

## 28939 - Quality management for the agri-food industry

### Syllabus Information

**Academic year:** 2024/25

**Subject:** 28939 - Quality management for the agri-food industry

**Faculty / School:** 201 - Escuela Politécnica Superior

**Degree:** 583 - Degree in Rural and Agri-Food Engineering

**ECTS:** 6.0

**Year:**

**Semester:** Second semester

**Subject type:** Optional

**Module:**

### 1. General information

One of the professional profiles that a graduate in Agri-Food and Rural Engineering can occupy is the Management of Food Quality and Safety. This subject provides the skills to develop this work in the industry.

The approach of the subject is aligned with some of the Sustainable Development Goals (SDGs), contributing to some extent to to some extent to their achievement:

Goal 2: Zero hunger

Target 2.1. ensure access to healthy, nutritious and sufficient food

Goal 3: Health and wellness

Target 3.9. reduce number of deaths and illnesses from hazardous chemicals and air, water, and soil pollution.

Goal 12: Responsible production and consumption

Target 12.3. reduce food losses in the production and supply chains.

### 2. Learning results

Upon completion of this subject, the student will be able to:

- To be able to know, understand and use the principles of quality management and food safety in an agri-food industry.
- To be able to document a quality management system applicable to a company in the food industry standardized according to ISO 9001 or other international systems.
- Be able to document and apply accreditation according to ISO 17025 to a company in the food industry.
- To be able to solve questions in which aspects related to quality assurance systems and quality management in an agri-food industrial process are studied in depth. Use of the ISO 22000 standard.
- To be able to explain and apply the different certification and accreditation systems, as well as the validation methodology in food control laboratories.
- Be able to identify hazards that may be present in the food chain and develop protocols to control their presence and survival.
- To be able to establish prerequisite plans with general hygiene measures to ensure compliance with the hygiene requirements to be implemented in the agri-food industries.
- To be able to apply quality control, assurance and management techniques in industrial processes through a HACCP quality assurance system, in order to minimize non-quality costs and failures in the production process.

### 3. Syllabus

#### FIRST BLOCK

Topic 1. Introduction Quality

Topic 2. Quality Management ISO 9000 Standards

Topic 3. ISO9001:2008 Standard

Topic 4. Analytic quality assurance

Topic 5. Laboratory Quality Systems. Standard UNE-EN ISO17025/2005

Topic 6. Measurement process in chemistry

Topic 7. Reference materials-calibration

Topic 8. Food analysis

#### SECOND BLOCK

Topic 1. Quality concept

- Topic 2. European Food Safety Policy
- Topic 3. Health hazards in food consumption
- Topic 4. Prerequisite plans
- Topic 5. HACCP System

#### **LABORATORY PRACTICES**

- Determination of nutritional quality in food
- Hygienic quality control in foodstuffs and processes

#### **4. Academic activities**

**Theoretical classes:** 30 hours of participative lectures developed with ADD material.

**Practical classes:** 20 hours. Analysis protocols will be developed and results will be analyzed

**Case resolution:** 10 hours. The case will be explained and, through supervision, it will be solved by consulting different bibliographic sources.

Theoretical classes provide an introduction to the concept of food quality and safety. The legislative framework that regulates food safety in Europe is interpreted and the role of the food industry is analyzed.

From a practical point of view, chemical analyses are carried out and applied in food chains to achieve safe food.

**Study:** 87 hours

**Assessment:** (3 hours)

#### **5. Assessment system**

The assessment of this subject will be carried out by means of an individual written test on the theoretical and practical delivery of laboratory practice reports of the course content of the subject. The practical questions will be related both to the material developed during the classroom seminars and to the laboratory practices.

Since this subject is divided into two blocks, it will be necessary to pass each part separately (minimum grade 5) and they will be evaluated at 50%.

The detailed definition of the evaluation system will be explained in the presentation of the course.

The success rates for the subject in the last three years are: 2019/20: 100%; 2020/21: 100%; 2021/22: 100%

#### **6. Sustainable Development Goals**

- 2 - Zero Hunger
- 3 - Good Health & Well-Being
- 12 - Responsible Production and Consumption