

**Información del Plan Docente**

<b>Academic Year</b>	2017/18
<b>Faculty / School</b>	105 - Facultad de Veterinaria
<b>Degree</b>	451 - Degree in Veterinary Science
<b>ECTS</b>	14.0
<b>Year</b>	5
<b>Semester</b>	Annual
<b>Subject Type</b>	Compulsory
<b>Module</b>	---

**1.General information****1.1.Introduction****1.2.Recommendations to take this course****1.3.Context and importance of this course in the degree****1.4.Activities and key dates****2.Learning goals****2.1.Learning goals****2.2.Importance of learning goals****3.Aims of the course and competences****3.1.Aims of the course****3.2.Competences****4.Assessment (1st and 2nd call)****4.1.Assessment tasks (description of tasks, marking system and assessment criteria)****5.Methodology, learning tasks, syllabus and resources****5.1.Methodological overview**

The learning process of the course is based on theoretical exposition activities by the teacher, joint development of models of self-control and HACCP and laboratory practices to be done in discussion seminars or sessions. Specific practicum of the subject will be in food businesses with a focus on practical sessions stays related to hygiene, antemortem and postmortem inspection in slaughterhouses and cutting plants. Sessions related to the objectives of the pilot course in an integrated manner with the teaching practices of food technology plant is also developed.

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### 5.2.Learning tasks

A total of 90 hours of participatory lectures (9 ECTS) are scheduled.

A total of 30 hours of practice to be coordinated with the specific contents of the course syllabus and related to hygiene, inspection and food control are scheduled by the Centre.

Laboratory practices and seminars consist of ten sessions of 3 hours each, in the labs of Nutrition and Food Science Department of Animal Science and Production Food (Building of Animal Husbandry, street level) and Pilot Plant Science and Food Technology and in computer classrooms and other educational facilities of the Centre. These sessions include: Laboratory practices, seminars, case studies, cooperative work and work presentations.

The Practicum of Hygiene and Food Control Inspection has a content of 2 ECTS with a presentiality 60%, which implies a total of 30 hours of practice teaching. Learning activities include seminars, external practices in slaughterhouses, practices in the Pilot Plant Science and Food Technology and drafting reports.

Likewise, Two hours per week are available for every student to develop an individual mentoring with the teachers to solve doubts and questions along the learning process. Moreover all related to the add system would be used for virtual mentoring

### 5.3.Syllabus

The program that the student is offered to help you achieve the expected results includes the following aspects:

#### 1: Development of lectures

The exhibition part will be developed in a total of 32 lessons divided into two blocks according to the following schedule:

**1 st Part** .- the general concepts of the subject and its objectives are defined and the basics of prevention and control of food safety, food control and food inspection. This part is constituted by a total of 11 lessons:

Lesson 1.- Concept and content of Hygiene, Inspection and Food Control.

Lesson 2.- Concept and current status of Food Safety

Lesson 3.- Food legislation

Lesson 4.- Sampling, food inspection and official food control procedures

Lesson 5.- General Aspects of food contamination

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Lesson 6.- Food hazard of biological origin.

Lesson 7.- Food hazard of abiotic risk

Lesson 8.- The Hygiene in the Food Industry: Code of good hygiene practice

Lesson 9.- Tools for evaluation, control and management of food hygiene and safety: prerequisites hygiene, traceability and HACCP.

Lesson 10.- The risk analysis of food hazards: assessment, management and communication

Lesson 11.- Other management tools safety and food hygiene: the precautionary principle, alert management and food crises; food safety objectives, shelf-life.

**2 nd part** .- It consists of specific modules dedicated to Hygiene, Inspection and Food Control of those foods direct responsibility in the veterinary profession. The block is divided into modules related to each type of food:

### **1 st Module.- Hygiene, Inspection and Control of Meat and meat products**

Lesson 12.- Performance criteria for meat consumption

Lesson 13.- Hygiene in the meat production

Lesson 14.- Food Safety management tools and autocontrol in meat production

Lesson 15.- Veterinary Inspection and Official Control in meat production

Lesson 16<sup>a</sup>.- Hygiene, Inspection and Control in the meat processing chain

### **2 nd Module.- Hygiene, Inspection and Control Milk and Dairy Products**

Lesson 17. Performance criteria for drinking milk

Lesson 18. Hygiene in the fresh milk production

Lesson 19.- Food Safety management tools and autocontrol in milk production

Lesson 20.- Inspection and Official Control in the milk production and processing

Lesson 21.- Hygiene, Inspection and Control in the dairy products processing chain

### **3rd Module.- Hygiene, Inspection and Control of fish and fishery products. Idem of Shellfis**

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Lesson 22. Performance criteria for seafood consumption

Lesson 23.- Hygiene in the seafood production

Lesson 24.- Food safety management tools and control in seafoods products

Lesson 25.- Official Inspection and Control of fresh and frozen seafoods

Lesson 26.- Hygiene, Inspection and Official Control of processed seafoods

Lesson 27.- Hygiene, Inspection and Official Control of shellfish

### **4th Module.- Hygiene, Inspection and Control of eggs and eggs products**

Lesson 28.- Performance criteria of table eggs

Lesson 29.- Hygiene, Inspection and Official Control of consumption eggs

Lesson 30.- Hygiene, Inspection and Control Officer of egg products.

### **5th Module.- Hygiene, Inspection and Control in the RTE. Processing industries prepared foods. Retailers of foods**

Lesson 31.- Hygiene, Inspection and Control Officer and /or RTE. Food retail outlets. Inspection and Official Control.

### **6th Module.- Hygiene, Inspection and Control of other foods Veterinary inspection**

Lesson 32.- Hygiene, Inspection and Control Officer of honey; Hygiene, Inspection and Control Officer of edible mushrooms. Hygiene, Inspection and Control of preserves and canned foods.

## **2: Development of practical classes**

**Practice PL-1** (Cases study).- Rules governing the exercise of hygiene, inspection and food control: Labelling inspection. Official sampling. .

**Practice PL-2** (Cases study).- Search food legislation.

**Practice PL-3** (Laboratory).- Control of hygiene in the food industry: surface analysis in the industry. Water control in the food industry.

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**Practice PL-4 and PL-5** (Laboratory).- Food microbiological analysis: process hygiene criteria and food safety criteria.  
**Practice PL-6** (Cases study).- Studies of food shelf life. Study of outbreaks of food poisoning and infections

**Practice PL-7** (Laboratory). - Identification of fish species and assessing the degree of freshness. Fish inspection. Identification of species of mollusks and crustaceans.

**Practice PL-8 and PL-9** (Cases study).- Methodology for the development of a self-management plan (HACCP) in the food industry. Self-development model. Exhibition, discussion and evaluation of the model.

**Practice PL-10** (Work presentation).-Presentation, defense and discussion. Implementation of HACCP model in the food industry.

### 3.-Practicum of the course (2 ECTS)

#### Slaughterhouse seminars (3 seminars of 3 hours each)

Seminar S1.- Organization official inspection and control system of meat)

Seminar S2.- Hygiene and certification slaughterhouse

Seminar S3.- Official audits slaughterhouse

#### Slaughterhouse practices (5 practices to develop in the slaughterhouse Mercazaragoza)

**Practice MP1.**- slaughterhouse. Hygienic control. Afternoon (3 hours)

**Practice MP2.**- slaughterhouse. HACCP slaughterhouse. Afternoon (3 hours)

**Practice MP3.**- veterinarian practice on animal protection in the slaughterhouse. Afternoon (3 hours)

**Practice MP4.**- slaughterhouse. official inspection. Mornings (2.5 hours)

**Practice MP5.**- practice slaughterhouse practices. official inspection. Afternoon (3.5 hours)

#### Practicum in the Pilot Plant Science and Food Technology (2 practices of 3 hours each)

**PPT6 practice and PPT7** .- (6 hours) Activities related to this practices will be made in full at the Pilot Plant CT. Design, implementation and maintenance of good hygiene practice and HACCP system in the process of preparing food. Considering the facilities that are available in the pilot plant food with which it intends to work, different food processes related to the main food sectors will be proposed.

## 5.4. Course planning and calendar

Dates classroom sessions will be described in detail together with those of other subjects, along with the rest of subjects fifth year in the Degree of Veterinary Medicine, on the website of the Faculty of Veterinary Medicine ( <http://veterinaria.unizar.es/gradoveterinaria/> ). This link will be updated at the beginning of each academic year.

Moreover, all ads related to the subject will be introduced in the add system in which the subject is developed.

## 5.5. Bibliography and recommended resources

[BB: Bibliografía básica / BC: Bibliografía complementaria]

- [BB] [Aspectos generales de la higiene, inspección y control alimentario] - El autocontrol en los establecimientos alimentarios : guía para la aplicación del autocontrol basado en el sistema de análisis de peligros y puntos de control crítico /dirección Gloria Cugat i Puyol ; coordinación Esther Bigas i Vidal ; autores :LLuís Aragonés Martin. Barcelona : Agencia Catalana de Seguridad Alimentaria, 2005 [Para acceder al texto completo mirar URL]
- [BB] [Aspectos generales de la higiene, inspección y control alimentario] - Herrera Marteache, Antonio. La Seguridad alimentaria y sus implicaciones en la defensa de la Salud Pública / Antonio Herrera Marteache . Zaragoza : Universidad de Zaragoza, 2005
- [BB] [Aspectos generales de la higiene, inspección y control alimentario] - Jay, James M.. Microbiología moderna de los alimentos / James M. Jay, Martin J. Loessner, David A. Golden ; [traducción a cargo de Juan Antonio Ordóñez Pereda, Miguel Ángel Asensio Pérez , Gonzalo D. García de Fernando Minguillón] . 5ª ed. Zaragoza : Acribia, imp. 2009
- [BB] [Aspectos generales de la higiene, inspección y control alimentario] - Limpieza y desinfección en la industria alimentaria / coordinador, Gerhard Wildbrett ; traducido por Jaime Esain Escobar . Zaragoza : Acribia, 2000
- [BB] [Aspectos generales de la higiene, inspección y control alimentario] - Marriott, Norman G.. Principios de higiene alimentaria / Norman G. Marriott ; traducido del inglés por Jaime Esain Escobar . Zaragoza : Acribia, 2003
- [BB] [Aspectos generales de la higiene, inspección y control alimentario] - Microorganismos de los alimentos. 6, Ecología microbiana de los productos alimentarios / [Patrocinado por the International Commission on Microbial Specifications for Foods of the International Association of Microbiological Societies] ; [traducción a cargo de Bernabé Sanz Pérez...(et al.)] . Zaragoza : Acribia, imp. 2001
- [BB] [Aspectos generales de la higiene, inspección y control alimentario] - Microorganismos de los alimentos. 8, Uso de datos para evaluar el control del proceso y la aceptación del producto / ICMSF (International Commission on Microbiological Specifications for Foods). Zaragoza : Acribia, D. L. 2016
- [BB] [Aspectos generales de la higiene, inspección y control alimentario] - Montville, Thomas J.. Microbiología de los alimentos : introducción / Thomas J. Montville y Karl R. Matthews ; traducción a cargo de María Mercé Torra Reventós . Zaragoza : Acribia, D.L. 2009
- [BB] [Aspectos generales de la higiene, inspección y control alimentario] - Sistemas de calidad e inocuidad de los alimentos : manual de capacitación sobre higiene de los alimentos y sobre el sistema de análisis de peligros y de puntos críticos de control (APPCC) / publicado por la Organización de las Naciones Unidas para la Agricultura y la Alimentación y el Ministerio de Sanidad y Consumo de España . Roma : FAO ; Madrid : Ministerio de Sanidad y Consumo , 2002
- [BB] [Aspectos generales de la higiene, inspección y control alimentario] - Toxicología alimentaria / Ana Mª Cameán, Manuel Repetto (editores) . Madrid : Díaz de Santos, D.L. 2006
- [BB] Gómez Juárez, Ángel. Manual práctico de inspección ante mortem y post mortem en ungulados domésticos / Ángel Gómez Juárez, Teresa Álvarez Durriñ Sant Cugat del Vallés, Barcelona : Multimédica Ediciones Veterinarias, D. L. 2013
- [BB] [Higiene, inspección y control de alimentos aplicada] - Alais, Charles. Ciencia de la leche : principios de técnica lechera / Charles Alais ; versión española por Antonio Lacasa Godina . [2a. ed.], reimpr. Barcelona [etc.] : Reverté, D.L. 2003
- [BB] [Higiene, inspección y control de alimentos aplicada] - Diego Calonge, Francisco de. Setas : (hongos) : guía ilustrada / Francisco de Diego Calonge . 2a ed. Madrid : Mundi-Prensa, D. L. 1990
- [BB] [Higiene, inspección y control de alimentos aplicada] - Domínguez Vellarino, Juan Carlos. Inspección ?ante

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mortem y post mortem? en animales de producción : patologías y lesiones / Juan Carlos Domínguez Vellarino .  
Zaragoza : Servet , 2011

- [BB] [Higiene, inspección y control de alimentos aplicada] - Guía de especies marinas desembarcadas en puertos españoles . [Madrid]: Ministerio de Medio Ambiente y Medio Rural y Marino, Secretaría General del Mar, [2008]
- [BB] [Higiene, inspección y control de alimentos aplicada] - Moreno García, Benito. Higiene e inspección de carnes. Vol.I, Procedimientos recomendados e interpretación de la normativa legal / B. Moreno García . 2ª ed. Madrid : Díaz de Santos, 2006
- [BB] [Higiene, inspección y control de alimentos aplicada] - Moreno García, Benito. Higiene e inspección de carnes. Vol.II, Bases científicas y legales de los dictámenes de matadero / B. Moreno García . Madrid : Díaz de Santos, 2003
- [BB] [Higiene, inspección y control de alimentos aplicada] - Solomon, Sally E.. Egg and eggshell quality /Sally E. Solomon London : Manson Publishing, 1997
- [BB] [Higiene, inspección y control de alimentos aplicada] - Varnam, Alan H.. Leche y productos lácteos : tecnología, química y microbiología / Alan H. Varnam, Jane P. Sutherland ; traducido por Rosa Oria Almodí . [1ª ed.] Zaragoza : Acribia, D.L. 1995
- [BB] [Higiene, inspección y control de alimentos aplicada] - Huss, H. H.. El pescado fresco :su calidad y cambios de su calidad /por H.H. Huss. Reimpr. Roma : FAO, 1999 [Para acceder a texto completo mirar URL]

### Listado de URL

- Directrices para el desarrollo de un sistema APPCC en el sector de la pastelería en la Comunidad de Madrid [http://www.madrid.org/cs/Satellite?c=CM\_Publicaciones\_FA&cid=1354292334205&idConsejeria=1109266187266&idListO]
- Directrices para el diseño, implantación y mantenimiento de un sistema APPCC y unas prácticas correctas de higiene en el sector de comidas preparadas / Comunidad de Madrid. Consejería de Sanidad [http://www.madrid.org/cs/Satellite?blobcol=urldata&blobheader=application%2Fpdf&blobkey=id&blobtable=MungoBlobs&t]
- El autocontrol en los establecimientos alimentarios [http://www.gencat.cat/salut/acsa/html/es/dir1599/guia\_autocontrol\_es\_entera.pdf]
- El pescado fresco : su calidad y cambios de calidad [http://www.fao.org/docrep/v7180s/v7180s00.htm]
- Guías de prácticas correctas de higiene / Ayuntamiento de Madrid. [http://www.madrid.org/cs/Satellite?cid=1142398182108&pagename=PortalSalud%2FPage%2FPTSA\_pintarContenidoFina]
- Madrid. Ayuntamiento. Seguridad alimentaria [http://www.madrid.es/portales/munimadrid/es/Inicio/Ayuntamiento/Salud/Seguridad-alimentaria-y-control-de-aguas/Segurid]