

Histology

Code: 103631
ECTS Credits: 3

Degree	Type	Year	Semester
2502442 Medicine	OB	1	2

Contact

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Use of Languages

Principal working language: spanish (spa)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: Yes

Teachers

Bernardo Castellano López

Prerequisites

Although there are no prerequisites for enrollment, it is advisable that the student has basic knowledge and competences in the subjects *Cellular Biology, Biochemistry and Molecular Biology*.

Objectives and Contextualisation

The course of Histology is programmed in the second semester of the first year of the Degree in Medicine and develops the knowledge of the general characteristics of the basic human tissues structures in the organism. The acquisition of competences of the subject will allow the student to face with a general basis the study of the histology of the diverse systems of the human organism during the second course.

The general training objectives of this subject are:

- Differentiate the types of tissues due to their histological and functional characteristics.
- Identify the different cell types that make up each tissue and describe their most important characteristics.
- Use textbooks, atlases and internet resources specific to the study of the subject.
- Develop with ability in the management of the optical microscope and the study of histological preparations.

Competences

- Communicate clearly, orally and in writing, with other professionals and the media.
- Critically assess and use clinical and biomedical information sources to obtain, organise, interpret and present information on science and health.
- Demonstrate knowledge of the principles and physical, biochemical and biological processes that help to understand the functioning of the organism and its disorders.
- Demonstrate understanding of the basic sciences and the principles underpinning them.

- Demonstrate understanding of the structure and function of the body systems of the normal human organism at different stages in life and in both sexes.
- Formulate hypotheses and compile and critically assess information for problem-solving, using the scientific method.
- Perform the basic practical procedures of examination and treatment.

Learning Outcomes

1. Apply acquired knowledge of physiology and histology to produce structured review texts.
2. Communicate clearly, orally and in writing, with other professionals and the media.
3. Consult the different information sources, including textbooks, internet resources and bibliographic databases.
4. Describe the cellular organisation of the different body tissues.
5. Describe the function of the different body compartments.
6. Describe the general organisation and function of the tissues of the human body.
7. Distinguish the basic differences between tissue types from their histological and functional characteristics.
8. Enumerate the main techniques used in histology and physiology laboratories.
9. Explain the basic functional mechanisms of the different cell types and the tissues they make up.
10. Formulate hypotheses and compile and critically assess information for problem-solving, using the scientific method.
11. Identify the cell types that make up each tissue and describe their most important differential characteristics.
12. Identify the different body tissues microscopically.
13. Identify the fundamental scientific principles of human histology and physiology.
14. Identify the tissues and cell types that make up the different body systems in health.
15. Make correct use of the international histological and physiological nomenclature.

Content

INTRODUCTION TO HISTOLOGY

- Concept of tissue
- Classification of the basic tissues
- Histological processing and techniques

EPITHELIAL TISSUES

- Revestment epithelia
- Glandular epithelia. Exocrine and endocrine glands

CONNECTIVE TISSUE

- Classification of connective tissues
- Conjunctive tissue
- Adipose tissue
- Blood tissue
- Cartilaginous tissue
- Bone tissue

MUSCULAR TISSUE

- Classification of the muscular tissues
- Smooth muscle tissue
- Striated muscle tissue: skeletal and cardiac

NERVOUS TISSUE

- Neural cells
- Glial cells

Methodology

Theoretical classes: 16h

Laboratory practices in the microscope classroom: 10h

Preparation of cases and practices: 2h + personal study

Study and preparation of the subject: personal study

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
LABORATORY PRACTICES	10	0.4	7, 14, 11, 12, 15
THEORY (TH)	16	0.64	4, 6, 7, 8, 9, 13, 14, 11, 12, 15
Type: Supervised			
TUTORIALS	1	0.04	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 11, 12, 15
Type: Autonomous			
PREPARATION OF WRITTEN WORKS / SELF-STUDY / READING ARTICLES OR REPORTS OF INTEREST	20	0.8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 11, 12, 15
SELF-STUDY	20	0.8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 11, 12, 15

Assessment

Continuous Evaluation (20%): 50% Practical Laboratory sessions (AcP) + 50 % Moodle activities (based on cases and basic questions).

- Students must score 5 out of 10 points of evaluation activities in the Practical Laboratory sessions.

Final Exam (80%): 40% Test (ExCB) + 30% Cases and Problems (ExRCP) + 30% Image interpretation test (ExIM)

- Students must score 6 out of 10 points in the Test exam; 4 out of 10 points in the Cases and Problems exam; and 5 out of 10 points in the Image Interpretation test.

The final score of the subject will be done by applying the following formula:

$$NF = 0.2 \times ((0.5 \times Moodle) + (0.5 \times AcP)) + 0.8 \times ((0.4 \times ExCB) + (0.3 \times ExIM) + (0.3 \times ExRCP)).$$

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Evaluation through case studies and problem solving	5	1.5	0.06	1, 3, 4, 5, 6, 7, 8, 9, 13, 14, 11, 12, 15
Practical evaluations	10	2	0.08	2, 3, 7, 8, 10, 14, 11, 12, 15
Practical evaluations	24	0.5	0.02	8, 14, 11, 12, 15
Written evaluation: Objective tests	32	0.5	0.02	4, 5, 6, 7, 8, 9, 13, 14, 11, 15
Written evaluation: Objective tests / Selection items / Multiple choice questions	5	2	0.08	1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 11, 12, 15
Written evaluation: Objective tests / Selection items / Multiple choice questions	24	1.5	0.06	1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 11, 12, 15

Bibliography

The following text books are taken as reference for the follow-up of the subject:

- HISTOLOGY AND CELL BIOLOGY: An Introduction to Pathology. Kierszenbaum and Three. Editorial Elsevier Saunders, 2016, 5th edition.
- ROSS. HISTOLOGY: TEXT AND ATLAS. Pawlina. Editorial Panamericana Medical, 2015, 7th Edition.
- HISTOLOGIA. Geneser Editorial Panamericana Medical, 2015, 4th Edition

Note: These textbooks will be useful for the subject of histology taught in the second year and constitute an introduction to the pathological anatomy taught in the third year.