



Universitat de Lleida

# DEGREE CURRICULUM **FOOD SAFETY**

Coordination: MARIN SILLUE, SONIA

Academic year 2022-23

**Subject's general information**

<b>Subject name</b>	FOOD SAFETY				
<b>Code</b>	13124				
<b>Semester</b>	1st Q(SEMESTER) CONTINUED EVALUATION				
<b>Typology</b>	<b>Degree</b>	<b>Course</b>	<b>Character</b>	<b>Modality</b>	
	Master's Degree in Agronomic Engineering	2	OPTIONAL	Attendance-based	
	Master's Degree in Management and Innovation in the Food Industry	1	COMPULSORY	Attendance-based	
<b>Course number of credits (ECTS)</b>	6				
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	<b>PRACAMP</b>	<b>PRALAB</b>	<b>PRAULA</b>	<b>TEORIA</b>
	<b>Number of credits</b>	0.4	0.4	2.8	2.4
	<b>Number of groups</b>	1	2	1	1
<b>Coordination</b>	MARIN SILLUE, SONIA				
<b>Department</b>	FOOD TECHNOLOGY, ENGINEERING AND SCIENCE				
<b>Teaching load distribution between lectures and independent student work</b>	In situ: 48 hours Autonomous work: 102 hours				
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.				
<b>Language</b>	90% Spanish 10% English				

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
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## Subject's extra information

The Food Safety course belongs to MODULE 1. QUALITY AND CONSUMER. It is a transversal subject that focuses on the food chain, embracing both animal and vegetable products. Adapted to graduates in food science and technology, agricultural and food engineering, and human nutrition and dietetics, this subject introduces the nutritional risks, the food safety management systems and their certification, and the analytical tools to implement and keep them. It deals with key aspects of official control.

Requirements: there are no official prerequisites.

## Learning objectives

- To know the main nutritional risks in food.
- Implement the hazard analysis system and critical control points of a food company, including the associated measurement and analytical systems
- To know how to develop the main hygiene plans in a food company, including the allergen control plan.

- Understand the operation of official control and the repercussions within the management of food safety.
- Know the requirements for the certification of a food safety management system

## Competences

### Basic skills

CB7 That students know how to apply the knowledge acquired and their ability to solve problems in new or little-known environments within broader (or multidisciplinary) contexts related to their area of study

CB8 That students are able to integrate knowledge and face the complexity of formulating judgments based on information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments

CB9 That students know how to communicate their conclusions and the knowledge and ultimate reasons that support them to specialized and non-specialized audiences in a clear and unambiguous way

### General skills

CG1 Develop skills for organization and planning.

CG2 Manage information.

CG4 Develop critical and self-critical capacity.

CG5 Work as a team and interact with other people from the same or different professional field.

CG6 Solve problems and make decisions.

CG7 Develop the ability to work autonomously.

### Transversal skills

CT2 Efficiently use digital technologies in the professional field.

CT4 Evaluate the sustainability and social impact of the proposed proposals and act with ethical, environmental and professional responsibility.

### Specific skills

CE1 Analyze and interpret legislative updates on food.

CE2 Analyze in depth the dangers and evaluate the microbiological, chemical, physical, technological, and nutritional risks that may influence the safety of a food.

CE3 Develop, implement and maintain quality and food safety procedures in food businesses.

## Subject contents

### Theory syllabus

Topic 1. Nutritional risks. Associated regulations.

Topic 2. Management of allergens and substances that cause food intolerance.

Topic 3. Development of prerequisite plans.

Topic 4. Official control.

Topic 5. Management of food alerts.

Topic 6. Certification in food safety. BRC, IFS, ISO22000, FSMA

Topic 7. Innovation in rapid methods for microbiological analysis.

Item 8. Innovation in rapid methods for monitoring critical control points.

Topic 9. New microbiological risk management tools.

Topic 10. Predictive microbiology applied to HACCP and PC and PO calculation.

## Practices

Practice 1. Regular classroom. Resolution of cases of application of the certification guidelines according to the different certifying entities.

Practice 2. Computer room. Application of predictive microbiology in food safety management.

Practice 3. Non-contact work. Development of a hygiene plan for a food industry.

Practice 4. Resolution of cases in non-face-to-face format (Virtual Campus activities).

## Methodology

Training activity	On-site		Off-site		Assesment	Total time	
	Objective	Hours	Student work	Hours	Hours	Hours	ECTS
<b>Lecture</b>	Description of the basics	18	Study time	<b>6act+34</b>	<b>2</b>	<b>60</b>	<b>2,4</b>
<b>Interactive lecture</b>	Solving practical cases	21	Problem solving	3act+14	<b>2</b>	<b>40</b>	<b>1,6</b>
<b>Visit food company</b>	In situ mangament systems	4				<b>4</b>	<b>0.16</b>
<b>Computer room</b>	Practical work	4	Solving problems, create documents	3act+9		<b>16</b>	<b>0.64</b>
<b>Guided work</b>		1	Producing report	29		<b>30</b>	<b>1.20</b>
<b>Total</b>		<b>48</b>		<b>98</b>	<b>4</b>	<b>150</b>	<b>6,0</b>

## Development plan

Sesiones (16.00-20.00)		

8/11/2022	[T1]Riesgos nutricionales: Reglamento de nuevos alimentos y nuevos ingredientes, reglamentos de etiquetado (2 h) Declaraciones nutricionales y de propiedades saludables en los alimentos (2 h)	Sonia Marín Teresa Hernandez
9/11/2022	[T2]Alérgenos e intolerancias. Gestión de los alérgenos y sustancias que provocan intolerancia alimentaria. (2 h) [T4]Control oficial: inspecciones y auditorías. (2h)	Inmaculada Viñas +Victor Lopez Aurora Teixidó
10/11/2022	Actividad no presencial	
15/11/2022	[T4-T5]Control oficial: inspecciones y auditories. Gestión de alertas alimentarias (4 h)	Aurora Teixidó
16/11/2022	[T5] Control oficial: Gestión de alertas alimentarias (2 h) [T6] Certificación en seguridad alimentaria. BRC, IFS, ISO 22000:2005. Prerequisitos y requisitos (2 h)	Aurora Teixidó Vicente Sanchis
17/11/2022	Actividad no presencial	
22/11/2022	[T6] Certificación en seguridad alimentaria. BRC, IFS, ISO 22000:2005. Relación con APPCC. Casos prácticos (4h)	Vicente Sanchis
23/11/2022	[T6] Certificación en seguridad alimentaria. Casos prácticos (2 h) [T7] Innovación en métodos rápidos para análisis microbiológicos. Parásitos. Técnicas moleculares (2 h)	Vicente Sanchis Antonio Ramos
29/11/2022	[T7] Innovación en métodos rápidos para análisis microbiológicos. Parásitos. Técnicas moleculares (4 h)	Antonio Ramos
30/11/2022	[T6] Certificación en seguridad alimentaria. Casos prácticos (2 h) [T5] RGSA. (1 h)	Vicente Sanchis Teresa Hernandez
13/12/2022	[T8] Innovación en métodos rápidos para monitorización de puntos de control crítico (2 h) [T9] Multiexposición a peligros químicos (2 h)	Sonia Marín + Biopharm German Cano
14/12/2022	1a prueba (2h) [T1-T6] 35% [T9] Nuevas herramientas de gestión del riesgo microbiológico: FSO, PO, PC...(2 h)	Vicente Sanchis
20/12/2022	[T10] Microbiología predictiva aplicada a APPCC y cálculo de PC y PO (4 h)	Sonia Marín
21/12/2022	2a prueba (2 h) [T7-T9] 15%	
22/12/2022	Actividad no presencial	

## Evaluation

Type of activity	Assessment type		Weigth (%)
	Procedure	Number	
Lecture	Written test	2	35 15

<b>Interactive lecture</b>	Written test on practical work	1	<b>15</b>
<b>Computer room</b>	Documents	1	<b>10</b>
<b>Guided activity</b>	Report	1	<b>15</b>
<b>Practical activities CV</b>	Report	2	10
<b>Total</b>			<b>100</b>

The average of the two written tests must exceed 5 to qualify for the average with the other activities. Recovery tests must be passed with a minimum of 5.

## Bibliography

### Literature

Agència Catalana de Seguretat Alimentària. 2004. Guia per a l'aplicació de l'autocontrol basat en el sistema d'Anàlisi de Perills i Punts de Control Crític. Generalitat de Catalunya. Departament de Salut. 141 pp.

Wallace C.A., Sperber W.H., Mortimore S.E. 2011. Food safety for the 21st century. Managing HACCP and food safety throughout the global supply chain. Wiley-Blackwell, 315 pp

FAO/OMS. 2007. Análisis de riesgos relativos a la inocuidad de los alimentos. Estudio FAO Alimentación y nutrición 87, Roma, 107 pp.

### Webpages

#### AESAN.

[http://www.aecosan.msssi.gob.es/AECOSAN/web/subhomes/seguridad\\_alimentaria/aecosan\\_seguridad\\_alimentaria.htm](http://www.aecosan.msssi.gob.es/AECOSAN/web/subhomes/seguridad_alimentaria/aecosan_seguridad_alimentaria.htm)

### Additional literature

Lawley, R., Curtis, L, Davis, J. 2008. [The Food safety hazard guidebook](#). Royal Society of Chemistry, cop., Cambridge.

International Commission on Microbiological Specifications for Foods. 2018. [Microorganisms in Foods 7: Microbiological Testing in Food Safety Management](#). 2<sup>a</sup> ed. Springer.Switzerland

International Commission on Microbiological Specifications for Foods. 2004. [Microorganismos de los alimentos 6: ecología microbiana de los productos alimentarios](#). Acribia. Zaragoza.