

28424 - Toxicology

Syllabus Information

Academic year: 2024/25

Subject: 28424 - Toxicology

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

The general objective of the subject is to introduce the student to the knowledge, assessment and treatment of adverse phenomena produced by chemical substances and some physical agents on living beings and, if necessary, to apply veterinary knowledge to the resolution of legal and regulated problems.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (<https://www.un.org/sustainabledevelopment/es/>), so that the acquisition of the subject learning results provides training and competence to contribute to some extent to their achievement."

Goal 3: Health and Wellness.

Goal 6: Clean Water and Sanitation.

Goal 13: Climate Action

Goal 14: Underwater Life

Goal 15: Life of Terrestrial Ecosystems.

2. Learning results

The student, in order to pass this subject, must demonstrate that:

1. Knows the aetiology of the intoxications that most frequently affect domestic animals and their predisposing factors.
2. Knows the mechanisms of exposure, incorporation, transformation and excretion of toxic substances.
3. Understands the mechanisms of action, symptoms and lesions of toxic substances of interest in veterinary medicine.
4. Knows the diagnostic procedure and treatment of intoxications, as well as the measures to be implemented to prevent them.
5. Understands the practical activities proposed.
6. Integrates the concepts of the subject in the resolution of practical cases.
7. Is capable of carrying out and presenting correctly a written work that relates the different aspects covered in the subject.

3. Syllabus

I. General Toxicology

1. Presentation-Introduction
2. Experimental Toxicology
3. Toxicokinetics
4. Biotransformation
5. Toxicodynamics
6. Mutagenesis-Carcinogenesis-Teratogenesis
7. Endocrine disruptors

8. Analytical Toxicology
 9. Risk Assessment
 10. General Treatment
- II. Environmental and Industrial Toxicology
1. Persistent pollutants
 2. Corrosive substances
 3. Ethylene glycol and methanol
 4. Oil and oil products
- III. Pesticide Toxicology
1. Insecticides
 2. Acaricides
 3. Rodenticides
 4. Molluscicides
 5. Herbicides and fungicides
- IV. Food Toxicology:
1. Urea-Salt/water deficiency
 2. Theobromine
 3. Mycotoxins
- V. Plant Toxicology:
1. Hepatotoxic
 2. Lectins and leguminisms
 3. Cyanogenetics and methemoglobinizing agents
 4. Oxalates
- VI. Drugs and Psychoactive Substances
1. CNS depressants
 2. CNS Stimulants
- VII. Metal Toxicology
1. Copper-Molybdenum
 2. Lead
 3. Mercury
 4. Arsenic
 5. Cadmium
- VII. Toxinology
1. Bacterial toxins
 2. Zootoxins

4. Academic activities

- 1 - Participative theoretical classes. The teacher will present theoretical contents with the active participation of the students
- 2 - Laboratory practices. Execution of an experimental protocol in the Toxicology Laboratory using a detailed script, instruments, materials as well as the necessary biosafety measures.
- 3- Case studies in the classroom. Relevant practical cases in the field of Veterinary Toxicology, to expand theoretical knowledge.

Likewise, the student's autonomous and continuous work is encouraged, as well as the integration of the different topics covered in the subject.

5. Assessment system

In order to pass the subject it will be necessary to pass 50% of the maximum grade of a global test with the following structure:

1 - Overall written evaluation of theoretical classes to assess learning results 1 to 4. This test will consist of conceptual multiple-choice questions (60-90%) and open-ended short answer questions (10-40%). It will account for 90% of the student's final grade in the subject

2- Overall written evaluation of practical activities to assess learning results 5 and 6. It will account for 10% of the final grade.

Assessment criteria and levels of demand

The evaluation will be 100% objective, according to the grades obtained between the written tests corresponding to the theoretical and practical teaching. In general, true-false questions add and subtract points when correct and wrong, respectively, and in the same amount. Short answer questions and problems do not subtract points from the total.

Grading system:

As a consequence of the entry into force of RD. 1125/2003 of September 5, 2003, which establishes the European credit system and the grading system for university degrees, the student's grade will be twofold; numerical and qualitative.

0-4,9: Fail (SS).

5,0-6,9: Pass (AP).

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

9,0-10: Outstanding (SB).

6. Sustainable Development Goals

3 - Good Health & Well-Being

6 - Clean Water and Sanitation

15 - Life on Land