

Systems Histology

Code: 101895
ECTS Credits: 6

Degree	Type	Year	Semester
2501230 Biomedical Sciences	OB	2	1

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: No

Teachers

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Prerequisites

There are no official prerequisites. However, a basic knowledge of Cell Biology and Histology of tissues is recommended.

Objectives and Contextualisation

This is an obligatory subject in the 2n year, concerning the cellular and tissue bases of human organs and systems. It has been designed assuming students have a basic knowledge of Histology and Physiology that will facilitate they acquire a comprehensive understanding and an integrated approach to the organization of human organs.

The subject gives the basic knowledge to undertand the subject of Anatomy of pathology next year.

The main goals of the subject are:

- a) Understand the cellular and tissular organization of the different organs and systems of the human body.
- b) Recognize and identify at the microscopic level the different organs and systems of the human body.
- c) Relate the tissular composition of the organs with their function.

Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Display knowledge of the bases and elements applicable to the development and validation of diagnostic and therapeutic techniques.

- Display knowledge of the basic life processes on several levels of organisation: molecular, cellular, tissues, organs, individual and populations.
- Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
- Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
- Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
- Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.
- Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
- Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
- Work as part of a group with members of other professions, understanding their viewpoint and establishing a constructive collaboration.

Learning Outcomes

1. Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
2. Define the morphological characteristics of the tissues and cells of the digestive system.
3. Define the morphological characteristics of the tissues and cells of the excretory system.
4. Describe the morphological characteristics of the tissues and cells of the cardiovascular system.
5. Describe the morphological characteristics of the tissues and cells of the endocrine glands.
6. Describe the morphological characteristics of the tissues and cells of the respiratory system.
7. Describe the principal histological techniques for studying human tissues and their component cells.
8. Discern the morphological characteristics of the tissues and cells of the genital system.
9. Discern the morphological characteristics of the tissues and cells of the nervous system.
10. Identify the different organs and tissues of the body microscopically.
11. Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
12. Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
13. Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
14. Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
15. Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.
16. Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
17. Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
18. Work as part of a group with members of other professions, understanding their viewpoint and establishing a constructive collaboration.

Content

1. Integumentary system
2. Sensory organs

3. Cardiovascular system
4. Immune system
5. Endocrine system
6. Respiratory system
7. Digestive system
8. Excretory system
9. Male reproductive system
10. Female reproductive system

Methodology

Histology of Systems includes lectures and seminars.

Lectures

The subjects of teaching units will be taught in 38 sessions. The objective of these lectures is to help the students to reach the objective for each thematic subject. During the classes, the teacher will do a brief introduction of the subject and then will discuss with the students the difficulties they found preparing the specific objectives.

Seminars

The scheduled seminars are designed in order for to students work in small groups to acquire teamwork and critical thinking skills. Students will be divided into working groups for a specific program topic, followed by collective discussion. The organization of the groups and the distribution of topics to be discussed will take place during the seminars. classroom.

Seminar attendance is mandatory.

Tutorials

Tutoring will be done personally in the professor's office (times to be arranged). Tutorials should be used to clarify concepts and consolidate the knowledge acquired by the personal work of the student. They can also be useful to answer questions that students may have about the preparation of seminars.

The material in the Virtual Campus

In the Virtual Campus, the students could communicate with the teacher and they will find:

- 1) The objectives of each thematic subject.
- 2) All the material for the lectures and seminars
- 3) The convocation of the exam and the marks
- 4) A specific forum to solve questions.

Bibliography

It is recommendable to consult specific books and other material in the internet. It is important to distinguish between a textbook, which help to reach the knowledge objectives and an image atlas that will help to reach the objectives of structure identification.

* All the described methodology would be modified or altered due to the sanitary crisis derived from the Covid-19.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Lectures	38	1.52	2, 3, 5, 4, 6, 7, 8, 9, 10
Seminars	10	0.4	18
Type: Supervised			
Tutorials	6	0.24	2, 3, 5, 4, 6, 7, 8, 9, 10
Type: Autonomous			
Seminars	23	0.92	18
Study	66	2.64	

Assessment

The competences of this subject will be assessed through continuous assessment, which will include individual tests of theoretical and practical knowledge and seminars conducted in groups.

The evaluation system is organized in three sections, each of which is evaluated independently and will be assigned a specific weight in the final grade of the subject:

Written exams (80% of the overall mark): In this section, the knowledge acquired by each student is assessed individually with test-type exams. There will be two partial tests, eliminatory of subject, along the course and a final test of recovery (see programming of the asignatura).

Students who have obtained a grade lower than 4 (out of 10) in any of these tests will not be able to weigh it with the mark obtained in the seminars and, therefore, will have to take the resit exam in the maturity test. final.

Seminars (20% of the overall grade). This section assesses the ability of students in each group to analyze and synthesize, as well as the skills of group work and oral presentation.

The seminars will be valued as follows:

Written work

50%

The teacher evaluates (out of 10) the works submitted by each group of students (see submissions)

Oral presentation

20%

The teacher evaluates (out of 10) the skills of each group of students in the public presentation of their work

Inter-group qualification

15%

Each group of students evaluates (out of 10) the groups that make the oral presentation of the work

Intra-group qualification

15%

Within each group, each student evaluates (out of 10) their classmates in the last seminar

TOTAL

100%

Attendance at seminars is mandatory. In case of not attending any of the sessions, for unjustified reason, there will be a penalty in the final qualification of the seminars:

Absence 1 session = 20% reduction of the grade.

Absence 2 sessions = 40% reduction of the grade.

Absence 3 sessions = 80% reduction of the grade.

* All this evaluation system described can be modified or altered due to the health crisis generated by Covid-19.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Seminars	20	2	0.08	1, 17, 2, 3, 5, 4, 6, 7, 8, 9, 10, 11, 15, 14, 12, 13, 18
Written exams	80	5	0.2	2, 3, 5, 4, 6, 7, 8, 9, 10, 16, 15, 14, 12, 13

Bibliography

- Fawcett, D.W.: Tratado de Histología (ed. Interamericana-McGraw Hill).
- Gartner, L.P. Hiatt, J.L.: Texto Atlas De Histología, (ed. McGraw Hill).
- Geneser, F.: Histología (ed. Panamericana).
- Krstic, R.V.: Los tejidos del hombre y de los mamíferos (ed. McGraw Hill).
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- Kierszbaum, A. y Tres. L: Histología y Biología Celular. Introducción a la anatomía patológica. (Ed. Elsevier)

ATLAS

- Boya, J. Atlas de Histología y organografía microscópica, ed. Panamericana.
- Cross, P.C. & Mercer, K.L. Cell and Tissue Ultrastructure. A functional perspective, ed. Freeman and Company.
- Eroschenko, V.P. Di Fiore's Atlas of Histology, ed. Lea and Febiger.
- Fawcett, D.W. The Cell, ed. W.B. Saunders Company.
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- Kessel, R.G. and Kardon, R.H.: Tissues and organs: a text-atlas of scanning electron microscopy, ed. Freeman and Company.

- Kühnel, W. Atlas de Citología y Anatomía microscópica, ed. Omega.
- Stanley, L.E. & Magney, J.E. Coloratlas Histología, ed. Mosby.
- Welsch, U. Histología (Sobotta / Hammersen), ed. Marbán.
- Young, B. & Heath, J.W. Histología funcional (Wheater), ed. Churchill Livingstone
- <https://histologyguide.org//index.html>

Software

There is no specific software for this course