Universidad Zaragoza

Academic Year/course: 2024/25

66216 - Production and Quality Management

Syllabus Information

Academic year: 2024/25
Subject: 66216 - Production and Quality Management
Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
Degree: 531 - Master's in Chemical Engineering
ECTS: 4.5
Year: 1
Semester: Second semester
Subject type: Compulsory
Module:

1. General information

The objective of this subject is for students to acquire the concepts and skills necessary to analyse and apply the regulations of quality, safety and occupational risk prevention management systems and to integrate them with each other and with other management systems, as well as to apply planning and control techniques for production and its processes.

It is recommended to have taken the subject Manufacturing Technologies of the Chemical Engineering Degree of the University of Zaragoza.

2. Learning results

In order to pass this subject, the students shall demonstrate they has acquired the following results:

Management and organizational skills in the context of production and operations.

Interpret and apply different production planning and control models and techniques.

Know how to coordinate production process decisions with inventory management and demand management.

Identify the technical specifications in the computerization of a company's production systems and facilitate the evaluation of the strategy to be implemented.

Know the applicable regulations and be capable of managing and monitoring an occupational risk prevention plan within the industrial production environment.

Know the main concepts and definitions of quality systems.

Analyse and even audit a quality management system by assessing its proper functioning.

Identify and documents the technical and legal specifications applicable to a facility, process or product for the issuance of its certificate of conformity.

Know the methods of verification and control of facilities, processes and products.

Select and integrate appropriate equipment and systems for inspection, verification and testing.

3. Syllabus

Production management

1. Introduction to production management
2. Supply chain management
3. Demand management
4. Inventory management
5. Production planning and control techniques
6. Business process reengineering
7. Prevention of occupational hazards in the production environment

Quality management

1. Introduction to Quality Systems.
2. Functions in industrial quality assurance (Standardization, Certification, Homologation, Accreditation, Notification).
3. Measurement quality. Inspection and testing methods and equipment.
4. Integration of Quality Management Systems, ORP, environmental management and ethical management.

4. Academic activities

Production management

- Master classes (6 h)
- Case and problem solving (10 h)
- Completion of practical work (7 hours non face-to-face)
- Individual study (25 h non face-to-face)
- Assessment (3 h)

Quality management

- Master classes (9 h)
- Resolution of cases and problems (16 face-to-face hours)
- Completion of case studies (12.5 non face-to-face hours), individually or in groups.
- Individual study (22 non-face-to-face hours)
- Assessment (2 h)

5. Assessment system

The evaluation consists of two distinct parts: Production Management (weight 40%) and Quality Management (weight 60%). To pass the subject a grade of >=4 must be obtained in each of them.

Assessment activities:

I. Production management

Option 1: Continuous assessment
1. Individual written test including theory/problems (50% of the grade). Grade required >=4
2. Academic work (50% of the grade, taking into account that 20% of the grade corresponds to the evaluation of the document, 27% of the grade corresponds to the public presentation and 3% to the direct observation of the participation and performance of the group's components).

Option 2: Global assessment
Written test (50% of the grade) and resolution of an academic paper / case study, which will be defended orally before the teacher. (50% of the grade).
It is necessary that the student has obtained a grade of >=5 in both the multiple-choice exam and in the resolution of the academic work/practical case.

II. Quality management

Option 1: Continuous assessment
1. Individual written test (50% of the grade). Grade >=4 is required.
2. Team work on academic papers/practical cases (50% of the grade; taking into account that 35% of the grade corresponds to the evaluation of the papers, and 15% to the direct observation of the participation and performance of the group members).

Option 2:
Global assessment.
Exam described in option 1 (50% of the grade), to which will be added the resolution of an academic work/practical case (50% of the grade) to be defended orally before the teacher.

6. Sustainable Development Goals

8 - Decent Work and Economic Growth
9 - Industry, Innovation and Infrastructure
12 - Responsible Production and Consumption