

Animal Health I

Code: 102615
ECTS Credits: 6

Degree	Type	Year	Semester
2502445 Veterinary Medicine	OB	3	1

Contact

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: No

Teachers

Joaquín Castellà Espuny
Mariano Domingo Álvarez
David Ferrer Bermejo
Antonio José Ramis Salvá
Natàlia Majó Masferrer
Laila Darwich Soliva

Prerequisites

There are no prerequisites. However, it is advisable to review the contents of the subjects Microbiology, Microbiology and applications, Parasitology, Epidemiology and statistics and Pathology.

Objectives and Contextualisation

Sanitat Animal I (Animal Health I) is a subject of the first semester of the third year of the Degree in Veterinary Sciences. It is structured with an initial part of introductory content and veterinary pathology, and another that includes diseases of horses. This subject is fully coordinated with the other two Sanitat Animal II and Sanitat Animal III subjects, which include infectious and parasitic diseases of the rest of domestic and, possibly, wild species. The training objectives of this subject are:

- To know and identify the lesions that characterize the diseases of domestic and wild species
- To know and apply the veterinary pathology terminology correctly
- To be able to establish associations between the clinical signs, the lesions and the etiologic and pathogenic aspects of the diseases
- To be able to collect, handle and preserve animal samples for their diagnostic study
- To understand the usefulness of the pathological study as an instrument for evaluating the cause of death of animals

- To be able to assess the importance and opportunity of the different diagnostic methods in order to reach the final diagnosis of the disease.
- To understand the basic concepts and methodology used in the study of infectious and parasitic diseases of equidae
- To make differential diagnoses based on epidemiology, signs and observable lesions in equidae
- To know how to apply and interpret the most common laboratory techniques in the context of infectious and parasitic diseases of equidae.
- Prepare a diagnosis and a pattern of action before a case or outbreak of infectious-contagious disease in equidae

This subject includes activities carried out in English, identified in this teaching guide as TE (Teaching in English)

Competences

- Analyse, synthesise and resolve problems and make decisions.
- Apply scientific method to professional practice, including medicine
- Collect, preserve and issue all types of samples with the corresponding report.
- Demonstrate knowledge of English to communicate both orally and in writing in academic and professional contexts.
- Diagnose different individual and collective animal diseases, and know about prevention measures, with emphasis on zoonoses and notifiable disease.
- Diagnose the most common diseases using different general and instrumental techniques.

Learning Outcomes

1. Analyse, synthesise and resolve problems and make decisions.
2. Apply and interpret the commonest laboratory techniques to diagnose and prevent infectious and parasitical diseases in domestic animals and other useful species.
3. Apply scientific method to professional practice, including medicine
4. Define the basic concepts and methodology used in the study of animal health.
5. Demonstrate knowledge of English to communicate both orally and in writing in academic and professional contexts.
6. Distinguish the main parasitical diseases that affect domestic and useful animals.
7. Evaluate the importance and appropriateness of necropsy as a method for diagnosing disease.
8. Evaluate the importance of infectious and parasitical diseases in the field of animal health, public health and animal productions.
9. Identify the characteristic lesions of diseases in domestic and wild species.
10. Obtain appropriate samples from an animal or herd, and send to and process the samples in the laboratory.
11. Perform differential diagnoses on the basis of epidemiology, clinical signals and observable injuries in animals.
12. Produce action guidelines for a case or outbreak of an infectious-contagious disease.
13. Properly apply anatomopathological nomenclature and use suitable terminology in the field of infectious and contagious diseases.
14. Recognise the pathogeny of diseases in domestic animals, and establish suitable associations between lesions, etiology and clinical signals.

Content

BLOCK 1. BASIC CONTENT OF ANIMAL HEALTH + VETERINARY PATHOLOGY

This first block of the subject includes transversal contents, prior to the beginning of the specific contents of the infectious and parasitic diseases of the different animal species. At the beginning, contents related with host-pathogen interaction and basic notions on animal health diagnosis will be provided. Afterwards, the student will learn the main lesions that can be detected in the different organs of domestic and wild species. There will be special emphasis on the terminology used to designate the lesions, and the importance of the injuries in the establishment of the diagnosis as a step prior to the prevention of diseases and / or the establishment of the cause of death. This block includes a total of 41 hours, 37 h are master classes and 4 h are practical with condemned viscera in the slaughterhouse, with the following breakdown of contents:

- General introduction: interaction between the host, the pathogen and the environment (3 hours)
- Diagnosis in Animal Health (2 h)
- Pathology of the respiratory system (4 h)
- Pathology of the digestive system (4 h)
- Pathology of the genital system (2 h) (TE)
- Pathology of the nervous system (3 h)
- Pathology of the circulatory system (3 h)
- Pathology of the urinary system (3 h) (TE)
- Pathology of the liver (4 h)
- Pathology of the musculoskeletal system and joints (3 h)
- Pathology of the hematopoietic system (3 h) (TE)
- Diagnostic pathology (3 h)
- Practical with condemned viscera (4 h)

BLOCK 2. EQUINE INFECTIOUS AND PARASITIC DISEASES

It includes the study of the main viral, bacterial and parasitic diseases of equidae not subject to legal regulation but, due to their characteristics, are of economic and / or health importance. This implies the study of its aetiology, pathogenesis, type of clinical presentation, diagnosis, control and prevention. Parasitic origin also includes parasitic-host relationships, recognition and identification of parasites and their forms of propagation. This block includes a total of 12 hours of master classes with the following breakdown:

- Respiratory diseases (2 h)
- Digestive diseases (4 h)
- Systemic diseases (2 h)
- Reproductive diseases (2 h)
- Nervous diseases (1 h)
- Skin diseases (1 h)

Methodology

The centre of the learning process is the work of the student. The student learns working, being the mission of the teaching staff to help him / her in this task: (1) providing information or showing the sources where it

can be obtained, and (2) directing his / her steps so that the learning process can be done effectively. In line with these ideas, and in accordance with the objectives of the subject, the development of the course is based on the following activities:

1. Master classes:

The student acquires the own knowledge of the subject attending the master classes and complementing them with the personal study of the topics explained. The master classes are conceived as a fundamentally unidirectional method of transmitting knowledge from the teacher to the student. Eight hours of Block 1 will be taught in English (TE).

2. Tutorials:

The tutorials allow to establish a direct dialogue between student and teacher which emphasizes the orientation and motivation of the first, especially in relation to self-learning.

3. Practices with condemned viscera

In these practices carried out in the necropsy room of the Faculty, the student will learn to identify the main lesions present in the abattoirs. These practices will be used to review and apply the contents taught in Block 1 of the subject.

The teaching material used in the subject will be available in Moodle. This platform will also be used as a mechanism for the exchange of information and documents between the teaching staff and students.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Theoretical classes	49	1.96	1, 13, 3, 2, 4, 5, 6, 12, 11, 9, 10, 14, 7, 8
Type: Supervised			
Practices with alive animals and necropsies (PAV): condemned viscera	4	0.16	13, 9
Tutorial	4	0.16	1, 13, 3, 4, 6, 9, 14, 8
Type: Autonomous			
Autonomous study	90	3.6	1, 13, 3, 2, 4, 5, 6, 12, 11, 9, 10, 14, 7, 8

Assessment

Evaluation will be individual and will be performed based on the different programmed formative activities. It will be organized evaluating the different blocks of the subject. To pass the subject, a minimum required mark must be obtained within each block in the following framework:

1- BLOCK 1 (Basic contents and systematic pathology):

A first exam for block 1 will be performed by writing, implying 67.5 % of the total mark of the subject. This exam will have multiple choice (40.5%) and short (27%) questions. To pass this block, the student will have to get a mark equal or higher than 5; a lower mark of 5 is considered failed. To pass the whole block 1 it will be

compulsory to pass the condemned viscera exam (7.5% of the global mark of the subject) with a mark of 5 or higher.

In this block 1 exam, questions related with the issues taught in English will be given in such language. Bonus of English knowledge will be only applied in Block 1.

2- BLOCK 2 (Equidae diseases):

The mark of block 2 will be established on a written exam, implying 25% of the final subject mark. This exam will have multiple choice (18.75%) and short (6.25%) questions. To pass this block, the student will have to get a mark equal or higher than 5; a lower mark of 5 is considered failed.

The final mark of Sanitat Animal I will be established as a proportional mean between block 1 (75%) and block 2 (25%). The student must pass both blocks by separate, with a final mark for the whole subject equal or higher than 5.

The evaluation of issues taught in English will be performed in the same language (PPCT8) and the English qualification will be performed based on the percentages of the mark corresponding to the content evaluation. The bonus will be applied to the final mark of block 1 taking into account extent, orthography and grammar of the answers:

- 0%: insufficient in the written expression (short questions). The vocabulary is poor and not understandable, or difficult to understand.
- 5%: sufficient in the written expression (short questions). What is explained is understandable, but there are some significant grammar, orthographic and style mistakes, with a limited vocabulary.
- 10%: correct written expression (short questions).

The teacher will be who will establish the final bonus received by the student (between 0 and 10% over the final mark of the theoretical exam).

Each failed block (mark lower than 5) can be recovered by another exam at the end of the semester.

No passed blocks will be considered from one year to the following one.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Oral exam on slaughter condemned viscera	7.5%	1	0.04	1, 13, 3, 2, 4, 5, 6, 12, 11, 9, 10, 14, 7, 8
Written exam on basic contents of animal health and systematic pathology	67.5%	1	0.04	1, 3, 2, 12, 11, 10, 7
Written exam on equidae diseases	25%	1	0.04	1, 13, 3, 6, 11, 9, 10, 14, 8

Bibliography

Some of the books indicated are electronically accessible through the ARE service of the UAB (with NIU and password):

<https://www.uab.cat/web/que-ofrecemos/acceso-a-los-recursos-electronicos-desde-fuera-de-la-uab-1345747332035.html>

BLOCK 1. BASIC CONTENTS ON ANIMAL HEALTH AND SYSTEMATIC PATHOLOGY:

- Basic texts to use in relation the theoretical-practical content of the subject:

- ZACHARY J.F. (2017): *Pathologic Basis of Veterinary Disease*. Sixth edition, Elsevier.

<https://www.sciencedirect.com/book/9780323357753/pathologic-basis-of-veterinary-disease>

- MAXIE G. (2015). "*Jubb, Kennedy and Palmer's Pathology of Domestic Animals*" (3 vol.) Sixth Ed. Elsevier.

- Other useful texts:

- BOWMAN, D.D. (2004). *Georgis Parasitología para veterinarios* (8ª edición). Elsevier España

- GREENE (2012). *Infectious diseases of the dog and cat*. 4th Ed. Elsevier

- KASSAI, T. (1999). *Veterinary Helminthology*. Butterworth-Heinemann

- KAUFMANN, J. (1996). *Parasitic Infections of Domestic Animals. A Diagnostic Manual*. Birkhäuser

- KWON-CHUNG KJ, BENNETT JE (1992). *Medical Mycology*. Lea and Febiger.

- MACLACHLAN N.J., DUBOVI E.J. (2011). *Fenner's Veterinary Virology* (Fourth Edition) Elsevier.

<http://www.sciencedirect.com/science/book/9780123751584>

- OIE (2004). *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals* (mammals, birds and bees). Vol. 1 & 2. <http://www.oie.int/es/normas-internacionales/manual-terrestre/acceso-en-linea/>

- QUINN P.J., et al. (2011). *Veterinary Microbiology and Microbial Disease*. 2nd Ed. Wiley-Blackwell.

- RADOSTITS O.M. *et al.* (2007): *Veterinary medicine*. 10th Ed. Saunders

- TAYLOR, M.A., et al. (2015). *Veterinary Parasitology*. 4th Ed. Wiley-Blackwell

- ZAJAC, A.M., et al. (2012). *Veterinary Clinical Parasitology*. 8th ed. Wiley

- Web pages to check gross and histopathological lesions:

- Veterinary Pathology Image Database: <https://veterinariavirtual.uab.cat/archivopatologia/> Página web del Servicio de Diagnóstico de Patología Veterinaria de la UAB con numerosas imágenes de lesiones macroscópicas de diferentes órganos y tejidos de mamíferos y aves.

- Cornell Veterinary Medicine: <https://secure.vet.cornell.edu/nst/> Numerosas imágenes tanto macro como microscópicas

- http://www.fmv.ulisboa.pt/atlas/atlas_ing.htm Atlas de Anatomía Patológica de la Facultad de Veterinaria de la Universidade de Lisboa.

- <http://people.upei.ca/lopez/index.html>. Página web del Dr. Alfonso López (Canadá) con apuntes de sistema respiratorio, esquelético y cardiovascular.

BLOCK 2. DISEASES OF EQUIDAE:

- Basic texts to use in relation the theoretical-practical content of the subject:

- Sellon D.C., Long M.T. (2007). *Equine infectious diseases*. Saunders Elsevier.

<http://www.sciencedirect.com/science/book/9781416024064>

- Other useful texts:

- Barriga, O.O. (1997). *Veterinary Parasitology for Practitioners*. Burgess International Group, Inc.-

- Bowman, D.D. (2004). *Georgis Parasitología para veterinarios* (8ª edición). Elsevier España
- Hendrix, C.M. (1999). *Diagnóstico Parasitológico Veterinario*. Harcourt Brace
- Jacobs, D.E. (1986). *A colour atlas of equine parasites*. Baillière Tindall
- Kassai, T. (1999). *Veterinary Helminthology*. Butterworth-Heinemann
- Kaufmann, J. (1996). *Parasitic Infections of Domestic Animals. A Diagnostic Manual*. Birkhäuser
- Mehlhorn, H. (2001). *Encyclopedic Reference of Parasitology*. Springer Verlag
- Maxie, G. (2015). "Jubb, Kennedy and Palmer's *Pathology of Domestic Animals*" (3 vol.) Sixth Ed. Elsevier.
- Ministry of Agriculture, Fisheries and Food (1986). *Manual of Veterinary Parasitological Laboratory Techniques*. HMSO
- Radostits, O.M., Gay C.C., Blood D.C., Hinchcliff K.W. (1999). *Medicina Veterinaria*. 9a. ed. Interamericana Mc-Graw Hill. Madrid.
- Sloss, M.W., Kemp, R.L., Zajac, A.M. (1994). *Veterinary Clinical Parasitology*. Iowa State University Press
- Thienpont, D., Rochette, F., VanParijs, O.F.J. (1986). *Diagnóstico de las helmintiasis por medio del examen coprológico*. Janssen Research Foundation
- Taylor, M.A., Coop, R.L., Wall, R.L. (2009). *Veterinary Parasitology*. Blackwell Publishing