



Information about the subject

Degree: Bachelor of Science Degree in Veterinary Medicine

Faculty: Faculty of Veterinary Medicine and Experimental Sciences

Code: 1260502 **Name:** Food hygiene and safety II

Credits: 6,00 **ECTS Year:** 5 **Semester:** 1

Module: Module of Hygiene, Technology and Food Safety

Subject Matter: Food Security and Public Health **Type:** Compulsory

Department: Animal Production and Public Health

Type of learning: Classroom-based learning

Languages in which it is taught: Spanish

Lecturer/-s:

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Module organization

Module of Hygiene, Technology and Food Safety

Subject Matter	ECTS	Subject	ECTS	Year/semester
Food Technology	12,00	Food Technology I	6,00	4/1
		Food Technology II	6,00	4/2
Food Security and Public Health	12,00	Food hygiene and safety I	6,00	4/2
		Food hygiene and safety II	6,00	5/1

Recommended knowledge

Is recommended to have coursed Parasitology, General and specific pathological anatomy, Microbiology, Epidemiology and Hygiene and Food Safety



Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

- R1 The student has a global knowledge of the legislative organisation, has the tools to update it and is capable of making judgments based on legislation.
- R2 The student understands the most important basic concepts of hygiene and food safety.
- R3 The student understands the way an inspection is carried out and the role of the veterinary inspector in the self-monitoring system.
- R4 The student has notions about the importance of allergen control and about preventing their presence.
- R5 The student identifies the agents or situations that can lead to the appearance of hazards in the agri-food chain.
- R6 The student understands the importance of the correct implementation and monitoring of the HACCP that must be carried out in the agri-food industry.
- R7 The student is knowledgeable about the legislation affecting food, in particular food subject to veterinary inspection.
- R8 The student understands the procedure to be followed during ante-mortem and post-mortem inspection.
- R9 The student knows the main processes that occur in meat after slaughter and how the quality of the product can be improved.
- R10 The student is aware of the controls that must be carried out during the inspection of raw and auxiliary materials subject to veterinary inspection.
- R11 The student is aware of the hygienic and sanitary particularities of the different raw materials or agents that are under the responsibility of the official veterinary control and that are necessary in order to ensure food safety.



Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

BASIC		Weighting			
		1	2	3	4
CB2	Capacity to apply knowledge to work or occupation in a professional way and have the competences that are proved by preparing and arguing topics and problem-solving in their specific field of study.				X
CB3	Capacity to gather and interpret relevant data usually within their specific field of study and capacity to make judgments that include reflection on relevant social, scientific or ethical issues.				X
CB4	Capacity to communicate information, ideas, problems and solutions at specialist and non-specialist levels.				X
CB5	Capacity to develop those learning skills needed to undertake further studies with a high degree of autonomy.				X

GENERAL		Weighting			
		1	2	3	4
CG0	Capacity to speak well in public.				X
CG1	Knowing and applying hygiene control, inspection, technology for the production and processing of food for human use from primary production to consumer.				X
CG5	Understanding and applying laws, regulations and administrative provisions in all areas of the veterinary profession and public health, understanding the ethical implications of health in a changing global context.				X
CG6	Developing professional practice, acquiring skills related to teamwork, with an efficient use of resources and quality management.				X
CG7	Identifying emerging risks in all areas of the veterinary profession.			X	



SPECIFIC	Weighting				
	1	2	3	4	
E57	Knowing and applying food changes, alterations and adulterations.		X		
E58	Knowing and applying health inspection criteria and regulations.			X	
E59	Knowing and applying ante- and post-mortem veterinary inspection.			X	
E60	Knowing and applying establishment and product inspection.		X		
E61	Knowing and applying good hygienic practices and the hazard analysis critical control point system.			X	
E62	Knowing and applying handling and treatment control.			X	
E63	Knowing and applying food safety and public health rules.			X	
E64	Knowing and applying food risk analysis: risk identification, management and communication.		X		
E65	Knowing and applying research methods on outbreaks of food toxi-infections.		X		
E66	Knowing and applying dynamics and demographics of infections and food poisonings.		X		
E67	Knowing and applying epidemiology and diagnosis.	X			
E68	Knowing and applying monitoring and surveillance systems.			X	
TRANSVERSAL	Weighting				
		1	2	3	4
T1	Capacity of analysis, synthesis, implementation of knowledge for problem-solving and decision-making.				X
T2	Understanding and applying the scientific method to professional practice including evidence-based medicine.		X		



T3	Basic knowledge of the veterinary profession: legal, economic, administrative, planning and time management issues and the veterinarians' society together with the importance of monitoring quality, standardization and protocols of veterinary practice.									X
T4	Mastering fluency in oral and written mother tongue communication, listening and responding effectively using a language appropriate to audience and context.									X
T6	Using information technology to communicate, share, search for, collect, analyze and manage information, especially related to the veterinarian practice.								X	
T7	Ability to adapt to new situations, self-critical ability, being aware of personal limitations and understanding when and where seeking and obtaining advice and professional help.									X
T8	Efficient and effective work, both independently and as a member of a multidisciplinary team or unit, showing respect, appreciation and sensitivity to the work of others.									X
T9	Keeping an ethical behaviour in the exercise of given responsibilities toward the profession and society.									X
T10	Ability to learn, to research, and to be aware of the need to keep knowledge updated, and attending training programs.									X
T11	Ability to work in an international context, appreciating diversity and multiculturalism, through the knowledge of foreign cultures and customs.									X



Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11	50,00%	Written assessment of acquired knowledge and skills. The test may consist of a series of open-ended questions or multiple-choice questions about the theoretical contents of the module and/or practical exercises (problem-solving).
R1, R2, R3, R4, R5, R7, R8, R9, R10, R11	20,00%	Evaluation of the use of the practical lessons in the classroom, of problems or computer science, seminars and tutorials, by means of participation, computer-supported problem solving and the elaboration of the corresponding reports.
R1, R7, R8, R10, R11	15,00%	Evaluation of the practical laboratory work, which must demonstrate the competences acquired by the student and his or her ability to use them to solve the different situations and problems that arise in a laboratory; this assessment may consist of one of the following methods, or a combination of several of them: an individual written test, the individual or group performance of a laboratory experience, the delivery of an individual or group report on the work carried out in the laboratory.
R1, R2, R3, R4, R6, R7, R10, R11	10,00%	Evaluation of group work through a system of continuous assessment throughout the course based on the delivery of assignments the objectives and content of which will be proposed by the teacher.
R1, R2, R3, R7, R11	5,00%	Evaluation of activities in which the student must do some research individually and structure information related to each of the topics through a system of continuous assessment throughout the course based on the delivery of papers, the objectives and contents of which will be proposed by the teacher.



Observations

It will be essential to get a 5 on the written exam to be able to make media with the rest of the notes.

The written test will consist of a multiple choice test, of which only one is true (wrong answers will subtract). It will also include short questions about the content seen in class.

The practical laboratory test will consist of an oral examination of the practices carried out in the laboratory or in the necropsy room. It will be done on the same day that the practice ends or on subsequent days. If the student is suspended, they must recover it coinciding with the second official examination session.

Seminars (identification of marine species, inspection in slaughterhouse), practical classroom cases (confiscation criteria, SANDACH) and visits that will be evaluated will be carried out throughout the course.

In order to carry out the evaluation of the individual work, during the course and at the end of some topic or block, questions will be asked or cases will be presented that must be solved individually.

In the case of group work, a theme will be proposed or it will be the students who propose it, about something related to the content seen in class. The evaluation will be carried out on the day of the oral presentation, valuing knowledge and presentation. In the event that a student cannot present the planned day, they must notify it well in advance to be able to change the day and always with a justified cause. The non-exposure with the rest of the group will mean a 0 in the evaluation of the student in question both in the individual and in the group.

MENTION OF DISTINCTION:

In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with 9 Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.



Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

- M1 On-site training activity aimed primarily at acquiring knowledge acquisition skills. It is characterised by the fact that students are spoken to. Also called master class or exposition, it refers to the oral presentation made by the teacher, (with the support of blackboard, a computer and a projector for the display of texts, graphs, etc.), in front of a group of students. They are expository, explanatory or demonstrative sessions of contents. The size of the group is determined by the limit or physical capacity of the classroom; therefore, it is a single group.
- M2 On-site training activity aimed primarily at obtaining knowledge application and research skills. Knowledge is built through interaction and activities. The activity consists of supervised monographic sessions with shared participation (teachers, students, experts). The size of the group is variable, from one large group to various small groups, with a minimum of 6 students to ensure interaction. The evaluation will be based on follow-up records kept by the teacher. Participation and the development of the capacity to problematize should be taken into account.
- M4 On-site training activity in groups that takes place in the classroom. It includes working with documents and formulating ideas without handling animals, organs, objects, products, or corpses (e.g., work with articles or documents, clinical case studies, diagnostic analyses, etc.). It would correspond to "Animal-free supervised practical work", type e1, from the European evaluation of EAEVE. The size of the group is variable, in a range of 10 to 20 students.
- M5 On-site training activity in groups that takes place in the Computer Lab where the computer is used as support for learning. It includes work with computer models, specific software, Web queries, etc. It would correspond to "Animal-free supervised practical work", type e1, from the European evaluation of EAEVE. The size of the group is variable, in a range of 10 to 20 students.
- M6 On-site training activity in groups carried out in the laboratory. It includes the sessions where the students develop laboratory experiments, make dissections or use the microscopes for the study of histological or histopathological samples actively and autonomously, under the supervision of the professor. It also includes work with healthy animals, objects, products, corpses (e.g., animal handling, bacteriological practices, physiology or biochemistry, meat inspection, etc.). It would correspond to the "Supervised practical non-clinical animal work" type e2 of the European evaluation of EAEVE. The size of the group is variable, in a range of 10 to 20 students.



- M7 On-site training activity that is defined as the clinical practical work developed in the Veterinary Clinical Hospital or clinical centres ascribed to the University, as well as itinerant clinical practices, mainly with ruminants, equids, pigs, birds and aquatic animals. Also included are necropsies, surgical workshops and training in clinical examination techniques or diagnosis with healthy patients. In these practical sessions the student will always work with animals, which can be healthy (e.g. propaedeutic or obstetrics) or clinical cases (individual or collective), including a protocol or work scheme, being supervised by a teacher and assuming the provision of a service. This type of training corresponds to type e3 of the EAEVE European evaluation called "Clinical Training" (strictly hands-on)". The size of the group will be 5 students or fewer.
- M8 A set of on-site training activities carried out by the teacher to provide personalised attention to the student or in small groups with the aim of reviewing and discussing the materials and topics presented in classes, seminars, readings, carrying out projects, etc. The aim is to ensure a truly comprehensive education of the student rather than a mere transfer of information. It is, therefore, a personalized assistance relationship in which the tutor assists, facilitates and guides one or more students in the learning process.
- M9 Set of processes that attempt to evaluate the learning outcomes of students expressed in terms of acquired knowledge, capacities, skills or abilities developed and manifested attitudes. It covers a wide range of activities that can be developed for students to demonstrate their training (e.g. written, oral and practical tests, projects or assignments). It also includes the Official Calls.
- M10 Autonomous training activity, including activities and coursework, bibliographic searches. The results obtained from unsupervised group and teamwork will be evaluated, with particular attention paid at the time of evaluation to the acquisition of specific knowledge development skills through group work.
- M11 Autonomous training activities related to personal study, or the preparation of individual course assignments. The individual preparation of readings, essays, problem solving, papers, reports, etc. will be evaluated through presentations or submissions during theoretical classes, practical classes, seminars and/or tutorials. The evaluation of the submitted papers will consider the structure of the paper, the quality of the documentation, originality, spelling and presentation.



IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
Theoretical lessons (TL) M1	R1, R2, R3, R5, R6, R7, R8, R9, R10, R11	20,00	0,80
Seminars (S) M1, M4	R3, R8	13,00	0,52
In-Classroom Practice (ICP) M4	R1, R2, R3, R8, R10, R11	8,00	0,32
Laboratory Practice (LP) M6	R8	14,00	0,56
Tutorial M8	R1, R2, R4, R7, R8, R9, R10, R11	3,00	0,12
Evaluation (Ev) M9	R1, R2, R3, R5, R6, R7, R8, R9, R10, R11	2,00	0,08
TOTAL		60,00	2,40

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
Group work M10	R1, R2, R3, R7, R8, R10	40,00	1,60
Individual work M11	R1, R2, R3, R7, R8, R9, R10, R11	50,00	2,00
TOTAL		90,00	3,60



Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
UD1 INTRODUCTION	<p>Lesson 1.1. The veterinarian inspection of foods of animal origin.</p> <p>Lesson 1.2. Legislative regulation</p> <p>Lesson 1.3. General hygiene of products of animal origin</p>
UD2 ANTE AND POST MORTEM. PROCEEDINGS AFTER THE SACRIFICE	<p>Lesson 2.1. Structural and hygienic general conditions of slaughterhouses. Types of abattoirs.</p> <p>Lesson 2.2. Transport of animals: conditions of transport, welfare, impact on meat quality (stress, weight loss ...)</p> <p>Lesson 2.3. Inspection ante mortem generalities</p> <ul style="list-style-type: none">Lesson 2.3.1 Ante-mortem inspection in ungulatesLesson 2.3.2 Ante-mortem inspection in poultryLesson 2.3.3 Ante-mortem inspection in lagomorphs <p>Lesson 2.4. Post-mortem inspection generalities</p> <ul style="list-style-type: none">Lesson 2.4.1 Ante-mortem inspection in ungulatesLesson 2.4.2 Ante-mortem inspection in poultryLesson 2.4.3 Ante-mortem inspection in lagomorphs <p>Lesson 2.5. Animals not slaughtered in the slaughterhouse. Emergency slaughter</p> <p>Lesson 2.6. Investigation of residues and other controls in slaughterhouse</p> <p>Lesson 2.7. Cutting rooms and cold stores. Categorization and classification of channel</p> <p>Lesson 2.8. Management of animal by-products not intended for human consumption (SANDACH)</p>



UD3 INSPECTION AND CONTROL OF ANIMAL PRODUCTS

Lesson 3.1. Control of meat and meat products

Lesson 3.2. Control aspects in egg products and derivatives

Lesson 3.3. Control of fish and fishery products and aquaculture.

Lesson 3.4. Inspection of milk and dairy products.
Determination of hygienic sanitary quality

Lesson 3.5. Control of honey products

Lesson 3.6. Other veterinary control

Organization of the practical activities:

	Content	Place	Hours
PR1.	Viscera inspection	Hospital	3,00
PR2.	Inspection of fishery products	Laboratory	3,00
PR3.	Inspection and control of other products	Laboratory	3,00
PR4.	Visit to slaughterhouse	Technical visit	4,00
PR5.	Visit to food industry	Technical visit	2,00

Temporary organization of learning:

Block of content	Number of sessions	Hours
UD1 INTRODUCTION	2,00	4,00
UD2 ANTE AND POST MORTEM. PROCEEDINGS AFTER THE SACRIFICE	22,00	44,00
UD3 INSPECTION AND CONTROL OF ANIMAL PRODUCTS	6,00	12,00



References

Basic:

- Bartels, H. Inspección veterinaria de la carne. Acribia. Zaragoza. 1997
- Beerens, H. y luquet, F.M. Guía Práctica para el Análisis Microbiológico de la Leche y Productos Lácteos. Acribia, Zaragoza. 1990
- Benitez, M. Tecnología del pescado. IC. 2013
- Bonet, M. Elaboración de congelados de productos de la pesca. IC. 2013
- Campos, R. Acondicionado del pescado y marisco. IC. 2013
- Canoura, J. Elaboración de masas, pastas, precocinados y cocinados de pescado. IC. 2013
- Domínguez, J.C. Inspección ante mortem y post mortem en Animales de Producción: Patologías y Lesiones. Editorial Servet, Zaragoza. 2011
- Euzeby, J. Los parásitos de las carnes. Acribia. Zaragoza. 2000
- Feiner, G., Manual de productos cárnicos, Acribia. 2018
- Fellows, P. Tecnología del procesado de alimentos: principios y práctica. Acribia. 2007
- Franco, A. J., Aguado, M. C., Gómez, J.C. Anatomía aplicada a la inspección en mataderos: Guía práctica de inspección post-mortem en animales de abasto y de granja. Editorial Acaémica Española, 2019.
- Gómez, A. Manual Práctico de Inspección ante Mortem y Post Mortem en Ungulados Domésticos. Multimédisca Ediciones Veterinarias, 2013.
- Gracey, J.F. Mataderos Industriales. Tecnología y Funcionamiento. Acribia, Zaragoza. 2001
- Hall, G.M. Tecnología del procesado de pescado. Acribia. 2001
- Moreno García, B. Higiene e Inspección de carnes II. Ed. Diaz de Santos. Madrid. 2003
- Nielsen, S.S. Análisis de los alimentos. Acribia. 2009
- Price, J.F. Mead G.C. Ciencia de la carne y de los productos cárnicos. Acribia. 1994
- Richardson, R.I. Ciencia de la carne de ave. Acribia. 2001

Complementary:

- Fikuart, K, Holleben K Von, Khun, G. Práctica e higiene del transporte de animales. Acribia. 1996
- Gómez Juárez, Á. Manual práctico de inspección ante mortem y post mortem en ungulados domésticos. Multimédisca Ediciones Veterinarias. 2013
- Moreno García, B. Higiene e Inspección de carnes I. Ed. Diaz de Santos. Madrid. 2006

URLs of interest:

- Agencia Española de Consumo, Seguridad Alimentaria y Nutrición:
http://www.aecosan.msssi.gob.es/AECOSAN/web/home/aecosan_inicio.htm
- Autoridad Europea de Seguridad Alimentaria: <http://www.efsa.eu.in>
- Boletín Oficial del Estado: https://www.boe.es/diario_boe/
- Codex Alimentarius: <http://www.codexalimentarius.net>
- Diario Oficial de la Unión europea: <http://eur-lex.europa.eu/oj/direct-access.html?locale=es>



Dirección General de Salud Pública de Valencia: <https://www.sp.san.gva.es/>
European Comission about Health and Food Safety:
http://ec.europa.eu/dgs/health_food-safety/index_en.htm
Ministerio de Agricultura Pesca y Alimentación: <https://www.mapa.gob.es/es/>
OMS: <http://www.who.int/fsf>
OIE: <http://www.oie.int/es/>