Universidad Zaragoza

Academic Year/course: 2022/23

68770 - New technologies of food processing

Syllabus Information

Academic Year: 2022/23
Subject: 68770 - New technologies of food processing
Faculty / School: 105 - Facultad de Veterinaria
Degree: 631 - Master's Degree in Food Quality, Safety and Technology
ECTS: 3.0
Year: 1
Semester: First semester
Subject Type: Optional
Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. The course is structured in 18 hours of lectures, 10 hours of laboratory practices and the preparation of a project (approach, implementation) that requires 45 hours of autonomous work, and 2 hours for evaluation and presentation of the project.
Lectures will be conducted with the help of audiovisual media, presenting the fundamentals of new processing technologies together with supplementary material such as tables, graphs, and webpages to expand the course information.
Practice sessions will be conducted in the laboratory in small groups with a protocol and the necessary material, being supervised by the course teachers.
Once completed the teaching sessions, in groups, the students will prepare a specialization project which, once discussed with their advisor, will be presented in a written format as well as orally to be evaluated.

4.2. Learning tasks

The course includes the following learning tasks:

Lectures. 18 hours.

Practice sessions. 10 hours.

Specialization project. Students justify the most appropriate emerging technology for food preservation / storage / processing.

Evaluation. Exam and presentation and defense of the specialization project. 2 hours.

4.3. Syllabus

The course will address the following topics:

Lectures
1. Introduction.

2. Irradiation.
3. Ultraviolet, light pulses, cold plasma.
4. High hydrostatic pressure.
5. Ultrasounds.
6. Natural antimicrobials.
7. Pulsed electric fields.
8. Combined processes.
9. New packaging systems.
10. New heating methods.
11. Comparison of new technologies.

Practice sessions
1. Application of new processing technologies for food preservation (microbial and enzymatic inactivation): handling of processing equipment and study of the microbial and/or enzymatic inactivation caused.
2. Application of new technologies in food processing (mass transfer, energy, etc.): equipment handling and extraction of intracellular components of interest in the food industry.
3. Counts, representation and analysis of the results.

4.4. Course planning and calendar

Further information concerning the timetable, classroom, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the Faculty of Veterinary website http://veterinaria.unizar.es

4.5. Bibliography and recommended resources

Check at https://biblioteca.unizar.es/