

## 68765 - Advances in technology of foods from vegetal origin

### Syllabus Information

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**Academic year:** 2023/24

**Subject:** 68765 - Advances in technology of foods from vegetal origin

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

**Degree:** 631 - Master's Degree in Food Quality, Safety and Technology

**ECTS:** 3.0

**Year:** 1

**Semester:** Second semester

**Subject type:** Optional

**Module:**

### 1. General information

The general objective of this subject is to help students to deepen and specialise in a sector of great importance in the food industry, such as food products of plant origin and their by-products: the use of clean technologies for the decontamination, preservation and marketing of these products, as well as the design of new ones according to the demands of today's consumers, focusing on derivatives of fresh fruit and vegetables, cereals and oilseeds. These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/en/>), such that the acquisition of the learning results of the subject provides training and competence to contribute to some extent to the achievement of targets 9.4 of Goal 9 (Industry, innovation and infrastructure) and targets 12.3, 12.4 and 12.5 of Goal 12 (Responsible production and consumption).

### 2. Learning results

- To understand future challenges in the fresh and processed plant-based food sector.
- To describe and critically analyse new techniques for decontamination and post-harvest preservation of fresh fruit and vegetable products.
- To describe and critically analyse the new techniques for the transformation of food of vegetable origin in order to obtain new products in accordance with the demands of the sector and society.

### 3. Syllabus

**THEORETICAL SESSIONS: 15 classroom hours**

#### **BLOCK 1. FRUITS AND VEGETABLES**

TOPIC 1. Introduction to the fruit and vegetable sector: current problems and trends in the fresh fruit and vegetable product sector and its by-products.

TOPIC 2. Metabolism and postharvest quality.

TOPIC 3. Types of post-harvest alterations.

TOPIC 4. Post-harvest technologies.

TOPIC 5. New product development.

#### **BLOCK 2. CEREALS, LEGUMES AND PSEUDOCEREALS.**

TOPIC 7. Technological and nutritional aspects of innovation in the cereals, legumes and pseudocereals sector.

#### **BLOCK 3. OLEAGINOUS**

TOPIC 8. Technological and nutritional aspects of innovation in the oilseed sector.

**PRACTICAL SESSIONS: 15 classroom hours.**

SESSION 1: Design of the flow diagram of fresh-cut and pre-prepared convenience fruit and vegetables and subsequent processing in a pilot plant.

SESSION 2: Design of the flow chart of dehydrated vegetable snacks and subsequent processing in pilot plant.

SESSION 3: Instrumental and sensory analysis of cereals and derived products.

SESSION 4: Olive oil tasting.

#### 4. Academic activities

**Lectures (15 hours):** sessions where the teacher will explain the subject's topics.

**Laboratory practices: 13 hours.** Practical sessions in laboratory and processing plant.

**Solving of problems and cases: 2 hours.** Individual and group work exposition.

#### 5. Assessment system

##### Continuous assessment

**BLOCK 1:** Individual oral presentation, defence and critical evaluation of a research paper in English on preservation and/or disinfection technologies for fruit and vegetable products. It will represent 35% of the final grade (from 0 to 10) of the subject. This activity will be directed by the teacher responsible for this part of the subject (topics 1 to 6).

Oral group presentation of the results obtained in one of the practical sessions linked with the development of one of the three types of processed products (fresh-cut, pre-prepared convenience food or dehydrated products). This presentation will include the methodology followed, the results and conclusions obtained, as well as the problems, questions and debates that may have arisen during the session. The overall grade of the exercise will be from 0 to 10 points and will represent 35% of the final grade.

**BLOCK 2:** Submission of a written report on the contents developed in topic 7 and practical session 3. This activity will be directed by the teacher responsible for this part of the subject. The overall grade of the exercise will be from 0 to 10 points and will represent 15% of the final grade.

**BLOCK 3:** Written summary of a research paper related to topic 8 of the syllabus. This activity will be directed by the teacher responsible for this part of the subject. The overall grade of the exercise will be from 0 to 10 points and will represent 15% of the final grade.

In order to pass, a grade equal to or higher than 5 must be obtained in all assessment activities.

##### Overall assessment

Students who do not pass the continuous assessment, or have not chosen this modality, will be evaluated through a global test that will consist of an exam with open-ended questions related to all the content of the subject. The student who has missed 2 or more sessions without a justified cause will also be obliged to take the global test.