



UNIVERSIDADE DE LISBOA
Faculdade de Medicina Veterinária

Immunology

Curricular Year: 2nd

Duration: 2nd Semester

Credits: 5 ECTS

Teachers: Luís Tavares (CCC and R); Eva Cunha; Frederico Aires da Silva; Manuela Oliveira; Ricardo Bexiga; Solange Gil.

Contact Hours: 60H Total.

22H Lectures; 16H Theoretical-practical; 22H Practical and laboratory teaching.

Learning objectives:

Students must acquire the basic and up-to-date concepts of immunology, in order to understand the importance of the various functions of the immune system as fundamental components of health balance maintenance. Students must recognize the relevance changes to such balance in the etiology of several immunopathological processes; understand the strategies of immunomodulation, as in vaccination, a fundamental tool to animal health. Students must develop competencies of manipulating laboratory instruments and immunological techniques applied to veterinary diagnosis, understanding their meaning and relevance. Apply the "problem-based learning" technique to the study of real situations.

Program contents:

Lecture Topics Characterization of the Immune System (IS). Innate and Adaptive Immunity. Antigenic presentation. "T-Help", TH1, TH2 and TH17. Cytokines and Lymphokines. Humoral immunity. Structure, Classes and Functions of Antibodies. The Genetics of SI. Origin of Diversity. Local immunity. Common Mucosal System. Maternal and Perinatal Immunity. Transfer of immunity. Cellular Immunity. Cytotoxicity. Immunity against Bacteria, Fungi, Viruses, Parasites and Tumors. Regulation and Tolerance. Immunopathology - SI Diseases. Hypersensitivity, Immunodeficiency and Autoimmunity. General Principles of Vaccine Production and Use.

Theoretical-Practical Classes: Immunology in Veterinary Medicine. Presentation and discussion of topics by students.

Practical Classes: Diagnosis in Medical Immunology: Serological reactions: IHA, immunoprecipitation, AGID, seroagglutination, Immunofluorescence and immunocytochemistry. Ac Monoclonal and Phage Display. Immunoblotting. ELISA. T. tuberculin. Blood groups

Bibliography:

Tizard, I.A., 2024. In: Veterinary Immunology, 11th Edition. Elsevier Inc.,

Tizard, I.A., 2019. In: Vaccines for Veterinarians. 1th ed, Elsevier Inc., eBook ISBN: 9780323682992. Published nov 19, 2019.

Day, M.J., 2014. In: Veterinary Immunology: Principles and Practice 2th ed, Elsevier Inc., eBook ISBN: 9781482224627. Published jun 23, 2014.

Assessment:



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The assessment of the curricular unit includes three distinct components: theoretical, laboratory practical, and theoretical-practical.

The assessment of the theoretical and laboratory practical components will be carried out through a single individual written exam (EI), consisting of two separate parts: Theoretical component: short-answer questions (short answer, multiple choice, true/false, and fill-in-the-blank), focusing on the content covered in the theoretical classes (40% of the final grade); Laboratory practical component: short-answer questions focusing on the content addressed in the laboratory classes and the discussion of clinical cases (30% of the final grade).

These two parts will be assessed independently, and both require a minimum 9.5 passing grade. The theoretical-practical component will be assessed using the Guided Feedback/Assessment (FOA) method. Each group of students (around 5 members) will deliver an oral presentation on an assigned topic, followed by an individual discussion with the instructors. The final grade will result from the formative group assessment (based on the feedback given after the presentation) and the individual qualitative assessment of the discussion with the instructors (30% of the final grade).

The final grade for the curricular unit will be calculated using the following formula: Final grade = $(EI \times 0.7) + (FOA \times 0.3)$

To pass the course, students must obtain ≥ 9.5 out of 20 in each of the three assessment components: theoretical, laboratory practical, and theoretical-practical