

Academic Year/course: 2022/23

26761 - Histology I (General Histology)

Syllabus Information

Academic Year: 2022/23

Subject: 26761 - Histology I (General Histology)

Faculty / School: 104 - Facultad de Medicina

229 - Facultad de Ciencias de la Salud y del Deporte

Degree: 304 - Degree in Medicine

305 - Degree in Medicine

ECTS: 6.0

Year: 1

Semester: Second semester

Subject Type: Basic Education

Module:

1. General information

1.1. Aims of the course

The subject and its expected results respond to the following approaches and objectives:

Introduce students to the basic knowledge of current techniques for the microscopic study of cell types, tissues and organs.

To familiarize students with the concept of tissue as an integrated system of cells and extracellular material and its functional correlation

Identify the various elements that make up the tissues and that allow us to distinguish some tissues from others

Know the structural organization of the central nervous system and the skin.

These approaches and objectives are aligned with the following Sustainable Development Goal (SDG) of the United Nations 2030 Agenda, in such a way that the acquisition of the learning results of the subject provides training and competence to contribute to a certain extent to its achievement: Health and well-being (Goal 3).

1.2. Context and importance of this course in the degree

Histology I (General Histology) takes advantage of the knowledge acquired in subjects studied in the first semester of the degree (mainly Biology And Biochemistry) to get to know how the cells and molecules of the extracellular matrix are organized in the tissues. The knowledge acquired in this subject will allow the student to follow the subjects of later semesters, especially Histology II (Special Histology) (in the third semester), Neuroanatomy (in the fourth semester) and Anatomico-pathological diagnostic and therapeutic Procedures (in the fifth semester).

1.3. Recommendations to take this course

To facilitate the study of the contents corresponding to Histology I (General Histology) it is necessary for students to have knowledge of Cell Biology and Biochemistry to be able to distinguish the cell types and the extracellular material that make up the different tissues.

2. Learning goals

2.1. Competences

BASIC AND GENERAL

CB1 - Students should demonstrate to possess and understand knowledge in an area of study that starts from the base of general secondary education, and is usually found at a level that, although supported by advanced textbooks, also includes some aspects that imply knowledge coming from the vanguard of their field of study.

CB2 - Students should know how to apply their knowledge to their work or vocation in a professional manner and possess the skills that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study.

CB3 - Students should have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant issues of social, scientific or ethical nature.

CB4 - Students should transmit information, ideas, problems and solutions to a specialized and non-specialized public.

CB5 - Students should have developed those learning skills necessary to undertake further studies with a high degree of autonomy

SPECIFIC

CE01 - Know the cellular structure and function. Biomolecules Metabolism. Regulation and metabolic integration

CE04 - Know the morphology, structure and function of the skin, blood, circulatory, digestive, locomotor, reproductive, excretory and respiratory systems and systems; endocrine system, immune system and central and peripheral nervous system. Growth, maturation and aging of the different devices and systems. Homeostasis Adaptation to the environment

CE05 - Handling material and basic laboratory techniques

CE07 - Recognize the morphology and structure of tissue, organs and systems with macroscopic, microscopic and imaging techniques

TRANSVERSALS

a. INSTRUMENTAL

1. Capacity for analysis and synthesis
2. Capacity for organization and planning
3. Oral and written communication in the native language
4. Information management capacity
5. Decision making

b. PERSONAL

6. Team work
7. Critical thinking

c. SYSTEMS

8. Self-directed learning
9. Motivation for quality

2.2. Learning goals

The student, to pass this subject, must demonstrate the following results ...

Understand the basics of the basic techniques of studying histological samples and the proper management of the optical microscope

Recognize the different components of the various tissues

Establish the relationship that exists between the microscopic organization of tissues and the function they fulfill

Know the microscopic organization of the central nervous system and the skin and identify the tissues that form them

2.3. Importance of learning goals

The knowledge obtained in the field Histology I (General Histology) are fundamental for the study of the subject Histology II (Special Histology) and the subject Anatomico-pathological diagnostic and therapeutic procedures.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The student must demonstrate that he has achieved the expected learning outcomes through the following assessment activities

PROCEDURES AND ASSESSMENT TOOLS

The evaluation will be made taking into account a written exam, the work presented and the seminars:

- 1.1. Written exam

The written exam will consist of:

a part composed of multiple-choice questions. Each question will have four answers and only one of them will be valid. This part will be worth 30 points. You need at least 15 points to pass the exam
a part in which students will point out the histological details of several microphotographs. In this part you can get 70 points. At least 35 points are needed to pass the exam.

To pass the exam you must obtain 50 points, which correspond to the approved (5).

Students will complete only one final exam.

The written exam grade will be:

1.2.- Seminars

The seminars will be valued from 0 to 10. Small surveys will be carried out on the students related to the seminars that will serve to evaluate their progress in the subject.

1.3.- Audiovisual works

The seminars will be valued from 0 to 10. Small surveys will be carried out on the students related to the seminars that will serve to evaluate their progress in the subject.

EVALUATION CRITERIA AND LEVELS OF DEMAND

The final grade will be obtained from the sum of:

- 90% of the written exam grade
- 10% of the audiovisual work

If the sum obtained is less than 5 points the rating will be SUSPENSE, if 5 or more points are obtained and less than 7 the rating will be APPROVED, if 7 or more points are obtained and less than 9 the rating will be NOTABLE and if 9 are obtained or more points the rating will be OVERHEAD.

Dates and time zone of the Global Tests in Zaragoza: <https://medicina.unizar.es/primer-curso#horario2>

Dates and Time Zone of the global evaluations in Huesca

Proposals by the Center, will appear in the following link: <https://fccsyd.unizar.es/horarios-y-calendarios-medicina>

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The learning of Histology I (General Histology) is based on the exposure in classroom classes of the theoretical knowledge that will be necessary for the descriptions of microphotographies that the students will carry out in the seminars and recognize, in the practical sessions, the various types of tissues and the various elements (cells or extracellular material) that integrate them and the organization of the skin.

The students have a website (wzar.unizar.es/acad/histologia) in which they can find an "Atlas of Histology" formed by a collection of microphotographs taken from the histological preparations that can be studied in the practice room and some hyperlinks to other websites.

In addition, students can find in the ADD:

- The program of theoretical and practical classes
- The calendar of theoretical classes, seminars, and practices
- Teaching materials of each of the subjects
- The recommended bibliography

The students will have an interactive DVD designed by the teachers who teach the subject in Zaragoza so that they can study the same histological preparations that they have access to in the microscope room (CONTAMINA, P., P. PARRA Y M. ROJO GARCÍA, Histology Atlas. virtual histological preparations. Ed. Presses University of Zaragoza, 1st ed., interactive DVD, 2013). In the seminars, the students will present and discuss with each other and with the teachers the doubts that have arisen from the study of this material.

The students of Huesca have a website designed by the teacher who teaches in Huesca (<http://es.groups.yahoo.com/group/histologiahuesca/>).

4.2. Learning tasks

The program offered to the student to help achieve the expected results includes the following activities ...

- 1. LECTURES. In the lectures will be taught theoretical content of the subject counting on that the students have previously studied the subject, taking as a reference the information obtained on the website.

- 2. PRACTICE SESSIONS. The practical classes will be taught in the microscope room and the students will handle the optical microscope and study the histological samples that will have at their disposal.
- 3. SEMINARS. The seminars will consist of the presentation by a group of students of microphotographs of histological preparations of the subjects already studied. These microphotographs will include images obtained from the referred website and the interactive DVD in which the students have digitized the practice preparations.
- 4. TUTORED WORKS. Throughout the course, the students will prepare a video or presentation with images containing different subjects of the subject. These works will form a "virtual atlas" consisting of images in which the fundamental elements (cell types, extracellular material ...) of the various tissues studied in the course will be identified and labeled.
- In FCCSD,

Given the exceptional situation of the Academic Year 2021-2022, the large group teaching system could be online, that is to say, in a synchronic telematic system, by which teachers and students will be connected through technologies that allow interaction, such as Google Meet.

4.3. Syllabus

The course will address the following topics:

Introduction

- Topic 1. Introduction to Histology

Epithelial tissue

- Topic 2. Introduction to epithelial tissue
- Topic 3. Epithelia
- Topic 4. Exocrine Glands
- Topic 5. Endocrine Glands

Supporting /connective tissues

- Topic 6. Introduction to Supporting /connective tissues
- Topic 7. Extracellular matrix
- Topic 8. Cells from the connective tissues
- Topic 9. Varieties of connective tissues
- Topic 10. Adipose tissue
- Topic 11. Cartilaginous tissue
- Topic 12. Osseous tissue

Blood

- Topic 13. Introduction to blood
- Topic 14. Blood cells
- Topic 15. Hematopoiesis

Muscular tissues

- Topic 16. Introduction to muscular tissues
- Topic 17. Smooth muscle
- Topic 18. Skeletal striated muscle
- Topic 19. Cardiac striated muscle
- Topic 20. Other types of contracting cells

Nervous tissues

- Topic 21. Introduction to nervous tissues
- Topic 22. The neuron
- Topic 23. interneuronal synapse
- Topic 24. Neuroglia
- Topic 25. Peripheral nervous fiber. Peripheral nerve
- Topic 26. Peripheral nerve endings

Central nervous system

- Topic 27. Spinal cord
- Topic 28. Cerebellar cortex

- Topic 29. Cerebral cortex

Tegumentary system

- Topic 30. The skin
- Topic 31. Skin appendages

Practical program

- Topic 1. Basic Histology Techniques
- Topic 2. Epithelia
- Topic 3. Exocrine glands
- Topic 4. Endocrine glands
- Topic 5. Connective tissue
- Topic 6. Adipose tissue
- Topic 7. Cartilaginous tissue
- Topic 8. Osseous tissue
- Topic 9. Blood
- Topic 10. Muscular tissues
- Topic 11. Nervous tissue
- Topic 12. Central Nervous system
- Topic 13. Tegumentary system

4.4. Course planning and calendar

The detailed calendar, including the days and hours of lectures, practical classes, and seminars, as well as the dates and times of the exams, can be consulted in the ADD.

The designed program includes the following activities: 30h theoretical lessons, 15h practice session, 15h seminar, 15h tutorized work, 2 h evaluation

4.5. Bibliography and recommended resources

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=26761>