

Academic Year/course: 2022/23

66857 - New tools in food safety

Syllabus Information

Academic Year: 2022/23

Subject: 66857 - New tools in food safety

Faculty / School: 105 - Facultad de Veterinaria

Degree: 617 - Master's in Global Health: Integration of Environmental, Human and Animal Health

ECTS: 3.0

Year: 1

Semester: Second semester

Subject Type: Optional

Module:

1. General information

1.1. Aims of the course

The aim of the course is to specialise the student in a more professional profile in Public Health; therefore it has an eminently practical character. In the theoretical sessions, an introduction to the new tools applied to food safety management is given and students are provided with the sources of information for their application in the food industry sector.

In the practical sessions, students work individually on the resolution of exercises and problems related to the applied theoretical aspects and, in groups of two or individually, they carry out a practical case through autonomous work that is later exposed and discussed with their colleagues. The performance of the practical work involves specific tutoring by the teacher.

1.2. Context and importance of this course in the degree

Within the University Master in One Health, this elective subject is part of the specialisation module in Public Health, with a dedication of 3 ECTS.

The subject of "New tools in food safety" completes the knowledge of the subject of food safety, together with the subject of "Methodologies for the evaluation of risks in food". In turn, it is directly related to the subject of "Emerging Diseases with Impact on Public Health" integrated in the same specialisation module

In the context of shared threats at the human-animal-environment interface, this subject addresses food safety management with a proactive approach, developing plans to prevent and control the risk of disease transmission to humans through food.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) as part of the United Nations Agenda 2030 (<https://www.un.org/sustainabledevelopment/>). Accordingly, the acquisition of the learning goals in the subject provides skills and competences to contribute to some extent to its achievement:

Goal 3: Good Health and Well-being

Goal 4: Quality Education

Goal 6: Clean Water and Sanitation

Goal 9: Industry, Innovation, and Infrastructure

Goal 12: Responsible Consumption and Production

1.3. Recommendations to take this course

The subject is optional and is linked to the teaching of the subject "New tools in food safety" in the University Master's Degree in Food Quality, Safety and Technology.

To take this subject, it is recommended that the student has advanced knowledge of Food Microbiology, Toxicology and Hygiene, as well as Food Technology and those other degree courses related to Food Safety.

2. Learning goals

2.1. Competences

On successful completion of this course, students will be able to:

- CE01 - Understand the One Health concept, its history and its importance in addressing current public health issues.
- CE02 - Work on health and disease from a multidisciplinary perspective.
- CE03 - Understand the models of infection and disease that alter collective health in the One Health context.
- CE04 - Identify, classify and evaluate the essential environmental and anthropological determinants of Global Health.
- CE05 - Know and apply the European and national regulations in matters of Public Health and health research and general response strategies.
- CE9 - Understand and be able to apply the basic research tools in global health (human/public, animal and environmental).
- CE12 - Apply and analyse the bibliographic resources and those available on the web to obtain the necessary information for the approach of the research work and for the discussion of the results.
- CE13 - Apply the theoretical and practical knowledge acquired to a real research problem in the field of health.
- CE16 - Interpret the obtained results in an experimental work and use a critical sense to discuss them with those of other studies related to the subject

In addition to the previous competences, the student, by taking this subject will:

1. Know the current trends in food safety management systems.
2. Know the development of the systems that inform the food chain in order to be useful in improving food security.
3. Understand the concept of traceability and its different modalities applied to the guarantee of food safety.
4. Know how to carry out shelf-life studies that ensure food safety.
5. Know those aspects related to the Food Safety objectives applicable to the guarantee of food in Public Health.
6. Be in a position to know the food crisis management and communication systems and know how to take effective measures applicable to them.

2.2. Learning goals

The student, in order to pass the course, will have to show his/her competence in the following skills:

- Know the food safety management tools and how to apply them.
- Develop a scientific assessment applicable to the use of food safety objectives.
- Arrange guidelines for the control and management of food threats and frauds.
- Undertake shelf-life studies aimed at guaranteeing food safety.
- Understand the communication strategies in food safety.

2.3. Importance of learning goals

Within the current European legislative framework, the food production sectors and all food industries must take responsibility for food safety and security, with the application of basic tools, such as the self-monitoring system and traceability system, being mandatory. However, the growing demand for healthy and safe food, as a consequence of globalisation and international trade, requires new tools, to ensure a higher degree of protection of human health and consumer interests.

This course will train students to integrate into the food safety and self-control program, the use of support tools for decision making in a food market that is in continuous transformation.

The learning of this course provides the basis for the ability to carry out actions of continuous training, advice and research in the food safety field.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The student will prove that he/she has achieved the expected learning results by means of the following assessment tasks:

Continuous assessment: it will be carried out on the basis of a work developed in connection with one of the teachers of the subject throughout the four-month period in which it is taught. This evaluation will include the following activities:

- Oral presentation of a scientific development work applying the tools explained in the previous lessons. The student must submit a written summary of the work, with a maximum length of 5 pages that will complement the grade of the course. This activity will be led by the professors who teach the subject. The overall grade of the exercise will be from 0 to 10 points and will represent 75 % of the final grade of the subject. Evaluation criteria:

content, originality and scientific depth of the work done, its presentation, the written summary as well as the active participation of the student in the tutorial process in the elaboration of the work.

- Group discussion of the work conclusions presented by each student. The grade of each student will depend on their answers in the group discussion and will be from 0 to 10 points and will represent 25% of the final grade of the course. Evaluation criteria: critical capacity and interpretation of the results and conclusions obtained.

It is necessary to obtain a minimum final score of 5 points to pass the subject. The continuous assessment will only be taken into account if 80% of the proposed activities have been carried out.

Global assessment: The students who have not chosen continuous assessment may be evaluated by means of a comprehensive test consisting of the written development of a model for the application of food security tools. The student will have one week to carry out the exercise and will have access to the sources of information.

The work delivered will be evaluated by the subject teachers and will have a score between 0 and 10 points and it is necessary to obtain a minimum final score of 5 points. Evaluation criteria: content, originality and scientific depth of the work done.

Marking system: According to the national regulation Law 1025/2003, 5th of September which lays down the European system of credits and marking system for the university degree.

0-4.9: FAIL.

5.0-6.9: PASS

7.0-8.9: GOOD (NT)

9.0-10: EXCELLENT (SB).

As the article 158 of the Statutes of the University of Zaragoza lays down, provisional grades will be displayed at least for 7 days and students will be able to review them on the date, time and place provided for that purpose.

The "Honorable Matriculation" may be awarded to students who have obtained a grade equal to or higher than 9'0. Their number may not exceed five percent of the students enrolled in the corresponding academic year.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as follows:

Lectures in which the teacher presents the progress on strategies to ensure food safety, databases and information sources for the development of models applied to the food sector.

Practical session in which students carry out the analysis and solve cases applying the tools reviewed in the subject.

Discussion work in which the student, individually or in pairs, prepares an assignment on specific issues related to the subject.

Seminars, where each student prepares and presents the development of a specific model focused on decision-making in the management of food safety. In this activity, the student participation will be encouraged, promoting a critical interpretation of every presentation.

Individual or group tutoring, by means of a personal interview that may not be face-to-face, on the methodology in order to carry out the teaching work, its monitoring and, when appropriate, the resolution of any doubts raised by the student.

4.2. Learning tasks

The course is offered to help students achieving expected results and includes the following learning tasks:

16 hours of attendance-based lectures (2-hour sessions).

5 hours of attendance-based practical sessions.

Discussion work. 4 hours of mentoring.

Seminars. 5 hours.

4.3. Syllabus

1.- Lectures.

Lesson 1. Advances in the system of Hazard Analysis and Critical Control Points.

Lesson 2. Validation and Verification tools for a HACCP system.

Lesson 3. Food Safety Objectives (FSO) and Performance criteria.

Lesson 4. Microbiological assessment Plan.

Lesson 5. Shelf life studies in Food Safety.

Lesson 6. Food Defense. Threat Assessment and Critical Control Points (TACCP).

Lesson 7. Food Fraud. Vulnerability Assessment and Critical Control Points (VACCP).

Lesson 8. Risk Communication Tools.

2.- Practical sessions.

Practical session 1. Validation exercises of the HACCP system.

Practical session 2. Integration of FSO in the HACCP system.

Practical session 3. Shelf Life Application in the Food Safety Management.

3.- Discussion work.

Development of an application model for food safety tools,

Preparación individualizada o en grupos de dos estudiantes, de un modelo de aplicación de herramientas de seguridad alimentaria bajo la supervisión del profesor y elaboración de la presentación pública del trabajo docente.

4. Seminars.

Presentation of the work (Individual or in groups).

Follow-up analysis and group discussion with other students and teachers of the results and conclusions corresponding to every work.

5.- Dissertation.

Presentation of the exercise done individually or in group and analysis, for a maximum time of 20 minutes. Group discussion, with the rest of the students and teachers, of the results and conclusions of each exercise.

4.4. Course planning and calendar

Further information concerning the timetable and lectures and practical sessions of the subject will be provided throughout September at the Faculty of Veterinary website:

<http://veterinaria.unizar.es/>

Coordinator

Pilar Conchello email: conchell@unizar.es

Antonio Herrera email: aherrera@unizar.es

Tutorials:

The tutoring hours will be set on the start day of the subject in each academic year.

4.5. Bibliography and recommended resources

Updated bibliographic information and recommended resources will be available in the ADD.