

**1. General information****Course:** FOOD HYGIENE II**Type:** CORE COURSE**Degree:** 383 - UNDERGRADUATE DEGREE PROGRAMME IN FOOD SCIENCE AND TECHNOLOGY**Center:** 1 - FACULTY OF SCIENCE AND CHEMICAL TECHNOLOGY**Year:** 3**Main language:** Spanish**Use of additional languages:****Web site:****Code:** 58321**ECTS credits:** 6**Academic year:** 2022-23**Group(s):** 22**Duration:** C2**Second language:****English Friendly:** Y**Bilingual:** N**Lecturer:** MARIA AREVALO VILLENA - Group(s): 22

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**2. Pre-Requisites**

It is recommended to have previously studied the subjects of Microbiology and Food Hygiene I

**3. Justification in the curriculum, relation to other subjects and to the profession**

This subject aims to study the food intoxications produced by bacteria, their origin, symptoms and prevention, as well as the study of diseases of food origin transmitted by viruses and parasites, their origin, symptoms and prevention. The study of food poisoning is important for the assurance of the quality of food and the knowledge of the harmful effect that the consumption of food contaminated with pathogenic microorganisms can have on health. The control of microbiological quality of food and its safety in consumption is part of the professional work of this degree both at the level of industries and official bodies.

**4. Degree competences achieved in this course****Course competences**

Code	Description
CB02	Apply their knowledge to their job or vocation in a professional manner and show that they have the competences to construct and justify arguments and solve problems within their subject area.
CB03	Be able to gather and process relevant information (usually within their subject area) to give opinions, including reflections on relevant social, scientific or ethical issues.
CB04	Transmit information, ideas, problems and solutions for both specialist and non-specialist audiences.
E06	To know and be able to handle the techniques and procedures of food analysis
E14	To know knowledge on microbiology and parasitology and food toxicology
E15	To analyse and evaluate food risks and hazards. To manage food safety.
E16	To know and manage behaviour guidelines on personal hygiene, food handling and hygienic control of food processing
E17	To know abiotic contaminants that affect foods, evaluation methods and prevention guidelines.
E19	To know the fundamentals of quality and traceability systems and be able to perform their deploy, as well as to evaluate and control the food quality
E22	To perform formation of staff in the food sector
G03	To develop habits of excellence and quality in the professional exercise applying the fundamental human rights, the principles of equality of opportunities and the values of a culture of peace and democratic. Acquiring an ethical commitment and acting according to the professional business ethics and the respect to the environment.
G07	To possess ability of organization and planning, initiative, entrepreneurship and aptitude to be employed in teamworks. To possess capacity of resolution of specific problems of the professional area and to develop the critical reasoning and decision making.
G09	To develop the motivation for quality, the capacity to adapt to new situations and the creativity.

**5. Objectives or Learning Outcomes****Course learning outcomes****Description**

To develop in the student the aptitude to manage the hygiene and food safety in the different areas of the food sector.

To develop his capacity to search information and its synthesis both individually and in a teamwork.

To learn the management of the basic and advanced technologies and procedures in the microbiological laboratory and toxicological analysis of food, as well as and to be able to interpret the obtained results.

To acquire the necessary knowledge to guarantee the food safety of the food and the fulfillment of the procedure of food hygiene in the industry, markets and catering.

To know the origin and prevention of the microbial alterations of the food products.

To know and to be able to apply the technologies of microbiological analysis of the food.

To know the food infection and toxicity produced by bacteria, virus and parasites, as well as its origin, symptoms and prevention.

To acquire the necessary knowledge to guarantee the food safety of the food and the fulfillment of the procedure of food hygiene in the industry, markets and catering.

## 6. Units / Contents

**Unit 1: Microbial hazards present in food**

**Unit 2: Foodborne diseases**

**Unit 3: Food security and risk assessment**

**Unit 4: Food infection produced by Salmonella and Shigella.**

**Unit 5: Food infection produced by Escherichia coli**

**Unit 6: Food infection produced by Yersinia enterocolitica**

**Unit 7: Food infection produced by Vibrios**

**Unit 8: Food infection produced by Campylobacter, Aeromonas y Brucella**

**Unit 9: Food infection produced by Listeria monocytogenes**

**Unit 10: Food infection produced by Clostridium perfringens**

**Unit 11: Acute food poisoning. Botulism.**

**Unit 12: Toxiinfection produced by Bacillus cereus**

**Unit 13: Intoxication by Staphylococcus aureus**

**Unit 14: Foodborne viruses.**

**Unit 15: Animal parasites transmitted by food. Protozoa**

**Unit 16: Animal parasites transmitted by food. Nematodes**

## 7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Lectures		1.2	30	Y	N	
Laboratory practice or sessions [ON-SITE]	Practical or hands-on activities		0.8	20	Y	Y	
Workshops or seminars [ON-SITE]	Workshops and Seminars		0.2	5	Y	N	
Problem solving and/or case studies [ON-SITE]			0.06	1.5	Y	N	
Final test [ON-SITE]	Assessment tests		0.14	3.5	Y	Y	
Study and Exam Preparation [OFF-SITE]			2.3	57.5	N	-	
Practicum and practical activities report writing or preparation [OFF-SITE]	Group Work		0.6	15	N	-	
Writing of reports or projects [OFF-SITE]	Workshops and Seminars		0.7	17.5	N	-	
<b>Total:</b>			<b>6</b>	<b>150</b>			
<b>Total credits of in-class work: 2.4</b>			<b>Total class time hours: 60</b>				
<b>Total credits of out of class work: 3.6</b>			<b>Total hours of out of class work: 90</b>				

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

## 8. Evaluation criteria and Grading System

Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Final test	70.00%	70.00%	A final exam will be conducted to assess the practical, theoretical and competencies acquired in the subject.
Progress Tests	30.00%	30.00%	Practical activities and theoretical knowledge will be evaluated through questionnaires or practical exercises.
<b>Total:</b>	<b>100.00%</b>	<b>100.00%</b>	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences).

### Evaluation criteria for the final exam:

#### Continuous assessment:

The final note will be weighted according to the percentages indicated above.

#### Non-continuous evaluation:

The final note will be weighted according to the percentages indicated above. If any progress test has not been carried out it can be replaced by a special section in the final exam.

## 9. Assignments, course calendar and important dates

**Not related to the syllabus/contents**

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
ELEY, R.	Intoxicaciones alimentarias de etiología microbiana	Acribia S.A	Zaragoza		1994	
HUI, Y.H., GORHAM, J.R., MURRELL, K.D. y CLIVER, O.	Foodborne disease handbook	Marcel Dekker	New York		2001	
ICMSF	Microorganismos de los alimentos 7. Análisis microbiológico en la gestión de la seguridad alimentaria.	Acribia	Zaragoza	84-200-1037-5	2004	
ICMSF	Microorganismos de los alimentos. Características de los patógenos microbianos	Acribia S.A	Zaragoza		1998	
PASCUAL ANDERSON, M.R. y PASCUAL ANDERSON V.	Microbiología alimentaria. Metodología analítica para alimentos y bebidas	Díaz de Santos.	Madrid		2000	
Adams, M. R.	Microbiología de los alimentos	Acribia		84-200-0830-3	1997	
Yousef, Ahmed E.	Microbiología de los alimentos : manual de laboratorio	Acribia		10-84-200-1066-9	2006	
	Microbiología de los alimentos : características de los pató	Acribia		84-200-0854-0	1998	