Universidad Zaragoza

Academic Year/course: 2021/22

28425 - General Pathology and Propaedeutics I

Syllabus Information

Academic Year: 2021/22
Subject: 28425 - General Pathology and Propaedeutics I
Faculty / School: 105 - Facultad de Veterinaria
Degree: 451 - Degree in Veterinary Science
ECTS: 6.0
Year: 3
Semester: First semester
Subject Type: Compulsory
Module:

1. General information

1.1. Aims of the course

The general goal of this course will be the learning of Nosology, the functional alterations of the organs and systems of the animal organism, the exploration of domestic animals and their clinical assessment, with a view to their subsequent application to the study of animal medicine and production.

The general aims of this course are to:

- Achieve this general objective, the specific learning objectives of the subject of General Pathology and Propedeutics I will focus on achieving that the student is capable of:
- Understand the concept of disease, its characteristics and basic laws.
- Know how to properly use the terminology of General and Propaedeutic Pathology.
- Understand and describing the mechanisms that lead to the alteration of the functioning of animal systems, apparatuses and organs, with the causes that produce them and the biopathological alterations that they generate, especially in the species of greatest interest in veterinary medicine.
- Know and evaluate the mechanisms of adaptation and defense of the organism against the disease and the consequences of the failure of these mechanisms.
- Know and evaluate in a practical way the analytical parameters as a diagnostic-prognostic method.
- Know and be able to perform the techniques of collecting and preserving samples for the most frequent diagnostic tests.
- Manage the basic scientific instrumentation, as well as to acquire the necessary skills for the accomplishment of the main clinical diagnostic tests.
- Know and elaborating the anamnesis and to realize and to interpret a clinical history.
- Know and applying the handling and containment maneuvers of the main domestic animals according to their species and state.
- Know and applying the appropriate exploration maneuvers for each animal species and interpret the results of that exploration.
- Manage the fundamental bibliographic sources for this subject.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDG) of the United Nations 2030 Agenda (https://www.un.org/sustainabledevelopment/es/), in such a way that the acquisition of the results learning of the subject provides training and competence to contribute to some extent to its achievement: Objective 3: Good health and well-being; Objective 4: Quality education; Goal 5: Gender equality; Goal 8: Decent work and economic growth; Goal 10: Reduced inequalities; Goal 12: Responsible consumption and production; Goal 13: Climate action; Goal 15: Life on land; Goal 16: Peace, justice and strong institutions.

1.2. Context and importance of this course in the degree

The subject of General Pathology and Propaedeutics I of the first four-month period of the third year, complementary to General Pathology and Propaedeutics II, requires the training provided by basic subjects such as Embryology and Anatomy I and II, Biology and Biochemistry, Cytology and Histology or Physiology, is closely linked to subjects of the same course such as General Pathology, Diagnosis by Image, Pharmacology and Pharmacotherapy or Reproduction and Obstetrics, and

should serve for students to acquire the skills necessary to address the rest of the subjects of the degree, especially those of a more clinical nature such as integrations in pets, equids and ruminants

1.3. Recommendations to take this course

It is convenient that students have taken all the subjects of the previous courses and to be enrolled in the failed subjects.

In order to take this course it is particularly necessary that the student has a solid knowledge of anatomy, histology and animal physiology, which allows him to assimilate the changes that pathology induces in the organism.

Special importance is given to the practical part of the subject, so it is recommended participation and involvement in the practical activities of this subject.

2. Learning goals

2.1. Competences

On successful completion of this course, students will be able to:

1. Interpret the pathological processes that act on the animal organism.
2. Apply theoretical knowledge to the analysis of practical situations, problem solving and decision making in real contexts.
3. Handle properly domestic animals during exploration.
4. Critically reason and develop capacities for analysis, synthesis and evaluation. 5: Communicate correctly and effectively, using appropriate scientific terminology. 6: Organize, plan your work and manage information.
5. Be integrated in a work team to achieve common objectives, distributing and sharing responsibilities.

2.2. Learning goals

If students complete the course successfully, they should be able to

1. Know and understand the fundamentals of nosology as an abstract study of disease.
2. Correct use the medical terminology specific to this subject.
3. Know and understand the pathogenic mechanisms that lead to the functional failure of an organ, system or apparatus, and the disturbances that occur in the organism and that give rise to the symptoms and syndromes clinical diseases resulting from these alterations.
4. Take biological samples and choosing the basic and complementary laboratory techniques that allow their evaluation, as well as interpreting the result of the same in order to detect the corresponding biopathological alterations.
5. Know and apply correctly the methods and procedures of clinical examination of the different organs and appliances in domestic animals and is able to interpret the results derived from such examination.
6. Prepare and/or interpret a clinical history in the main species of domestic animals

2.3. Importance of learning goals

Knowledge of physiopathology and the practical application of clinical examination on the animal are necessary both for the maintenance of health and for the diagnosis, prognosis and treatment of diseases affecting animals.

This knowledge constitutes the fundamental base on which the clinical training of the veterinarian is based, being more useful and necessary to the extent that this learning is more oriented towards a practical clinical activity.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The student must demonstrate that he or she has achieved the intended learning outcomes through the following assessment activities

Assessment of learning outcomes

Exploration practices (1 to 4) will evaluate skills in handling and exploring animals of different species. For this purpose, a practical test will be carried out at the end of each session.

Each of the practical exercises will be assessed with a maximum of 6 points. The maximum possible score will be 24 points. In order to pass this group of practices, a score equal to or greater than 15 points must be obtained in this section.

Remaining practices (5 to 8) will evaluate the student's attitude and participation in the activity, as well as the results of the report that must be completed and delivered at the end of each of the practical sessions.

Each of the practical sessions will be evaluated with a maximum of 3 points. The maximum possible score will be 12 points. In order to overcome this group of practices, a score equal to or greater than 7 points must be obtained in this section.

Students who do not exceed the minimum score required in blocks 1.a and 1.b during the development of the practices, either for lack of attendance or for obtaining very low marks in the examination tests or in the laboratory reports, will be summoned to a practical examination of the corresponding block/s in each of the official summons.

At the **end of the school year**, a written test will be taken consisting of 32 short answer questions corresponding to the content of the theoretical classes and seminars given. Each question will have a maximum score of 2 points. In order to pass the written test, a score of 35 points or more must be obtained.

In order to pass the course it is required to pass separately each of the 3 previous sections and the grades obtained in sections 1.a and 1.b will only be added with the grade obtained in the written test, when the latter has reached a minimum of 35 points.

If the student has passed the written test and has not passed activities 1a and/or 1b, the grade obtained in the first one will be maintained until the next call within the same academic year. In the opposite case, once the activities 1a and/or 1b of practices have been passed, the qualification obtained will be maintained for future sessions.

Global assessment test:

Those students who are not part of the face-to-face programme and participate in all the proposed activities must undergo a global evaluation test, which includes three sections:

Written test, consisting of 32 short questions corresponding to the content of the theoretical classes and seminars given. Each question will have a maximum score of 2 points. In order to pass the written test, a score of 35 points or more must be obtained.

Practical test, with two parts:

- Exploration: One or more exploration exercises will be carried out on one or more animal species. The screening test shall have a maximum score of 24 points. In order to pass this test, a score of 15 points or more must be obtained.
- Laboratory: carrying out one or more practical exercises related to the practices developed in the laboratory. The evaluation of laboratory practice shall have a maximum score of 12 points and a score equal to or greater than 7 points shall be obtained to pass this part.

To pass the subject requires passing separately each of the previous sections and the grades obtained in the two parts of the practical test (examination and laboratory) will only be added with the note of the written examination in cases where the written test has been passed with a minimum of 35 points.

If the student has passed the written test and not the practical examination and/or laboratory test, the grade obtained in the first one will be maintained until the next session within the same academic year. In the opposite case, once passed the practical test of exploration and the practical exercise of laboratory, the qualification obtained will be maintained for the future calls.

In order to pass this subject, a total score of 57 points or more out of a possible 100 points must be achieved and each of the 3 sections evaluated (written test, exploration practice, laboratory practice) must pass independently.

Marking system:

According to the national regulation Law 1025/2003, 5th of September which lays down the European system of credits and marking system for the university degree.

0-4,9: FAIL.

5,0-6,9: PASS

7,0-8,9: GOOD (NT).

9,0-10: EXCELLENT (SB).

As the article 158 of the Statutes of the University of Zaragoza lays down, provisional grades will be displayed at least for 7 days and students will be able to review them on the date, time and place provided for that purpose.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

Theoretical classes, practical classes and case study sessions and case studies

4.2. Learning tasks

Theoretical classes: 30 hours of theoretical classes will be given, including a first class of introduction and presentation of the subject. Throughout the course, the teacher makes available to the students the scripts, materials and/or bibliographical references that he considers appropriate in each case. It is interesting that in the development of these classes students have in mind the knowledge acquired in other subjects of the degree, which will allow them a better understanding of the subject and facilitate the assimilation of new content explained in each subject, while allowing the student to develop their capacity for analysis, synthesis and relationship of concepts.

Practical classes: Prior to each of the practical sessions, students will have the necessary scripts and materials, as well as an explanation of what will be done in each of them. This information must be consulted and analyzed by the student, so that when he reaches the corresponding practice, he makes the most of the time available to carry out the practical activity. The

session will begin with an explanation of the work to be done and then the students will carry out the practice with the available animals or in the laboratory, always under the supervision of the teacher.

Case study sessions and case studies: These are sessions in which the students should be the main ones and actively intervene. Prior to each session, all the material to be worked on will be made available to the students so that they can analyse it and answer the questions posed in each case. The seminar session will be a sharing and discussion guided by the teacher, in which the proposals put forward by the group will be evaluated and any doubts that may arise throughout the session will be resolved.

4.3. Syllabus

PROGRAM OF THEORETICAL CLASSES

This program consists of 30 hours of participatory master class, distributed in 30 sessions of 1 hour.

MODULE I: General and physiopathology of the skin

Topic 1 -- Introduction and presentation of the subject.

Topic 2 - Nosology: concepts of Pathology and Clinical. Description of the disease.

Topic 3 - Exploration methods and clinical history.

Topic 4 - Physiopathology of thermoregulation: hypothermia, hyperthermia and febrile syndrome.

Topic 5 - Exploration of the layer, skin and lymphatic system I.

Topic 6 - Exploration of the layer, skin and lymphatic system II.

Topic 7 -- Physiopathology of the skin: itching, alterations of the hair follicle and annexes.

MODULE II: Physiopathology of the blood and circulatory system

Theme 8 - Physiopathology of the erythroid series. Erythrocytosis: definition and classification.

Theme 9 - Physiopathology of the erythroid series. Anemias: definition and classification. Regenerative anemias.

Topic 10 - Physiopathology of the erythroid series. Non-regenerative anemias.

Topic 11 -- Physiopathology of the leukocyte series. Definition and classification of leukocytosis and leukopenia.

Topic 12 - Physiopathology of haemostasis. Primary haemostasis alterations: vascular and platelet alterations.

Topic 13 - Physiopathology of haemostasis. Alterations in secondary haemostasis: alterations in blood coagulation. Mixed disorders: disseminated intravascular coagulation syndrome.

Topic 14 - Congestive heart failure. Clinical manifestations of congestive heart failure. Diseases that lead to congestive heart failure.

Topic 15 - Cardiac arrhythmias I.

Topic 16 - Cardiac arrhythmias II.

Topic 17 - Circulatory shock.

MODULE III: Physiopathology of the respiratory system.

Topic 18 - Defensive mechanisms of the respiratory system and exploration of the extrathoracic pathways, sinuses and guttural bags. Coughing and sneezing.

Topic 19 - Disturbances in respiratory mechanics. Alterations in the frequency, depth and rhythm of respiratory movements. Dyspnea.

Topic 20 - Respiratory failure syndrome and its consequences I.

Topic 21 - Respiratory failure syndrome and its consequences II.

Topic 22 - Physiopathology of pulmonary circulation. Pulmonary hypertension and pulmonary edema.

Topic 23 - Pulmonary syndromes: Emphysema, atelectasis and pulmonary fibrosis.

Topic 24 - Physiopathology of the pleura and mediastinum. Respiratory chest exploration.

MODULE IV: Physiopathology of metabolism and nutrition

Topic 25 - Physiopathology and biopathology of nutrition: energetic imbalances. Obesity and slimming syndromes.

Topic 26 - Physiopathology of hydric equilibrium: Disorders of water balance: global dehydration and global hyperhydration.

Topic 27 - Physiopathology of electrolytic equilibrium: alterations in the metabolism of sodium, chlorine and potassium.

Topic 28 - Physiopathology of acid-base balance: respiratory acidosis and alkalosis. Metabolic acidosis and alkalosis.

Topic 29 - Physiopathology and biopathology of nutrition: Immediate principles. Protein, carbohydrate and lipic metabolism disorders.

Topic 30 - Physiopathology and biopathology of nutrition: minerals. Pathological variations of calcium, phosphorus and magnesium. Osteodystrophies.

PROGRAM OF PRACTICAL CLASSES

It consists of 30 hours of practical activities, distributed in 9 sessions of 1-3 hours of work with animals and/or laboratory, and 4 sessions of 1 to 2 hours of clinical cases or practical assumptions.

1. Exploration in the dog (3 h): Behaviour and handling. Taking constants, mucous membranes, lymphatics... Respiratory system.
2. Exploration in equids (3 h): Behaviour and handling. Taking constants, mucous membranes, lymphatics... Respiratory system.
3. Exploration in sheep (3 h): Behaviour and handling. Taking of constants, lymphatics. Respiratory system.
4. Cattle exploration (3 h): Behavior and management. Taking of constants, mucous membranes, lymphatics... Respiratory system.
5. Application of substances in domestic animals (2.5 h).
6. The skin: taking samples and basic diagnostic tests (2.5 h).
7. Haematology: Sampling. Basic laboratory analysis (3 h).
8. Cardiac exploration: electrocardiography and blood pressure. (3 h)
9. Low stress handling in cats and dogs (1 h).

1. - Clinical cases and practical cases: Anamnesis (1.5 h).
2. - Clinical cases and practical cases: Hematology (1.5 h).
3. - Evaluation of the corporal condition in the dog and cat and its influence on the quality of life (1.5 h).
4. - Management and exploration in pigs (1.5 h).

The detailed programme of theoretical and practical activities is complemented by:

- Study for the consolidation of knowledge and preparation of written and practical tests and clinical case resolution
- Tutoring.
- Carrying out of the above tests

4.4. Course planning and calendar

The dates and key milestones of the course are described in detail, along with those of the other subjects of the Veterinary Degree, on the website of the Faculty of Veterinary Medicine (link: http://veterinaria.unizar.es/gradoveterinaria/). This link will be updated at the beginning of each academic year.

4.5. Bibliography and recommended resources

http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=28425