

63021 - New technologies of food processing

Información del Plan Docente

Academic Year	2016/17
Academic center	105 - Facultad de Veterinaria
Degree	566 - Master's in Food Quality, Safety and Technology
ECTS	3.0
Course	1
Period	Second semester
Subject Type	Optional
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The course is structured in 20 h of participatory theoretical lectures, 10 h of laboratory practices and the approach, implementation and presentation of a work of specialization that requires 45 hours of autonomous work.

Lectures will be conducted with the help of audiovisual media, presenting the fundamentals of new processing technologies together with supplementary material such as tables and graphs, and links to web pages to expand the course information.

63021 - New technologies of food processing

Practical classes will be conducted in the laboratory in small groups with a protocol and the necessary material, being supervised by teachers of the course during the practice.

Once completed the program of classroom activities, students in groups, will develop a specialization project which, once discussed with his/her tutor, will be elaborated and presented in writing and orally, to be evaluated by the teachers of the course.

5.2.Learning activities

1. Theoretical sessions. 20 hours face-to-face (2-hour sessions).
2. Practical sessions. 10 hours face-to-face (sessions 3-4 hours).
3. Preparation of a specialization work by choosing the most appropriate emerging technology for food preservation / storage / processing (45 h)

5.3.Program

In the theoretical sessions the following topics will be developed:

1. Introduction. Traditional technologies versus new technologies, challenges and solutions. Review of progress in food processing (2 h)
2. New preservation, higienization, food processing and extraction technologies (irradiation, high hydrostatic pressure, ultrasound, ultraviolet, pulsed electric pulses, light pulses, cold plasma, natural antimicrobials, combined processes ...) (16 h)
3. New alternative heating methods (microwave, ohmic heating, dielectric heating, etc.) (1 h)
4. New packaging systems (active packaging, smart packaging, edible films, recyclable, reusable and biodegradable packaging, etc.) (1 h)

In the practical sessions the following topics will be developed:

1. New food preservation technologies: handling equipment for high hydrostatic pressure, ultrasound, ultraviolet, and pulsed electric pulses treatments, and study of microbial and / or enzymatic inactivation by these technologies (3 h)
2. New extraction technologies: handling equipment for extraction by pulsed electric pulses, and extraction of intracellular

63021 - New technologies of food processing

components of interest in the food industry (3 h)

3. Analysis of results (4 h)

5.4.Planning and scheduling

The master calendar and scheduling of the theoretical and practical sessions of the course will appear on the website of the Faculty of Veterinary Medicine, at the following address:

<http://veterinaria.unizar.es>

5.5.Bibliography and recommended resources