

28400 - Cytology and histology

Syllabus Information

Academic year: 2023/24

Subject: 28400 - Cytology and histology

Faculty / School: 105 - Facultad de Veterinaria

Degree: 451 - Degree in Veterinary Science

ECTS: 8.0

Year: 1

Semester: Annual

Subject type: Basic Education

Module:

1. General information

The objective of this subject is to study the structure and ultrastructure of cells and tissues and their organization to form the different organs in the animal organism.

The subject is part of the Basic Training Module and is an extension of the training process started with Anatomy (macroscopic study) by developing the knowledge of the animal organism at a microscopic level.

It provides students with the necessary knowledge to approach the study of other subjects of the Degree in Veterinary Medicine, such as Physiology, Pathological Anatomy and the different Pathologies

The objectives of the Cytology and Histology subject are aligned with several specific targets of the Sustainable Development Goals (SDGs) numbers 3, 4, 5 and 12

2. Learning results

Upon completion of the subject the student will be able to:

1. Correctly use the basic terminology of Cytology, Histology and Microscopic Anatomy.
2. Identify the structural and ultrastructural features of cells.
3. Know the functions of organelles and other cellular structures, relating them to each other and understanding their necessary coordination for the cell to perform its tasks.
4. Describe the components and characteristics of different tissues.
5. Know the microscopic arrangement and organization of tissues to form the organs, apparatus and systems of the animals studied by the veterinary professional.
6. Know the meaning and fundamentals of basic histological specimen preparation techniques.
7. Recognize and differentiate the basic methods of microscopic staining and observation.
8. Correctly use the optical microscope for the observation of histological sections.
9. Recognize and differentiate under the light microscope the cells, tissues and organs of animals of veterinary interest, and know how to describe them.
10. Obtain and correctly use bibliographic information related to the subject.

3. Syllabus

Theoretical program (55 hours)

Part 1: Introduction, study methods and cytology (9 hours):

Part 2: Histology (15 Hours)

Epithelial tissue and endocrine system: 5 hours

Connective tissue, cartilage tissue and bone tissue: 5 hours

Muscle tissue and nerve tissue: 5 hours

Part 3: Microscopic Organography (31 Hours)

Nervous system: cerebrum, cerebellum, medulla, PNS (2 hours)
Circulatory, blood and bone marrow. (5 hours)
Lymphoid organs. (4 hours)
Digestive: mouth, pharynx, oesophagus, stomach, intestine, peritoneum, liver and BV. (6 hours)
Respiratory: nasal cavity, larynx, trachea, lung, pleura. (3 hours)
Urinary: kidney, ureter, bladder, urethra. (3 hours)
Reproductive system of male and female mammals and birds. (3 hours)
Skin, adnexa and sense organs. (5 hours)
Practical program (23.5 hours)

Practices 1-5: Tissues: Epithelial, Endocrine, Connective, Cartilaginous, Cartilaginous & Bone, Muscular tissues.

Practices 6-15: Organs: Nervous System. Circulatory system. Lymphoid organs. Digestive system. Respiratory system. Urinary system. Reproductive system

4. Academic activities

Theoretical face-to-face classes of 50 minutes of duration, in which the topics of the theoretical program will be presented, with the support of computer presentations and iconography

Seminar: the methodology applied to obtain histological slides and the different microscopes that can be used for their observation will be explained

Laboratory practices: in small groups, where the student will observe under the optical microscope histological preparations of different tissues and organs under supervision

Tutoring: Meeting by appointment arranged by e-mail with a teacher

5. Assessment system

Assessment of theoretical knowledge (Maximum grade 60 points)

- There will be 2 midterm exams that will include short answer questions, T-F, multiple-choice questions, etc.
- Each midterm exam must be passed individually.

Assessment of practical knowledge (Maximum grade 40 points)

There will be 2 types of exams, which must be passed individually.

- Practical exam with images. It will consist of the projection of histological images that the student will have to identify. Maximum grade 20 points
- Practical exam with microscope. Each student will receive 4 histological slides that must be observed under the microscope identifying the tissue or organ in question and making a brief description of them. Maximum grade 20 points

Assessment criteria and level of demand

All exams are passed by obtaining 50% of the possible points

In order to pass the subject, the student must successfully achieve the following:

- Completion of at least 85% of the practices on do an additional practical exam
- Pass each exam separately (1st midterm theoretical exam, 2nd midterm theoretical exam, practical exam with microscope and practical exam with images)

Students who pass any of the theoretical or practical exams but do not manage to pass the subject in the first official call will obtain a "fail" grade, but the grade will be kept for the second call.

Tests for non-face-to face students or those who do the exams in different calls that the first one.

Non-face-to-face students will have to undergo a final assessment which, as for the rest of the students, will consist of a theoretical exam consisting of 2 midterms and a practical exam with 2 parts, images and microscope. They will also have to take an additional practical exam in lieu of the practices, which will consist of making schematic drawings with written indications of the different components of 4 tissues/organs studied in the practices.

The assessment criteria and the level of demand for these students will be the same as for the rest of the students, taking the first call as a model