter difficulties in developing appropriate systems of quality management. The aim of this course is therefore that students know the importance of proper quality management for obtaining professional success and corporate survival and to become familiar with technologies for quality management. The subject also covers aspects of support infrastructures and national and international regulations.

The course covers practical areas of knowledge, so that students can analyze situations that arise in their professional lives and provide possible solutions. In the course we can distinguish three areas to acquire the basis for development of suitable skills:

- Quality Management Systems.
- Quality Control and Management tools.
- Analysis, control and quality improvement.

Competencies

Especific

To apply innovative and sustainable technological aspects in the management and implementation of projects and works.

To analyze the multiple technical and legal conditions arising in the construction of public works, and use proven methods and proven technologies with the aim of achieving greater efficiency in construction while respecting the environment and protecting the safety and health of workers and users of public works.

Generic

To conceive, design, analyze and manage structures or structural elements of civil engineering or building, encouraging innovation and the advance of knowledge.

To develop, improve and use conventional materials and new construction techniques to ensure the safety requirements, functionality, durability and sustainability.

To define construction processes and methods of organization and management of projects and works.

To design plans for safety, quality and environmental and socioeconomic impacts related to the construction process.

Total hours of student work

		Hours	Percentage
Supervised Learning	Large group	25.5 h	56.67 %
	Medium group	9.75 h	21.67 %
	Laboratory classes	9.75 h	21.67 %
	Guided Activities	0.0 h	0.00 %
Self Study		80.0 h	

Contents

INTRODUCTION

Introduction to the construction sector

Introduction to the quality concept

QUALITY MANAGEMENT SYSTEMS

Quality Assurance Measures

Quality Management Systems ISO 9000 / ISO 21500

Tools for quality management and control

Lean Management

ANALYSIS CONTROL AND QUALITY IMPROVEMENT

Quality Management in the design stage

Quality Management in the construction stage

Quality Management in the operational and maintenance stage

BIM for quality management

Non-quality costs

Assessment

Teaching Methodology

The course is based on face to face sessions where the teacher will present the concepts and basic materials, examples and exercises. Support material will be available through the virtual campus ATENEA: content, programming, evaluation activities and bibliography.

Although most of the sessions will be given in the language indicated, sessions supported by other occasional guest experts may be held in other languages.

Grading Rules

() The evaluation calendar and grading rules will be approved before the start of the course.*

The subject evaluation consists on a continuous evaluation based on several activities.

These activities are both individual or groupc activites to be done during the course (during classes or at home).

Test Rules

Failure to perform an assessment activity in the scheduled period will result in a mark of zero in that activity.

Office Hours

Negotiable.

Bibliography

Basic

- García Meseguer, A. [Fundamentos de calidad en construcción](#). Sevilla: Fundación Cultural del Colegio Oficial de Aparejadores y Arquitectos Técnicos de Sevilla, 2001. ISBN 8495278219.
- ISO. Normas ISO 9000:2015: sistemas de gestión de la calidad: fundamentos y vocabulario. AENOR, 2015.