

## 68710 - Food risk analysis and evaluation systems

### Información del Plan Docente

Academic Year	2018/19
Subject	68710 - Food risk analysis and evaluation systems
Faculty / School	104 - Facultad de Medicina
Degree	459 - Master's in Public Health
ECTS	2.0
Year	1
Semester	Second semester
Subject Type	Optional
Module	---

### 1.General information

#### 1.1.Aims of the course

##### **The subject and its expected results respond to the following approaches and objectives**

The risk assessment constitutes the scientific knowledge about the probability and severity of the risks associated with the consumption of food, an aspect necessary to address an effective management both from the point of view of food and legislative control, to give a guarantee of quality and safety in the food industry itself and offer the greatest possible transparency in the risk communication process.

Likewise, knowledge of risk assessment methodologies for biotic and abiotic hazards is a very important and fundamental part in the development of the scientific method for applied research in Public Health.

#### 1.2.Context and importance of this course in the degree

The subject is contextualized within one of the major objectives pursued by Public Health in its relationship with food safety: knowing the tools used for the evaluation of food risks, knowing how to apply an appropriate risk management policy and using risk analysis as an effective weapon in the improvement of food safety and in the prevention of Public Health.

#### 1.3.Recommendations to take this course

This subject has as objective that the student of the master in Public Health knows the advanced procedures to carry out

## 68710 - Food risk analysis and evaluation systems

an evaluation of the risks associated with the consumption of food.

At present it is mandatory that any decision on food safety is preceded by a risk assessment process that combines the scientific activities, related to the risk assessment of hazards present in the food chain, with the activities of information management of the calculated risk.

This subject has as a key objective that the student knows the main tools in the scientific process of risk assessment in the food chain and is able to develop strategies for control and prevention of food risks that have an impact on Public Health. You will also be provided with information about the main reports and studies of the Food Safety Agencies on the subject.

Therefore, it is related to the compulsory subjects of "Introduction to Public Health", "Prevention of diseases, promotion and protection of health", and the optional "Preventive Medicine" and "Public Health Alerts" that are taught in this master

It is recommended that the student have advanced knowledge of Microbiology, Toxicology and Hygiene food and those other subjects related to Food Safety.

## 2.Learning goals

### 2.1.Competences

Upon passing the subject, the student will be more competent to ...

- Possess a systematic and rigorous knowledge of the scientific method applied to the evaluation of biological and chemical risks transmitted by food.
- Develop skills in the search for information and management of the bibliography related to the methodology of evaluation of biological and chemical risks of food origin, as well as interpreting in a critical way the collected information.
- Apply the knowledge acquired to develop a procedure for evaluation, communication and risk management for health in the field of food safety in real situations
- Know how to integrate knowledge and interpret the information contained in the work of national and international Food Safety agencies.
- Be in a position to communicate the conclusions derived from the application of a food risk assessment procedure in specialized and non-specialized forums.
- Know how to apply the knowledge acquired to a research objective in the field of food safety.
- Acquire learning skills to continue studying autonomously.

Also contribute to the acquisition of all the generic competences and those specific, methodological and attitudinal exposed in the memory of the master and related to the subject; concretely the numbered CA-1, CA-5, CC-2, CC-3, CC-5, CM-1, CM-3, CM-4, CM-6 to CM-9.

### 2.2.Learning goals

The student, to pass this subject, must demonstrate the following results

- Be able to relate the basics of risk assessment with their practical applications in Public Health.
- Be able to plan and apply the risk assessment methodology for the biological and chemical hazards present in the diet in real scenarios.
- Be able to understand and interpret the information derived from the risk assessment work of the Food Safety

## 68710 - Food risk analysis and evaluation systems

Agencies.

- Be able to apply risk assessment and its interpretation to research models in food safety in the Public Health environment.
- Be able to express in a written and oral way a critical analysis on food risk assessment and establish a team discussion process about the results obtained.

### 2.3.Importance of learning goals

The competences acquired with this subject are relevant because any research on food safety, as well as any strategy for the implementation of control and risk management measures, must be carried out in the context of the prior evaluation of health risks. This fact increases with the implementation by the European Union of the food safety guarantee measures expressed in the mandatory legislation.

### 3.Assessment (1st and 2nd call)

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

The student must demonstrate that he has achieved the expected learning outcomes through the following continuous assessment activities:

- The attendance to the practical sessions is obligatory and it is considered essential so that the student can orally present the food risk assessment exercise and be evaluated in continuous evaluation.
- Oral presentation of the evaluation exercise of a food risk proposed by the teacher from a reference publication; however, the student may suggest the topic that is of interest related to their Master's Thesis or Doctoral Thesis project. This activity will be directed by one of the professors who teach the subject. The global grade of the exercise will be from 0 to 10 points and will represent 75% of the final grade of the subject. The preparation of the report and the oral presentation of the same will be organized according to the number of students enrolled, being able to be individual or in group.
- Evaluation criteria: originality, topicality of the topic, structure, quality, bibliographic sources used, correct use of specific terminology, clarity and correction in the writing, oral expression capacity. Especially, the ability to respond to issues arising after public exposure will be considered.
- Group discussion of the conclusions of the evaluation of food risk exposed by each student or group of students, as well as preventive strategies for their control. The qualification of each student derived from the discussion and group participation will be from 0 to 10 points and will represent 25% of the final grade of the subject.
- Evaluation criteria: participation in the discussion forum, critical capacity to know how to interpret the results, ability to interrelate the different concepts.

Overall assessment

In the event that a student decides to undergo a global evaluation, the criteria that will be applied will be:

- present a risk assessment work based on prior agreement with the teaching staff. This work will be evaluated and its overall score will be from 0 to 10 points and the score will be 50% of the final grade of the subject. The remaining 50% that will also have a score between 0 and 10 points, will be made through a practical case that will include the discussion of works and case studies along with questions related to the lessons presented.

Risk assessment work:

The quality of the work will be valued by presenting valued especially its originality, current subject, structure, quality, bibliographic sources used, correct use of specific terminology, clarity and correction in the writing, methodology in the development of risk assessment and discussion of the results obtained.

Practical assumption

## 68710 - Food risk analysis and evaluation systems

The ability to interpret a case and the ability to respond to food security problems raised in it will be assessed.

Final grade of the subject:

In any of the evaluation possibilities to pass the subject it will be necessary to reach 5 points out of 10 (maximum result of the final score).

The rating system will be made in accordance with current legislation

### 4. Methodology, learning tasks, syllabus and resources

#### 4.1. Methodological overview

The learning process that has been designed for this subject is based on:

**Theoretical sessions** where the fundamental concepts of Risk Analysis are presented to the student and the methodology for the evaluation of biological and chemical dangers associated with food consumption is presented. Likewise, databases, tools and information sources for the development of food risk assessment models are provided to the student.

**Practical sessions** in the computer room, in which students apply theoretical knowledge and information search to solve cases and problems under the direct supervision of teachers, and the student is presented with a model of evaluation of an alimentary risk of origin biotic and of abiotic origin in real situations.

**Sessions to prepare a food risk assessment model**, in which students apply risk assessment methodologies to the preparation of a specific model of food risk assessment, solving doubts with the direct help of the teacher. This session is done presentially through the system of direct tutoring of the group or the student with the teacher.

**Presentation sessions and discussion** of a food risk assessment model applied to different real scenarios as a basis for decision making in food risk management. In these sessions the participation of the students will be promoted, urging them to make a critical interpretation of the conclusions derived from each exercise.

All the activities and the teaching material will be downloaded and arranged for the use of the student in the digital teaching platform of the University of Zaragoza in which the master's degree in Public Health is located

#### 4.2. Learning tasks

The program offered to the student to help him achieve the expected results includes the following activities:

**Theoretical sessions.** 5 classroom hours (1 hour sessions).

Brief description of contents

## 68710 - Food risk analysis and evaluation systems

Introduction to Risk Analysis. Current status of risk assessment systems

Methodologies for evaluating biological risks associated with food consumption.

Methodologies for assessing chemical risks associated with food consumption.

Study of the risk assessment of a food hazard

**Practical sessions.-** 8.5 contact hours (2 sessions)

Brief description of the contents: Resolution of problems and cases related to the risk assessment procedure:

Theoretical-practical presentation of a model for evaluating a biotic risk and an abiotic risk.

Identification exercises and characterization of the danger.

Exercises to estimate exposure to hazards present in food and the risk associated with food consumption.

**Preparation sessions, presentation and discussion of results.** 4.5 contact hours (two sessions)

The first session consists of the preparation through the corresponding face-to-face tutoring of the risk presentation work. Each group of students presents the work design to the teacher and discusses with it the content, organization and presentation system (2.5 hours)

The second session consists of the presentation of the exercise by each group of students during a time of 20 minutes

Then proceed to the analysis and discussion in group, with the rest of students and teachers, of the results and conclusions of each risk assessment exercise (2 hours)

ACTIVITY	HOURS	HOURS NOT PRESENTIAL	TOTAL
----------	-------	----------------------	-------

## 68710 - Food risk analysis and evaluation systems

	<b>PRESENIAL</b>		
Theoretical sessions	5		5
Practical sessions	8,5		8,5
Presentation and discusión	4,5	32	36,5
Sessions of specific models			
<b>Total</b>	<b>18</b>	<b>32</b>	<b>50</b>

### 4.3.Syllabus

Theoretical sessions

Brief description of contents

Introduction to Risk Analysis. Current status of risk assessment systems

Methodologies for evaluating biological risks associated with food consumption.

Methodologies for assessing chemical risks associated with food consumption.

Study of the risk assessment of a food hazard

Practical sessions

Brief description of the contents: Resolution of problems and cases related to the risk assessment procedure:

Theoretical-practical presentation of a model for evaluating a biotic risk and an abiotic risk.

Identification exercises and characterization of the danger.

Presentation sessions and discussion of results.

## 68710 - Food risk analysis and evaluation systems

Face-to-face tutoring session of the work entrusted. Each group of students presents the work design to the teacher and discusses with it the content, organization and presentation system (2.5 hours)

Each group of students presents the exercise for a time of 20 minutes

Analysis and group discussion, with the rest of the students and professors, of the results and conclusions of each risk assessment exercise (2 hours)

### 4.4.Course planning and calendar

Calendar of face-to-face sessions and presentation of works

The master's calendar and the programming of the theoretical and practical sessions of the subjects will appear on the website of the Faculty of Medicine, at the following address: <http://medicina.unizar.es/horarios>

However, the programming of this subject will follow the following temporal sequence scheme:

- 1) Theoretical sessions taught in Seminar (Faculty of Medicine, Building Aulario B).
- 2) Practical sessions taught in the computer room
- 3) Tutoring sessions: will be held in the Seminar (Faculty of Medicine, Building Aulario B)
- 4) Sessions of presentation of exercises and discussion of results: They will be held in the Seminar (Faculty of Medicine, Building Aulario B).

You can consult the specific dates and the spaces where the sessions will be taught in the hours that will be available at: <http://medicina.unizar.es/horarios>

### 4.5.Bibliography and recommended resources