

28432 - Aquatic animals and exotic pets Integrated Course

Syllabus Information

Academic year: 2023/24

Subject: 28432 - Aquatic animals and exotic pets Integrated Course

Faculty / School: 105 - Facultad de Veterinaria

Degree: 451 - Degree in Veterinary Science

ECTS: 6.0

Year: 4

Semester: Annual

Subject type: Compulsory

Module:

1. General information

The teaching of this subject and the expected results should ensure that the Veterinary Graduate is able, on the one hand, to respond to the needs and requirements of the aquaculture sector both in its productive and health management, expanding its scope of action on wild fish populations; and on the other hand, the knowledge of the main diseases affecting exotic animals (birds, reptiles and small mammals), knowing how to apply an appropriate diagnostic, therapeutic and preventive protocol.

These approaches are aligned with the Sustainable Development Goals of the United Nations 2030 agenda number 1, 2, 3, 8, 9, 12 and 13, so that the acquisition of the learning results of this subject should provide the training and competence to contribute to some extent to their achievement.

2. Learning results

2.1. The student, in order to pass this subject, must demonstrate in the field of Aquaculture that:

- Knows the general and basic terminology of aquaculture, as well as its history, evolution and current trends at local and global level.
- Knows the main production systems and the regulations governing this activity.
- Knows the facilities and techniques for feeding, reproduction and improvement, applicable to aquaculture.
- Learns about the impact this activity has on the environment and its legislation.

2.2. The student, in order to pass this subject, must demonstrate in the field of Ichthyopathology that:

- Knows and understands the main pathological processes affecting aquatic animals.
- Is able to take samples according to the nature and characteristics of the disease establishing the most appropriate diagnostic tests.
- Is able to prescribe and apply the most appropriate treatments in each case.
- Is capable of designing and applying control and prevention programs according to the nature and pathological process and the characteristics of the farm.
- Knows and applies current legislation regulating these species.

2.3. The student, in order to pass this subject, must demonstrate in the field of Clinical and Health of Exotic Animals that:

- Knows what an exotic animal is and knows the legislation related to them.
- Knows the appropriate habitat and maintenance conditions, as well as the nutrition and reproduction of the species of greatest veterinary interest.
- Knows and understands the most frequent and important diseases affecting these animals.
- Is able to adequately approach the diagnosis of the pathologies that affect them, take samples and select the most appropriate diagnostic techniques in each case and interpret the results.
- Knows and adequately applies the most appropriate pharmacological, non-pharmacological and surgical treatment for each pathology.
- Knows how to implement preventive measures to avoid the appearance of the most important diseases of the most frequent exotic animals.

3. Syllabus

3.1. Exotic Animal Health and Clinical Practice

3.1.1. Master Classes

I. Birds (Psittacidae and Passerines)

Topic 1: Anatomical and pathophysiological basis. Basic techniques in the bird clinic.

Topic 2: Maintenance and nutritional pathologies.

Topic 3: Digestive and adnexal organ pathologies.

Topic 4: Respiratory and systemic pathologies.

Topic 5: Dermatological pathologies.

Topic 6: Reproductive and genito-urinary pathologies.

Topic 7: Emergency, intensive care and surgery.

II. Reptiles (Chelonians, Lacertilians and Ophidians)

Topic 8: Anatomical and pathophysiological basis. Basic techniques in the reptile clinic.

Topic 9: Maintenance and nutritional pathologies.

Topic 10: Digestive and adnexal organ pathologies.

Topic 11: Respiratory and systemic pathologies.

Topic 12: Dermatological pathologies.

Topic 13: Reproductive and genito-urinary pathologies.

Topic 14: Emergency, intensive care and surgery.

III. Small mammals (Rabbits, Rodents, Guinea pig, Chinchilla, Hamster, Ferrets)

Topic 15: Maintenance and nutritional pathologies.

Topic 16: Digestive and respiratory pathologies.

Topic 17: Reproductive, genito-urinary, dermatological and systemic pathologies.

Topic 18: Emergency, intensive care and surgery.

Topic 19: CITES and legislation related to the transport and possession of NCAs.

Topic 20: Zoonoses transmitted by NCAs (epidemiology and international legislation).

3.1.2. Practical sessions based on case studies (IAAEx-2) and exploratory techniques and sampling in birds and reptiles (IAAEx-1).

3.2. Aquaculture

3.2.1. Master Classes

Topic 1: Basic aspects of fish, crustacean and mollusk aquaculture.

Topic 2: Fish reproduction.

Topic 3: Biotechnology applied to aquaculture reproduction.

Topic 4: Feeding of fish, crustaceans and mollusks.

Topic 5: Marine and continental aquaculture facilities.

Topic 6: Water quality and effects of aquaculture on the environment.

Item 7: Economic management of aquaculture.

Seminar 1: Introduction to aquaculture. General concepts. Historical evolution, current situation and trends. The aquaculture sector, the value chain and the role of veterinarians.

3.2.2. Laboratory-type session (IAAEx-3), based on the practical study of sexual differentiation techniques.

3.3. Ichthyopathology

3.3.1. Master Classes

I. Basic Concepts

Topic 1: Environmental factors influencing the disease.

Topic 2: Anatomical and pathophysiological basis in ichthyopathology.

Topic 3: Fish immunology.

II. Abiotic disease factors in fish

Topic 4: Diseases due to alterations in water quality.

Topic 5: Nutritional diseases and developmental disorders (malformations).

III. Biotic factors of disease in fish

Topic 6: Ectoprotezoosis in fish.

Item 7: Ectohelminthiasis in fish.

Topic 8: Arthropodosis, hirudinosis and glochidiosis.

Topic 9: Endoparasitosis in fish (flagellates and coccidia).

Topic 10: Microsporidiosis.

Topic 11: Myxosporidiosis.

Topic 12: Internal helminthiasis in fish.

Topic 13: Fish-borne zoonotic helminthiasis.

Topic 14: Notifiable diseases. Viral hemorrhagic septicemia and infectious hematopoietic necrosis.

Topic 15: Infectious salmon anemia, infectious pancreatic necrosis and salmonid alphavirus.

Topic 16: Koi herpesvirus and spring viraemia of carp.

Topic 17: Lymphocystis disease and nodavirus.

Item 18: Classic salmonid furunculosis. Other aeromoniasis.

Topic 19: Streptococcosis of fish and bacterial kidney disease (BKD).

Item 20: Flavobacteriosis and red mouth disease.

Item 21: Vibriosis and photobacteriosis.

Topic 22: Saprolegniosis and ichthyophthiriasis.

Topic 23: Biosafety in aquaculture

IV. Biotic disease factors affecting mollusks

Topic 24: Protozoosis of mollusks I: Bonamiosis and mikrocystosis.

Topic 25: Protozoosis of mollusks II: Marteiliellosis and perkinsiosis

3.3.2. Practical sessions based on problem solving and case studies (IAAEx-4), and on the study and evaluation of ichthyopathological techniques (IAAEx-5, IAAEx-7 and IAAEx-8).

4. Academic activities

- Participative master classes: 9.5 h of Aquaculture; 25.5 h of Ichthyopathology and 20 h of Clinical and Health of Exotic Animals.
- Resolution and discussion of problems and clinical cases related to the subjects of Ichthyopathology (practical IAAEx-4 of 2 h), and Exotic Animals (practical IAAEx-2, of 2 h).
- Practices in teaching laboratories related to the subjects of Exotic Animals (IAAEx-1, of 3 h), Aquaculture (IAAEx-3, of 3 h) and Ichthyopathology (IAAEx-6, of 4 h; IAAEx-5, IAAEx-7 and 8 of 2 h, respectively). Note that practice 6 and 8 are sequential activities that require the execution of IAAEx-6 in order to be able to perform IAAEx-8.

5. Assessment system

The student must demonstrate achievement of the intended learning results through the following assessment activities:

- Written test: The theoretical knowledge acquired will be evaluated by means of a final written test. This test will constitute 70% of the final grade and will include multiple-choice and short-answer questions distributed in three independent blocks, one for each subject, and weighted according to the number of credits.

However, those students who so wish may take a partial written test of an eliminatory nature of the theoretical part of the subjects taught in the first four-month period and with the same characteristics described for the final exam.

- Practical sessions: Practical knowledge will be evaluated by means of: compulsory attendance control, interest, attitude and delivery of practice reports and teaching assignments, and will constitute the remaining 30% of the final grade. Those students who have not completed any of these practices, or who have not achieved the minimum grade to pass them, must take a theoretical-practical exam of the contents taught in these laboratory-type practices. This exam will take place on the same dates as the final written test.

The theoretical grade and the practical grade of each of the subjects will be valued on a total of ten points, applying the weighting factors 0.7 and 0.3, respectively. In order to pass the subject, it will be required that, in each of the four-month periods, the grade of both parts (theoretical and practical) is higher than 50% and the final grade of the subject is also higher than 50%. Thus, for those students who pass the minimum grade required in the theory and practice of each term, the final grade of the subject will be calculated according to the following formula:

$$FG = 0.17 (0.7 NTA + 0.3 NPA) + 0.5 (0.7 NTI + 0.3 NPI) + 0.33 (0.7 NTE + 0.3 NPE)$$

Where: FG= Final grade of the course; NTA= Aquaculture theory grade; NPA= Aquaculture practical grade; NTI= Ichthyopathology theory grade; NPI= Ichthyopathology practices grade; NTE= Exotics theory grade; NPE= Exotics practices grade.

In those cases in which the FG is higher than a five, having failed any theoretical part of the subjects taught, the subject will be considered failed. The final numerical grade will be determined from the grade obtained in the theoretical part without adding the grade obtained in the practical part, i.e. NPA=0, NPI=0 and NPE=0.

