Universidad Europea

# 1. OVERVIEW

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|---|---|
| **Subject Area** | Veterinary Pathophysiology |
| **Degree** | Bachelor's degree in Veterinary Medicine |
| **School/Faculty** | Faculty of Biomedical and Health Sciences |
| **Year** | Second |
| **ECTS** | 12 ECTS |
| **Type** | Compulsory |
| **Language(s)** | Spanish |
| **Delivery Mode** | On Campus |
| **Semester** | Second semester |

# 2. INTRODUCTION

Veterinary Pathophysiology is a core subject area that combines the previously acquired knowledge of veterinary anatomy, histology and physiology into a single subject area. The aim is to explain the mechanisms of disease in the various body systems of domestic animals, companion animals and livestock, as well as their compensatory mechanisms, and the signs and symptoms of each.

# 3. SKILLS AND LEARNING OUTCOMES

**Basic skills (CB, by their acronym in Spanish):**

- ✓ CB1 – Understand the most common syndromes and compensatory mechanisms that occur in domestic and companion animals, as well their manifestations in different body systems, in order to correctly identify them.

**Cross-curricular skills (CT, by their acronym in Spanish):**

- ✓ CT2 – Independent learning. Employ appropriate strategies needed to search for, analyse, evaluate and manage information from different sources, and to learn and put into practice what has been learnt independently.

- ✓ CT3 – Teamwork. Collaborate actively with other people, departments and/or organisations to reach common goals, value and incorporate contributions from the rest of the group members and create a good working environment.

**Specific skills (CE, by their acronym in Spanish):**

- ✓ CE3. Knowledge and application of the principles and foundations of:
    - ✓ b) the immune response.
    - ✓ c) nosology.
    - ✓ d) the description and pathogenesis of general disorders of the structure and function of cells, tissues, organs and systems.
- ✓ CE6. Knowledge and application of:
    - ✓ b) diagnosis.

**General skills (CG, by their acronym in Spanish):**

- ✓ CG2 – Prevent, diagnose and treat animal diseases, particularly zoonoses, both individually and as part of a team.

**Learning outcomes (RA, by their acronym in Spanish):**

- ✓ RA1. Describe the components of the immune system and their role in the immune response, including both innate and adaptive immunity.
- ✓ RA2. Analyse the behaviour of the immune response in different scenarios, and the foundations of immunopathology.
- ✓ RA3. Study the modulation of the immune system, and other technological applications in immunology.
- ✓ RA 4. Describe the concepts of health, abnormality and disease. Be able to describe disease in all its aspects (causes, pathogenesis, clinical manifestations and clinical judgments).
- ✓ RA 5. Use the terminology of nosology (e.g. nosography) required to name, classify and organise diseases.
- ✓ RA 6. Define the general structural and functional disorders of cells, tissues, organs and systems, and their pathogenesis.

- ✓ RA 7. Define the general structural and functional disorders of the cardiovascular system, and their pathogenesis.
- ✓ RA 8. Define the general structural and functional disorders of the digestive and urogenital system, and their pathogenesis.
- ✓ RA 9. Define the general structural and functional disorders of the nervous system and musculoskeletal system, and their pathogenesis.
- ✓ RA 10. Define the general structural and functional disorders of lymphoid organs and sensory organs, and their pathogenesis.
- ✓ RA 11. Explain the immune mechanisms involved in each kind of structural and functional disorder.

The following table shows how the skills developed in the subject area relate to the intended learning outcomes:

| Skills (CE) | Learning outcomes (RA, by their acronym in Spanish) |
|---|---|
| CE3b | RA1, RA2, RA3, RA11 |
| CE3c | RA5 |
| CE3d | RA4, RA6, RA7, RA8, RA9, RA10 |
| CE6b | RA4, RA5 |

## 4. CONTENT

The subject area is divided into twelve units as follows:

- ✓ **UNIT 1.** Introduction to Pathophysiology.
- ✓ **UNIT 2.** Cardiovascular.
- ✓ **UNIT 3.** Pulmonology.
- ✓ **UNIT 4.** Nephrology and Urology.
- ✓ **UNIT 5.** The Endocrine System and Nutritional Disorders.
- ✓ **UNIT 6.** Haematology.
- ✓ **UNIT 7.** The Digestive System.

- ✓ **UNIT 8.** The Reproductive System.
- ✓ **UNIT 9.** The Nervous System.
- ✓ **UNIT 10.** Dermatology and The Sense Organs.
- ✓ **UNIT 11.** Immunology and Oncology.
- ✓ **UNIT 12.** Toxicology

## 5. TEACHING/LEARNING METHODS (MD, by their Spanish acronym)

The types of teaching/learning methods are as follows:

- MD1: Lecture / Web conference.
- MD2: Case studies.
- MD5: Collaborative learning.
- MD6: Learning through workshops/labs.
- MD7: Simulation environments.
- MD8: Work Placement: Case Studies

## 6. LEARNING ACTIVITIES

The types of learning activities, plus the amount of time spent on each activity, are as follows:

| **Type of learning activity (AF, by its acronym in Spanish)** | Number of total hours | Number of hours on campus |
|---|---|---|
| AF1. Master lectures | 45 | 45 |
| AF2. Group work (seminars, forums, debates and talks) | 8 | 2 |
| AF3. Case studies and problem-solving | 4 | 2 |
| AF5. Independent working | 139 | 0 |
| AF6. Workshops and/or labs and/or simulation | 64 | 64 |
| AF7. Student work placement | 0 | 0 |
| AF8. Drafting reports or concept maps | 10 | 0 |
| AF9. Research (scientific/case-based) | 16 | 0 |
| AF10. Tutorials | 12 | 6 |

| | | |
|---|---|---|
| AF11. Assessment tests | 2 | 2 |
| **TOTAL** | **300** | **120** |

## 7. ASSESSMENT

The assessment methods, plus their weighting in the final grade for the course, are as follows:

| Assessable task | Assessment criteria | Weighting (%) |
|---|---|---|
| Activity 1. Partial Theory Exam 1 (March/April) | • Answer the questions correctly | 30% |
| Activity 2. Partial Theory Exam 2 (May) | • Answer the questions correctly | 30% |
| Activity 3. Practical Skill and Ability Exam (May) | • Answer the questions correctly<br>• Demonstrate acquisition of practical skills | 20% |
| Activity 4. Reports and Documents | • Write a report on a simulated scenario, along with the corresponding medical records. | 5% |
| Activity 5. Reports and Documents | • Oral presentation and defence of the report. | 5% |
| Activity 6. Case/Problem | • Apply clinical reasoning to solve the assigned clinical case study. | 10% |

## 8. BIBLIOGRAPHY

The recommended bibliography is indicated below:


- ✓ Pathophysiology:
  - Medicina Interna Veterinaria: *Ettinger et al.* Elsevier.
  - Patología y Clínica Bovina: *Martínez Sigales et al.*
  - Veterinaria Equina. Un Manual Completo. *Pavord et al.*

- ✓ Diagnostic Imaging:
  - Small animal radiographic techniques and positioning. Ayers *et al.*
  - Small animal diagnostic ultrasound. Thomas G. Nyland *et al.* Elsevier.
  - Small animal diagnostic ultrasound. Nyland & Mattoon. Saunders.

- Textbook of veterinary diagnostic radiology. Thrall. Saunders.
- Diagnostic imaging of exotic pets: birds - small mammals – reptiles. Krautwald-Junghanns*et al.*