

## 30830 - Milk and Egg Product Technology

### Syllabus Information

**Academic year:** 2023/24

**Subject:** 30830 - Milk and Egg Product Technology

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

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

**ECTS:** 6.0

**Year:** 4

**Semester:** First semester

**Subject type:** Compulsory

**Module:**

### 1. General information

The objective of this subject is to provide the student with the scientific and technical fundamentals and procedures to understand the characteristics of milk components and how they are influenced by the technological processes that take place in the treatment of milk and its transformation into dairy products. The study of the components and technological properties of eggs, and the influence of the egg product manufacturing processes and their applications are addressed.

These approaches and objectives are aligned with some Sustainable Development Goals (SDGs) of the 2030 Agenda of United Nations (<https://www.un.org/sustainabledevelopment/es/>) in such a way that the acquisition of the learning results of the subject will contribute to some extent to the achievement of Goals 4, 9 and 12.

### 2. Learning results

- Relate the components and structure of milk and eggs with their technological properties.
- Describe the schemes of the technological processes of dairy and egg products elaboration.
- Select the most appropriate technologies, production lines and formulations for each type of dairy and egg product
- Predict the influence of technological parameters on the quality and stability of dairy and egg products
- Identify the causes of defects and alterations in dairy and egg products and propose solutions to avoid them
- Interpret and apply a laboratory procedure in practice, as well as analyse and present the results obtained
- Use the acquired concepts to learn about new topics, search for information about them, read specialized texts in English, and assimilate information critically to produce and present a written or oral presentation of a practical work

### 3. Syllabus

#### BLOCK I. Milk composition

##### I.1. Structure and properties of milk

##### I.2. Milk components

Proteins

Lipids

Carbohydrates

Vitamins and minerals

##### I.3. Milk microbiology

Altering and pathogenic microorganisms

Lactic acid bacteria

## **BLOCK II. Technological processes**

Previous operations

Heat treatment

Concentration processes

## **BLOCK III. Dairy product technology**

### **III.1. Milks for human consumption**

Liquid, concentrated and powdered milks

Fermented milks

### **III.2. Fatty dairy products**

Cream and butter

Ice cream

Cheese processing, ripening and varieties

## **BLOCK IV. Egg and egg products**

Egg components

Liquid, frozen, concentrated, dehydrated and processed egg products

## **4. Academic activities**

- Participative master class: 41 hours

Basic knowledge is provided on the components of milk and eggs, as well as on the technological processes for the production of dairy and egg products

- Seminars: 2 hours

Presentation of the oral work

- Laboratory practices and Pilot Plant: 13 hours

Laboratory analysis and preparation of a dairy product and egg products will be carried out.

External visits to dairy centres: 4 hours

- Teaching assignments:

An individual written teaching paper, a group oral paper and a laboratory practice report are included.

## **5. Assessment system**

The subject will be evaluated by the continuous assessment system by means of the following activities:

Written test of theoretical teaching (50% of the grade, minimum 5 out of 10). It will consist of 2 long questions and 8 short questions. The adequacy of the answer to the question, the capacity of synthesis, clarity and coherence in the reasoning will be valued.

Evaluation of practical teaching (20% of the grade, minimum 5 out of 10). Several laboratory and Pilot Plant practices will be carried out. The following aspects will be evaluated:

- Laboratory skills and abilities

- Deepening in practice

- Student autonomy and participation

- Report on a practice

There will be an individual written work (20% of the grade, minimum 5 out of 10). The quality of the publications consulted and their critical interpretation will be valued.

An oral group work will be done on a dairy product (10% of the grade, minimum 5 out of 10). Clarity in the presentation, the capacity of synthesis and communication of ideas, the bibliography consulted, as well as the answers to the questions posed will be valued.

If the student has not passed any of these activities during the semester, they will have the opportunity to pass the subject through a global test in the official exams, which will consist of the same activities as in the continuous evaluation. In this case, group work may be done individually.