Universitat Autònoma de Barcelona

2018/2019

Human Anatomy: Internal Organs

Code: 101934
ECTS Credits: 6

Degree	Type	Year	Semester
2501230 Biomedical Sciences	FB	2	1

Contact

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Use of languages

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

Teachers

Angela Maria Bellmunt Fontanet
David Cánovas Verge
Sergi Call Caja
Santiago Rojas Codina

Prerequisites

Even though there's no incompatibilities established officially, it's recommended that students have overcome the subjects from first grade: "Human Anatomy: Locomotor system" and "Histology and General Physiology".

Objectives and Contextualisation

The subject of Human Anatomy: Internal Organs is a subject given on the first semester of the second grade of the Degree in Biomedical Sciences.

The general objectives of this subject are:

- The study of the anatomic structure of the different appliances and body systems in a state of health (respiratory system, digestive tract, urogenital, sense organs and cranial nerves).
- The study of the organization of the different body systems in a healthy state (respiratory system, digestive tract, urogenital, sense organs and cranial nerves).

The general learning objectives of the subject are:

- Learn and use correctly the anatomical nomenclature of the different appliances and body systems.
- Understand the anatomic organization of the human body.
- Know how to identify the different anatomic structures that integrates the different apparatus and systems in our body.

- Train the students to know how to applicate the knowledge about embryology and anatomy in the deduction of pathologies and/or malformations.

- Acquire practical skills

Skills

- Apply knowledge acquired to the planning and implementation of research, development and innovation projects in a biomedical research laboratory, a clinical department laboratory or the biomedical industry.
- Contribute to public discussions on cultural matters.
- Describe biomedical problems in terms of causes, mechanisms and treatments.
- Develop critical thinking and reasoning and communicate ideas effectively, both in the mother tongue and in other languages.
- Develop independent learning habits and motivation to continue training at postgraduate level.
- Develop scientific knowledge, critical reasoning and creativity.
- 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.
- Display knowledge of the concepts and language of biomedical sciences in order to follow biomedical literature correctly.
- Generate innovative and competitive proposals for research and professional activities.
- Identify and understand the advances and challenges of research.
- Plan and implement laboratory analysis experiments and procedures belonging to the biomedical field.
- Show respect for the ethical and legal aspects of research and professional activities.
- Work as part of a group with members of other professions, understanding their viewpoint and establishing a constructive collaboration.

Learning outcomes

1. Apply acquired knowledge of anatomy to the production of well-structured review articles.
2. Contribute to public discussions on cultural matters.
3. Correctly use the international anatomical nomenclature.
4. Describe the anatomical organisation of the digestive system.
5. Describe the anatomical organisation of the respiratory apparatus.
6. Describe the anatomical organisation of the urogenital apparatus.
7. Describe the general anatomical organisation of the systems of the human body in a healthy state.
8. Develop critical thinking and reasoning and communicate ideas effectively, both in the mother tongue and in other languages.
9. Develop independent learning habits and motivation to continue training at postgraduate level.
10. Develop scientific knowledge, critical reasoning and creativity.
11. Distinguish between normal anatomical structures by using different imaging diagnostic techniques.
12. Explain the formation of the digestive system and of its principal disorders.
13. Explain the formation of the respiratory apparatus and of its principal disorders.
14. Explain the formation of the urogenital apparatus and of its principal disorders.
15. Generate innovative and competitive proposals for research and professional activities.
16. Identify and understand the advances and challenges of research.
17. Identify the anatomical structures that constitute the different systems in a healthy state in the main stages in an individual's life cycle.
18. Identify the principal techniques used in an anatomy laboratory.
19. Show respect for the ethical and legal aspects of research and professional activities.
20. Work as part of a group with members of other professions, understanding their viewpoint and establishing a constructive collaboration.

Content

CHAPTER 1 - GENERALITIES: Thorax. Abdomino-pelvian cavity. Concept and types of viscera.

CHAPTER 2 - DESCRIPTIVE AND TOPOGRAPHIC ANATOMY OF RESPIRATORY APPARATUS: General organization of the respiratory system. Nasal cavities and sinus paranasal. Larynx Trachea and bronchi. Lungs. Pleura and pleural cavity. MediastIum. Vessels and nerves of the respiratory system.

CHAPTER 3 - DESCRIPTIVE AND TOPOGRAPHIC ANATOMY OF DIGESTIVE APPARATUS: General organization of the digestive system. Buccal cavity, tongue, teeth and salivary glands. Branchial organs. Pharynx. Esophagus. Stomach. Small intestine: duodenum, jejunum, íleum, caecum and vermiform appendix. Pancreas. Spleen. Large intestine: colon. Rectum. Anal conduct. Liver and bile ducts. Peritoneal cavity. Vessels and nerves of the digestive apparatus.

CHAPTER 4 - DESCRIPTIVE AND TOPOGRAPHIC ANATOMY OF UROGENITAL APPARATUS: General organization of the urogenital apparatus. Kidneys, ureters, urinary bladder and urethra (male and female). Adrenal glands. Testicles and spermatic pathways. Prostate. Penis. Ovaries. Uterus. and ligaments. Uterine tubes (Fallopian tubes). Vagina. Vulva. Mama. Vessels and nerves of the urogenital apparatus.

CHAPTER 5- EYES: Ocular membranes: external (sclerotic, cornea), medium or uvea (coroids, ciliary and iris body), internal (retina). Lacrimal apparatus. Eyelids, Oculomotor musculature. Vessels and nerves of the orbital cavity.

CHAPTER 6 - EAR: Generalities. External ear (outer ear): auricle (pina) and auditory canal. Tympanic membrane or eardrum. Middle ear or tympanic cavity: malleus, incus, stapes, musclesofthe middle ear. Inner ear: cochlea and semicircular canals. Auditory or Eustachian tube.

CHAPTER 7 - CRANIAL NERVES: Generalities. Motor nerves. Sensitive and sensorial nerves. Mixed nerve.

CHAPTER 8- COMPARED ANATOMY

TEACHING STAFF	TEMA	E-MAIL
Dra. Rosa Mirapeix	1-3-4	rosa.mirapeix@uab.cat
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Methodology

In accordance with the objectives of the subject, the teaching methodology of the course is based on the followin

DIRECTED ACTIVITIES:

Lectures: Systematized exhibition of the syllabus of the subject, giving sp

The student acquires the knowledge of the subject by attending master classes and complementing them with pe

36 hours of theoretical classes are scheduled.
Seminars: Sessions with a smaller number of students where discussion

They are programmed 4 hours per group.
Practical Labs: Students will go in groups redducidos to the dissection ro

They study in anatomical preparations of human specimens and its correlation with diagnostic techniques by the

14 hours per group are scheduled.

SUPERVISED ACTIVITIES:
Tutorials: The tutorials will be made in a personalized way in the teacher'

The aim of the tutorials is to clarify concepts, establish the knowledge acquired and facilitate the study by the stu

They can also be used to solve doubts that students have about the preparation of seminars.

AUTONOMOUS ACTIVITIES:
Personal study Realization of schemes and summaries. Conceptual assi

Activities

Title	Hours	ECTS	Learning outcomes
Type: Directed			
Practical Labs	14	0.56	19, 2, 4, 5, 6, 7, 10, 9, 8, 11, 16, 17, 18, 20, 3
Seminars	4	0.16	19, 1, 2, 10, 9, 8, 11, 12, 13, 14, 15, 16, 18, 20, 3
Theoretical lectures	36	1.44	4, 5, 6, 7, 10, 9, 8, 11, 16, 17
Type: Supervised			
Tutorials	14	0.56	19, 1, 2, 10, 9, 8, 11, 15, 16, 17, 18, 20, 3
Type: Autonomous			
Autonomous activies	75	3	19, 1, 2, 4, 5, 6, 7, 10, 9, 8, 11, 15, 16, 17, 18, 20, 3

Evaluation

The competences of the module will be evaluated through two partial tests, with a weight of 50% of the final grade of the subject each. Each partial test will be eliminatory of the matiera, if the student reaches a minimum grade of 5.0. All students will have two opportunities to pass both parts of the subject: the evaluations scheduled during the course (partial exams) and the recovery test.

PARTIAL EXAMS:

Each module will programme an exam when each part has finalized (according to the Faculty's teaching calendar). The test of each partial will represent 50% of the final grade of the module.

In order to take the test, the student must assist all teaching activities programmed by the module (PLAB). Only one unexcused absence per term are allowed.

Each parcial exam will consist of:

- Written theoretical evaluation - multiple choice questions: 5 choices will be given per question with only on answer being correct. 0,25pts will be deducted per incorrect answer. This represents 70% of the exam grade (35% of the grade of the module). In order to reduce study material the grade of this test must be equal to or higher than a 5,0. Exam content: theoretical lectures, seminars and practical labs.

- Written practical evaluation (in the dissection lab): Short question about preparations or anatomical images. Blanc or wrong question will not be penalised. This test represents 30% of the semester grade (15% of the final module grade). In order to reduce study material the grade of this test must be equal to or a higher than a 5,0. The test will not be corrected if the student has a grade below 5 in the multiple choice exam. Students with a grade 5 or above can ask for their test to be corrected and grade given to them the day of the grade revisions. Exam content: Theoretical lectures, seminars and practical labs.

Partial exam grade = multiple choice exam grade (70%) + anatomical structure exam grade (dissection Lab) (30%).

Elimination of study material:

The student will eliminate study material of a partial when these premises have been met:

1. The grade of the multiple choice questions exam equal to or above a 5,0.
2. The grade of the anatomical structures exam equal to or above a 5,0

If the student has a good grade on one of the two exams but does not have a 5 or above on the other one the student will not have eliminated study content (independent of whether the sum of the two exams is equal to or above a 5,0). In this case the student will have to retake the part partial exam.

RETAKE EXAM :

The module will programme a final evaluation, according to the Faculty's teaching calendar. They won't be obliged to do a final evalutaion for students who have eliminatd material in the partial exams mentioned above. All students who have not attended any teaching activity programme during the year can attend.

Students meeting the following criteria will have to attend the final evaluation:

1. Student who have not eliminated of one or two of the partial exams (students not meeting the requirements to eliminate material of the partial)
2. Students who have not attended any partial tests.
3. Students who have eliminated material but want to increase their grade of one or both tests. In these cases:
    1. The student will have to take the theoretical + practical partials he wishes to increase grade in

2. The students that do not meet both premises (1- theoretical exam grade of 5,0 or above / 2- practical exam grade 5,9 or above) will have failed the module.
3. To calculate the final grade the highest exam grade will be used.
4. An email must be sent to the coordinator of the module at least 1 week before the retake exam.

Retake exam characteristics:

- To be eligible for the retake process, the student should have been previously evaluated in a set of activities equaling at least 2/3 of the final score of the course (that means to the 1st and 2n module-partial exams).
- The retake exam will evaluate both partial separately.
- For each retake the course content, grade curves and premises will be the same as during the year.
- The retake exam for each partial will consist of :

  Written theoretical evaluation: The coordinator at the moment of the retake of the exam will inform the students of the exam characteristics. This test will represent 70% of the partial retake. A minimum grade of 5,0 is required to pass the module. Exam content: Theory, seminars and practicals.

  Practical evaluation based on recognising anatomic structures: Exam consists of short questions about preparations or anatomical images. Incorrect or blanc answers will not be penalised. This test represents 30% of the final partial grade. A minimum grade of 5,0 must be obtained to pass the module. Exam content: Lectures, seminars and practicals.

STUDENTS ENROLLED TWICE OR MORE:

Students who have enrolled the module twice or more and have not passed the module through continuous evaluation (partial exams)can ask the coordinator (through email) at least one week before the retake exam date a mock exam as a practice. The practical exam (anatomical structures recognition) will be retaken as the rest of the students.

MODULE GRADE:

The module grade is the sum of both partial. Grade = grade 1st partial (50%) + grade second partial (50%). To apply this formula a grade of 5,0 or above must be obtained on both exams. Even if one test has a good grade, if the other exam does not have a grade of 5,0 or above the student will have failed the module (independently of the final added curved grades). In this case the final grade will be a maximum of 4,8.

The final grade will be a numerical expression with one decimal, between 0-10 and with a qualitative equivalence according to the university's criteria: fail (0-4,9), pass (5,0-6,9), good (7,0-8,9) and excellent (9,0-10,0) (with the option of obtaining an "honorable enrollement"). The number of "honorable enrollments" given out will be no higher tan 5% as established in the academic rules of the UAB.

A student that has not taken at least three out of four evaluations will be considered a **not evaluable student.** Thus, the student will be graded as "No avaluable" if the weightin of all conducted evaluations acvtivities is less than 67% of the final score.

CALLS, GRADE REVISIONS:

The retake exams and revision sitting location and dates will be announced through the virtual UAB campus. The revision process will be done according to the UAB norms and will be carried out individually with the student.

The results of the activities of the evaluation will be announced through the UAB virtual campus in the previously given date through the exam convening.

Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
A) Written theoretical evaluation nº 1 - objective	35%	1.5	0.06	1, 2, 4, 5, 6, 7, 10, 8, 11, 12, 13,

exam, multiple choice				14, 15, 16, 17, 18, 20, 3
B) written practical evaluation nº1 - objective exam, seleccion items	15%	2	0.08	19, 1, 2, 4, 5, 6, 7, 10, 9, 8, 11, 12, 13, 15, 16, 17, 18, 3
C) Written theoretical evaluation nº 2 - objective exam, multiple choice	35%	1.5	0.06	1, 2, 4, 5, 6, 7, 10, 8, 11, 12, 13, 14, 15, 16, 17, 18, 20, 3
D) written practical evaluation nº2 - objective exam, seleccion items	15%	2	0.08	19, 2, 4, 5, 6, 7, 10, 9, 8, 11, 12, 13, 14, 15, 16, 17, 18, 3

Bibliography

Text books:

- Drake RL, Vogl AW, Mitchell AWM (2013). Gray- Anatomía para estudiantes. 3ª2ª edición. Ed. Elsevier
- García-Porrero JA; Hurlé JM (2015). Anatomía Humana. Ed. McGraw-Hill. Interamericana. E-book en la biblioteca de la UAB.

Atlas:

- Feneis H, Dauber W (2006) Nomenclatura anatómica ilustrada. 5ª edición. Ed. Masson
- Gilroy AM, MacPherson BR, Ross LM (2013) Prometheus. Atlas de Anatomía. 2ª edición. Ed. Panamericana
- Rohen JW, Yokochi C, Lütjen-Drecoll E (2011) Atlas de Anatomía Humana. 7ª edición. Ed. Elsevier