

## Course guide

# 330099 - GQSIQSMA - Quality Management and Integrated Quality, Safety and Environmental Management Systems

Last modified: 25/04/2024

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

**Degree:** BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Optional subject).  
BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Optional subject).  
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Optional subject).  
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Optional subject).  
BACHELOR'S DEGREE IN ICT SYSTEMS ENGINEERING (Syllabus 2010). (Optional subject).  
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2016). (Optional subject).  
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2016). (Optional subject).  
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2016). (Optional subject).  
BACHELOR'S DEGREE IN MINING ENGINEERING (Syllabus 2016). (Optional subject).  
BACHELOR'S DEGREE IN MINERAL RESOURCE ENGINEERING AND MINERAL RECYCLING (Syllabus 2021). (Optional subject).

**Academic year:** 2024    **ECTS Credits:** 6.0    **Languages:** Catalan, English

## LECTURER

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**Coordinating lecturer:** Lujan Blanco, Itziar

**Others:**

## DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

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### Specific:

1. Adequate knowledge of the concept of company, its institutional and legal framework. Organization and management of companies.

### Transversal:

2. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.
3. ENTREPRENEURSHIP AND INNOVATION - Level 3. Using knowledge and strategic skills to set up and manage projects. Applying systemic solutions to complex problems. Devising and managing innovation in organizations.
4. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.

## TEACHING METHODOLOGY

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The teaching methodology combines the presentations by the professors and the realization of practices inside and outside the classroom.

English will be partially introduced as a vehicular language in the classroom, integrating it into the specified teaching methodology. Activities will be held in English.

## LEARNING OBJECTIVES OF THE SUBJECT

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The main objective of this course is for students to know the fundamentals of quality management, environmental management and the prevention of occupational hazards, its main tools and international standards, so that they can participate in the processes of establishing, documenting and implement an integrated management system in the company. At the end of the course, the student must be able to:

- Define the concept of "Management System" and the elements that comprise it.
- List the sections of the main regulations on management systems.
- Correctly apply planning, control and improvement tools.
- Define the fundamental aspects of quality, safety and the environment.
- Describe the fundamental aspects of the main leadership styles.
- Apply teamwork as a factor of competitiveness.
- Know technical-scientific terminology related to the content of the subject in English.
- Use English in classroom communication, in written and / or oral activities.

## STUDY LOAD

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Type	Hours	Percentage
Hours small group	30,0	20.00
Hours large group	30,0	20.00
Self study	90,0	60.00

**Total learning time:** 150 h

## CONTENTS

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### Content Title 1: Quality Management

**Description:**

Introduction to quality and presentation of the quality management system as a historical origin and as a practical origin of the rest of the management systems.

#### TOPIC 1. QUALITY MANAGEMENT

- 1.1. Quality, quality management and total quality (terms and definitions)
- 1.2. Quality planning
- 1.3. Quality control
- 1.4. Structure of ISO standards

#### TOPIC 2. LEADERSHIP AND TEAMWORK

- 2.1. Leadership and teamwork

**Specific objectives:**

Explain the concept of "quality".  
Define the concept of "Management System".  
List the sections of the ISO quality standard.  
Correctly apply planning, control and quality improvement tools.  
Define the fundamental aspects on which the agreed quality is based.  
Describe the fundamental aspects of the main leadership styles.  
Apply teamwork.

**Related activities:**

Practical application exercises  
Written exam

**Full-or-part-time:** 50h

Theory classes: 10h

Laboratory classes: 10h

Self study : 30h

## Content Title 2: Environmental Management

### Description:

Presentation of the environmental management system

### TOPIC 3. ENVIRONMENTAL MANAGEMENT SYSTEMS

3.1. Emas and ISO 14001 (terms and definitions)

3.2. Environmental policy

3.3. Environmental impact of products

### Specific objectives:

List the requirements of the regulation

Define environmental aspects and environmental impacts

### Related activities:

Practical application exercises

Written exam

### Full-or-part-time: 50h

Theory classes: 10h

Laboratory classes: 10h

Self study : 30h

## Content title 3: Prevention of occupational hazards

### Description:

Presentation of the occupational health and safety management system. Implementation of an integrated management system.

### TOPIC 4. PREVENTION OF LABOR RISKS

4.1. Regulations on occupational risk prevention

4.2. Industrial Security

4.3. Hygiene and ergonomics

### TOPIC 5. ISO 45001

5.1. Requirements of the standard

### UNIT 6. SYSTEMS INTEGRATION

6.1. Mechanisms for the integration of management systems

### Specific objectives:

List the requirements of the law for the prevention of occupational hazards.

Identify and evaluate risks and propose corrective and preventive measures.

Explain the advantages of system integration and integration strategies.

### Related activities:

Practical application exercises

Written exam

### Full-or-part-time: 50h

Theory classes: 10h

Laboratory classes: 10h

Self study : 30h



## ACTIVITIES

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### TITLE OF ACTIVITY 1: INTERNSHIPS

**Description:**

The different practices and works will be carried out in groups. Catalan or Spanish can be used interchangeably. Some activities will be done in English. Activities will be monitored.

**Specific objectives:**

Those corresponding to blocks 1, 2 and 3 of the subject (topics 1 to 6).

**Material:**

Statements delivered by the teaching staff.

**Delivery:**

The overall weight of the practices and works is 60% of the subject. They will be delivered within the dates indicated in the planning document. A part of the deliverable activities will be carried out in English.

**Full-or-part-time:** 67h 30m

Laboratory classes: 22h

Self study: 45h 30m

### TITLE OF ACTIVITY 2: WRITTEN EXAM

**Description:**

The student must respond in writing to theoretical and practical questions about the contents of the subject.

**Specific objectives:**

Those corresponding to blocks 1, 2 and 3 of the subject (topics 1 to 6).

**Material:**

Bibliography of the subject.

**Delivery:**

There will be two written tests weighing 20% of the subject each.

**Full-or-part-time:** 26h

Theory classes: 4h

Self study: 22h



### TITLE OF ACTIVITY 3: COMPREHENSION AND EXPRESSION IN ENGLISH

**Description:**

Activities will be carried out in English corresponding to the partial teaching of the subject in English, such as:

Consultation of information resources in English.  
Drafting of deliverables (practice reports, exams) in English.  
Oral presentations in English.

**Specific objectives:**

Know the terminology related to the subject in English.  
Use English in classroom communication, in written and / or oral activities.

**Material:**

Bibliography of the subject.

**Delivery:**

It will be evaluated in the practices and written tests.

**Full-or-part-time:** 37h 30m

Theory classes: 7h

Laboratory classes: 8h

Self study: 22h 30m

## GRADING SYSTEM

The evaluation will be carried out by:

- The assessment of the practices and work carried out during the course (60%)
- Two written exams (40%)

There are no minimum qualifications. The part of exams can be recovered with a final exam of the entire subject. The practice part has no recovery. Failure to present implies losing the qualification of that practice.

The assessment of the level achieved in the generic competence in 3rd language will be carried out following the criteria of the three levels indicated by the measurement grids, A (well achieved), B (achieved), C (not achieved), in accordance with the evaluation criteria that are approved in the EPSEM.

The evaluation of the entrepreneurship and innovation competence (level 3) will be carried out taking into account the grids approved in the EPSEM, using as reference material the answers to the course practices and the interaction in the classroom.

The evaluation of the teamwork competence will be carried out taking into account the grids approved in the EPSEM, using as reference material the answers to the practices of the course and the interaction in the classroom.

**Re-evaluation:**

There will be the possibility of taking a reevaluation exam, according to the calendar set by the EPSEM. This exam will weigh 100%.

## EXAMINATION RULES.

Written exams will be done individually and without notes.

The exercises and course work will be done in groups of 2 to 4 people

## BIBLIOGRAPHY

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### Basic:

- ISO. The integrated use of management system standards. Geneva: ISO Copyright Office, 2008. ISBN 9789267104737.

### Complementary:

- Rabbitt, John T.; Bergh, Peter A. The ISO 9000 book: a global competitor's guide to compliance and certification. 2nd ed. New York: Quality Resources, 1994. ISBN 9780814402672.
- Hoyle, David. ISO 9000 quality systems handbook [on line]. 6th ed. Oxford: Butterworth-Heinemann, 2009 [Consultation: 27/05/2022]. Available on : <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?docID=453025>. ISBN 9781856176842.
- Russo, Michael V., ed. Environmental management: readings and cases. 2nd ed. Los Angeles: SAGE, 2008. ISBN 9781412958493.
- Sasseville, Dennis R.; Wilson, W. Gary; Lawson, Robert W. ISO 14000 answer book: environmental management for the world market. New York: John Wiley & Sons, 1997. ISBN 0417179337.
- Health & Safety Executive. Essentials of health and safety at work. 4th ed. Sudbury: HSE Books, 2006. ISBN 9780717661794.
- Kausek, Joe. OHSAS 18001: designing and implementing an effective health and safety management system. Maryland: Government Institutes, 2007. ISBN 9780865871991.

## RESOURCES

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### Other resources:

(rules)

- ISO 9001:2015. Quality management systems - Requirements
- ISO 14001:2015. Environmental management systems - Requirements with guidance for use
- OHSAS 18001:2007. Occupational Health and Safety management systems ' Requirements
- UNE 66177. Guía para la integración de los sistemas de gestión
- ISO 45001:2018.