

## Course guide

# 240ST1024 - 240ST1024 - Quality Management in the Supply Chain

Last modified: 13/03/2025

**Unit in charge:** Barcelona School of Industrial Engineering  
**Teaching unit:** 732 - OE - Department of Management.

**Degree:** MASTER'S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2014). (Optional subject).  
MASTER'S DEGREE IN SUPPLY CHAIN, TRANSPORT AND MOBILITY MANAGEMENT (Syllabus 2014). (Optional subject).  
MASTER'S DEGREE IN MANAGEMENT ENGINEERING (Syllabus 2021). (Optional subject).

**Academic year:** 2025 **ECTS Credits:** 5.0 **Languages:** English

## LECTURER

**Coordinating lecturer:** Mateo Doll, Manuel

**Others:** Cuevas Baquero, Daniel

## TEACHING METHODOLOGY

A teaching-learning methodology is used that combines the teacher's theoretical explanations with activities and cases in which the student puts into practice the theoretical concepts explained in the classroom.

In addition, the student will prepare presentations of some theoretical parts with practical applications, individually and in small groups.

## LEARNING OBJECTIVES OF THE SUBJECT

Students will learn the concepts related to quality management to be able to implement a quality management system based on the ISO 9001 standard, which guarantees customer satisfaction through planning, assurance, control and improvement of quality in the company.

At the end of the course the student will be able to:

- Understand the language and basic nomenclature used in the field of quality.
- Understand the three levels of quality (product/service, process and system) and apply them in the supply chain.
- Identify the client's requirements and transfer them to the organization.
- Identify the necessary processes to be able to fulfill the client's requirements and write the associated procedures.
- Define the necessary indicators to control and improve a logistics service.
- Apply the ISO 9001 quality management model in a logistics environment.
- Use the EFQM model as an improvement tool in the company.
- Carry out quality audits to control and improve the company's processes.
- Understand the role of the quality director and the necessary skills.

## STUDY LOAD

Type	Hours	Percentage
Hours small group	15,0	12.00
Hours large group	30,0	24.00
Self study	80,0	64.00

**Total learning time:** 125 h

## CONTENTS

### Topic 1: Introduction to quality

**Description:**

Concept of quality  
Internal and external customer  
No quality, no conformity, corrective actions, preventive actions, the 5 whys  
Historical evolution of quality  
Quality gurus  
The four activities of quality management: planning, assurance, control and quality improvement  
The three levels of quality: product/service, process, system

**Related activities:**

Activities  
Presentations

**Full-or-part-time:** 11h

Theory classes: 8h  
Practical classes: 3h

### Topic 2: Quality in products/services

**Description:**

Definition of the quality of a product or service  
Kano model  
GAP model  
Customer surveys  
Servqual

**Related activities:**

Activities  
Presentations

**Full-or-part-time:** 11h

Theory classes: 3h  
Practical classes: 8h

### Topic 3: Quality in processes

**Description:**

Process map  
Flow chart  
Process files  
Procedures  
indicators  
Daily lean meetings to review indicators  
Process risk analysis

**Related activities:**

Activities  
Practical exercises  
Presentations  
Test

**Full-or-part-time:** 8h

Theory classes: 3h  
Practical classes: 5h

#### Topic 4: Quality in systems

**Description:**

ISO 9001

Understanding of the organization and its context, understanding of the needs and expectations of the interested parties

Other quality standards

EFQM

**Related activities:**

Activities

Presentations

**Full-or-part-time:** 5h

Theory classes: 3h

Practical classes: 2h

#### Topic 5: Quality audits

**Description:**

Three types of audit: first part, second part, third part

Product, process, system audits

Phases for the development of an audit

Audit report

**Related activities:**

Activities

Presentations

**Full-or-part-time:** 5h

Theory classes: 3h

Practical classes: 2h

#### Topic 6: The profile of the quality director

**Description:**

Competences of the quality director

Qualification of the auditors

**Related activities:**

Activities

Practical exercises

Presentations

**Full-or-part-time:** 5h

Theory classes: 3h

Practical classes: 2h

## GRADING SYSTEM

The evaluation system is composed by:

- (1) Continuous evaluation in class through test (15%).
- (2) Class presentations of previously prepared topics (20%)
- (3) Work on quality management systems (40%)
- (4) Mid-term exam (25%)



## EXAMINATION RULES.

---

- \* Continuous evaluation: The assignments are presented in class.
- \* Class presentations: Each day, a different group presents a task (book summary by topics). They are notified in advance. This is explained at the beginning of the course and a schedule is fixed.
- \* Work on quality management systems: During the whole course, it is individual. Topics are presented along the course and a presentation is required at the end of the course.
- \* Mid-term exam: Topics 1 to 3 are assessed; this is done in a class day and anything can be used during the exam.

## BIBLIOGRAPHY

---

### Basic:

- Rizzi, Antonio. Supply chain : fundamentals and best practices to compete by leveraging the network [on line]. Cham: Springer, 2022 [ Consultation : 17/09/2025 ]. Available on : [discovery.upc.edu/view/action/uresolver.do?operation=resolveService&package\\_service\\_id=14913702830006711&institutionId=6711&customerId=6705&VE=true](https://discovery.upc.edu/view/action/uresolver.do?operation=resolveService&package_service_id=14913702830006711&institutionId=6711&customerId=6705&VE=true). ISBN 9783030957070.
- Sangüesa, Marta ; Mateo, Ricardo ; Ilzarbe, Laura. Teoría y práctica de la calidad. 2a. Madrid: Paraninfo, 2019. ISBN 9788428340892.
- Ilzarbe, Laura ; Baguer, Angel. Calidad para competir : el poder real del cliente. Madrid: Paraninfo, cop. 2016. ISBN 9788428338943.
- AENOR. Norma española UNE-EN ISO 9001 : sistemas de gestión de la calidad : requisitos (ISO 9001:2015). 2015. Madrid: AENOR, 2015. ISBN 1111164107218.
- AENOR. UNE-EN ISO 9000:2015 Sistemas de gestión de la calidad : Fundamentos y vocabulario. 2015. Madrid: AENOR, 2015.
- AENOR. UNE-EN ISO 9004:2018. Gestión de la calidad. Calidad de una organización. Orientación para lograr el éxito sostenido. (ISO 9004:2018). 2018. Madrid: AENOR, 2018.
- AENOR. UNE-EN ISO 19011:2018. Directrices para la auditoría de los sistemas de gestión. (ISO 19011:2018). 2018. Madrid: AENOR, 2018.
- EFQM. Modelo EFQM 2020. 2020. Madrid: EFQM, 2019.