

## 30825 - Food Technology II

### Syllabus Information

**Academic year:** 2024/25

**Subject:** 30825 - Food Technology II

**Faculty / School:** 105 - Facultad de Veterinaria

**Degree:** 568 - Degree in Food Science and Technology

**ECTS:** 6.0

**Year:** 3

**Semester:** Second semester

**Subject type:** Compulsory

**Module:**

### 1. General information

The **general objective** of this subject is for students to acquire the fundamental knowledge and skills that will enable them to interpret, evaluate and select the different systems, methods, processes and equipment for the **industrialization of various food groups**.

The subject is closely linked to the subject "Food Technology I". Both subjects allow to complete the training in topics related to the handling of the equipment and facilities for food processing and storage, as well as the control and data acquisition systems most common in the food industry. Passing this subject will enable the students to follow the subjects dedicated to the study of the FST of specific food groups, and will be of great interest for the Pilot Plant Practicum.

In addition, students carry out a joint work with the subjects of Applied Food Hygiene and Food Legislation in order to integrate knowledge in a similar way to what happens in the Food Industry.

These approaches and objectives are aligned with the following **Sustainable Development Goals (SDGs)** of the 2030 Agenda, specifically, the learning activities planned in this subject will contribute to the achievement of the goals: 4.3, 4.4, 5.5, 7A, 9.5, 12.3, 12.5 and 15.8.

### 2. Learning results

1. Is able to analyse the advantages, disadvantages and limitations of the **equipment and facilities** with which different operations and processes (preservation, transport, packaging) are carried out in the food industry.
2. It is able to foresee the **effects** that the different **technological processes** exert on the raw material and, as a consequence, on the quality parameters of the processed food.
3. Is able to solve **calculation and optimization problems** of the most common treatments in the food industry (whether the data and graphs are expressed in English Spanish ).
4. Is able to assess the **problems associated with different foods and their processing and propose** the necessary **measures** to solve them.
5. Is able to evaluate and analyse the **operation and control systems** of different equipment used in food processing.
6. Is able to **produce a project and defend it** orally (in Spanish or English), working in a team, detailing the process of elaboration of a food from a technological point of view.

### 3. Syllabus

Topic 1. Introduction.

Topic 2. Cleaning, sorting and classification. Modification of the size.

Topic 3. Conveying and pumping.

Topic 4. Food processing by heat: blanching, pasteurization, sterilization, hot extrusion.

Topic 5. Food processing by ionizing radiation.

Topic 6. Food processing by new technologies: HPH, PEF.

Topic 7. Food processing by temperature decrease.

Topic 8. Food processing by atmosphere control.

Topic 9. Food processing due to decreased water activity.

Topic 10. Packaging.

## 4. Academic activities

**Participative master classes:** 37 hours

Sessions with the teacher in which the subject will be explained, seeking interaction with the students

**Laboratory practices:** 19 h

Influence of pressure on boiling temperature. Preparation of a canned food.

Pasteurization and sterilization of liquids. Food freezing. Integration work.

**Problems and cases:** 4 h

Troubleshooting of cooling loads and aspects of integration work.

**Tutorials** on integration work: 2 h

**Study** of the subject: 68 h

**Teaching assignments:** 17 h

**Assessment tests.** 3 h

## 5. Assessment system

**Test 1.** Individual written test of theoretical knowledge, consisting of 20-30 multiple-choice questions (40% of the grade; minimum 5 out of 10). Those answered incorrectly will not be negatively evaluated.

**Test 2.** Individual written test of resolution of practical cases, consisting of 2-4 short questions, which may include a mathematical problem (**25%** of the grade): **17.5%** short questions, **7.5%** problem; minimum 5 out of 10). The relevance of the content and the ability to synthesise will be especially valued.

Students will have 3 self-assessments in the ADD (Anillo Digital Docente) and solved problems to check their state of assimilation of concepts, but they will not be reflected in the final grade of the subject.

**Test 3.** Through the ADD or on paper with multiple-choice questions (10-20 questions) on the practices performed (**10%** of the grade; minimum 5 out of 10). Those answered incorrectly will not be negatively evaluated.

**Test 4.** Presentation and defence of an integration work (**25%** of the grade; minimum 5 out of 10).

It will be evaluated based on several grades:

- Group grade obtained in the third tutorial of the work (5%).
- Individual grade of a question to be asked in the theory exam (test 1) on the integration work (10%)
- Individual grade to be obtained from the presentation and defence of the work. The inclusion in the work of aspects covered in the theory, as well as the SDGs (10%) will be valued.

The quality of the material prepared and the discussion raised during the third tutorial will be evaluated, as well as the answer to the question of the theory exam and the quality of the presentation and defence of the integration work. The inclusion of aspects dealing with the theoretical part of the course will also be taken into consideration in the final qualification of the integration work.

For all the tests, those approaches that demonstrate a profound and/or conceptual ignorance of the subject will be negatively assessed.

Those students who do not choose to do the Integration Work in a group, will carry out individually a processed line of a product, which they will present and defend before the teacher on the day of the evaluation test of the subject on the date indicated in the academic calendar.

## 6. Sustainable Development Goals

- 7 - Affordable and Clean Energy
- 9 - Industry, Innovation and Infrastructure
- 12 - Responsible Production and Consumption