

Academic Year/course: 2022/23

30840 - Innovation in the Food Industry

Syllabus Information

Academic Year: 2022/23

Subject: 30840 - Innovation in the Food Industry

Faculty / School: 105 - Facultad de Veterinaria

Degree: 568 - Degree in Food Science and Technology

ECTS: 5.0

Year: 4

Semester: Second 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. It favors the acquisition of knowledge related to innovation in food industry. A wide range of teaching and learning activities are implemented, such as lectures, practice sessions, and assignments.

Students are expected to participate actively in the class throughout the semester.

Classroom materials will be available via ADD Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials. Further information regarding the course will be provided on the first day of class.

The learning process that is designed for this subject is based on the following:

This is a 5 ECTS course is structured in 35 hours of participatory lectures and 15 hours of problems and cases (including computer room practices, problems, presentations and innovation seminars); the rest will be hours of autonomous work of the student as well as individual tutoring.

Students must follow the regulations described in:

- Prevention: A guide for students at the University of Zaragoza:
https://uprl.unizar.es/sites/uprl.unizar.es/files/archivos/Procedimientos/guia_preventiva_para_estudiantes_ingles.pdf
- Manual de seguridad en los laboratorios de la Universidad de Zaragoza y normas marcadas por la Unidad de Prevención de Riesgos Laborales:

https://uprl.unizar.es/sites/uprl.unizar.es/files/archivos/Procedimientos/manual_de_seguridad_en_los_laboratorios_de

<https://uprl.unizar.es/inicio/manual-de-procedimientos>

In addition, students will follow as well any instructions related to biosecurity given by the professor.

4.2. Learning tasks

Regarding participatory lectures, it is intended to facilitate the documentation of each topic with sufficient time for the student to review it before the corresponding class. In some cases, sources of information, tables and graphs will be in English, so students will have a glossary of technical terms related to the subject and its corresponding equivalence to Spanish. During the classes the different learning activities will cover all lessons of the program. The computer room sessions will be devoted to managing sources of information on innovation in the food sector and evaluation of nutrition and health claims on foods. The other sessions will work with problems and cases on 4.0 technology enablers, simulation of cogeneration processes and systems and / or energy use in a food industry, as well as presentation of an innovation work.

A written report of the practical sessions, consisting of the analysis and interpretation of the results, will be asked to each student. Innovation seminars will be organized in sessions of 2 hours, where concepts and experiences related to the food sector will be presented with a clear focus on the development of new products and services.

All teaching materials for the course (class notes, protocols of practices, dietary survey, support material, recommended bibliography, websites) will be available in advance on the Teaching Digital Ring (ADD-Moodle) of the University of Zaragoza and reprographic service of the Veterinary Faculty of Zaragoza.

4.3. Syllabus

The course will address the following topics:

A: THEORY SESSIONS (LECTURES)

- **Topic 1:** Introduction to innovation in the food industry. Design strategies for functional foods. Scientific evaluation of foods and components with functional and health properties. Legal framework of nutrition and health claims. New global trends in food and drink (10 hours)
- **Topic 2:** Innovation in fortified foods, food supplements, new foods and food adapted to groups of people with special needs (6 hours)
- **Topic 3:** Concepts and phases of an innovation project. Stages in the development of new products, search of solutions, technological vigilance and intelligence (4 hours)
- **Topic 4:** Food Industry 4.0: Key technologies. Innovations in on-line instrumentation and process control in the food industry (4.5 hours)
- **Topic 5:** Strategies of optimization of process variables in the food industry. New strategies for cogeneration and energy use in the food industry (4.5 hours)
- **Topic 6:** Best available techniques in the food industry. Environmental aspects of innovation in the food industry. Carbon footprint and water footprint in the food industry (3 hours)
- **Topic 7:** Methods and strategies of development and commercialization of new products in the food company. Marketing strategy and market test (3 hours)

B: PRACTICE SESSIONS

- **Computer room:** Management of information sources, web pages on innovation in the food industry (4 hours)
- **Classroom:** Innovation work presentation (2 hours). Presentation of the report on two technology enablers 4.0 (1.5 hours). Presentation of the work on (a) simulation of processes, or (b) cogeneration system and / or energy use in a food industry (1.5 hours)
- **Innovation Seminars:** Seminars and lectures given by professors, researchers and professionals from companies or institutions on successes and failures in the development of new products and on the technological situation of the sector (6 hours)

4.4. Course planning and calendar

The dates and key milestones of the course are described in detail, along with the other courses in the fourth year of Food Science & Technology Degree, on the website of the Veterinary Faculty:

<https://veterinaria.unizar.es/academico/plan-estudios-grado-cta/>.

This link will be updated at the beginning of each academic year.

Specifically, the ADD-Moodle of the subject includes a calendar of teaching activities that will be updated throughout the course.

4.5. Bibliography and recommended resources

The bibliography of the current academic year is kept up-to-date and is consulted through the Library's website (search for recommended bibliography in biblioteca.unizar.es).

Additionally, the ADD-Moodle of the course includes an updated file with websites of interest in Innovation in the food industry.