Human Anatomy: Cardiovascular, Head and Neck

Code: 106728
ECTS Credits: 4

2024/2025

Degree	Type	Year
2502442 Medicine	FB	1

Contact

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Teachers

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Teaching groups languages

You can view this information at the end of this document.

Prerequisites

Although there are no official prerequisites, it is advisable to have acquired self-learning and teamwork skills. Likewise, it is recommended to have achieved the objectives of the subject Human Anatomy: Generalities and Locomotor Apparatus, which is taught in the first semester of the first course.

Because practical sessions will be conducted in the dissection room, a commitment to maintain confidentiality and professional secrecy of the data that may be accessed during learning activities must be acquired, and a professional ethical attitude must be maintained in all actions. A safety certificate proving that the specific test for good practices in the dissection room has been passed must also be obtained.

Objectives and Contextualisation

The general objective of the subject is the study of the general anatomical organization of the cardiovascular system, the head and neck, the principles of embryonic development of the cardiovascular system and of the

head, and the systematic study of the anatomy of the cardiovascular system (heart, vessels of the major and minor circulation, and the lymphatic system), the osteo-musculo-articular organization of the head (including the organ of vision and hearing) and the musculo-aponeurotic organization of the neck. This subject has its natural continuity with the second-year anatomy subjects, and it is complemented by other basic and compulsory subjects such as Histology, Physiology and Pathophysiology and Clinical Semiology.

The student who has passed this subject must be able to describe, with an international anatomical nomenclature, and to recognize the anatomical organization of the cardiovascular system, the head and neck, as well as the principles of their development.

Competences

- Be able to work in an international context.
- 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 and understanding of descriptive and functional anatomy, both macro- and microscopic, of different body systems, and topographic anatomy, its correlation with basic complementary examinations and its developmental mechanisms.
- Demonstrate understanding of the basic sciences and the principles underpinning them.
- Demonstrate understanding of the causal agents and the risk factors that determine states of health and the progression of illnesses.
- 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.
- Organise and plan time and workload in professional activity.
- Use information and communication technologies in professional practice.

Learning Outcomes

1. Apply knowledge of anatomy to the production of structured review texts.
2. Be able to work in an international context.
3. Communicate clearly, orally and in writing, with other professionals and the media.
4. Describe anatomical structures through inspection, palpation and/or different diagnostic imaging techniques.
5. Describe anatomical structures, organisation and morphogenesis of the cardiovascular system, central nervous system and the sense organs.
6. Describe the factors that determine the form, general aspect and proportions of the human body in health at different stages in life and in both sexes.
7. Describe the fundamental scientific principles of human anatomy.
8. Describe the general anatomical organisation of the systems of the human body in health.
9. Explain the formation of the embryonic disc and its principal derivatives.
10. Formulate hypotheses and compile and critically assess information for problem-solving, using the scientific method.
11. Identify the anatomical structures that constitute the different body systems in good health in the major stages of the life cycle and in both sexes.
12. Identify the anatomical structures that make up the cardiovascular system, the central nervous system, and the sense organs in health, by using inspection, palpation and/or macroscopic methods and different diagnostic imaging techniques.
13. Identify the main techniques used in a human anatomy laboratory.
14. Identify the morphogenetic mechanisms of the main alterations in the development of the cardiovascular system, the central nervous system and the sense organs.
15. Know and make correct use of the international anatomical nomenclature.
16. Organise and plan time and workload in professional activity.

17. Use information and communication technologies in professional practice.

Content

Theoretical classes program (21h)

UNIT 1: HEAD

General Organization of the bones: views or norms, cranial fossae, joints. Morphogenesis: desmocranium, chondrocranium. Development of the viscerocranium: first and second pharyngeal arches. Skull joints: syndesmosis, synchondrosis and synovial. Temporomandibular joint. Kinematics. Muscles of mastication: temporal, masseter, medial and lateral pterygoid muscles. Suprahyoid muscles: digastric, mylohyoid, geniohyoid and stylohyoid. Muscles of facial expression: general characteristics. Circumorbital and palpebral muscles. Nasal muscles. Buccolabial muscles.

UNIT 2: NECK

General organization: fasciae and cervical spaces. Triangles of the neck: limits and content. Infrahyoid muscles: sternohyoid, omohyoid, sternothyroid and thyrohyoid muscles. Lateral muscles: scaleni anterior, medium and posterior. Craniozonal muscles: sternocleidomastoid and trapezius muscles. Cervical plexus: constitution, terminal and collateral branches.

UNIT 3: EYE

Bony orbit. Anatomical constitution of the eye: Outer coat (sclera, cornea), Uvea (choroid, ciliary body, iris), Retina. Lens and humours. Lacrimal system. Extraocular muscles and fascial sheet.

UNIT 4: EAR

External ear: pinna, externa auditory canal. Middle ear: tympanic cavity, pharyngotympanic tube, mastoid cells. Inner ear: bony labyrinth (vestibule, semicircular canals, cochlea) and membranous labyrinth (utricle, saccule, semicircular ducts, endolymphatic duct and sac, cochlear duct).

UNIT 5: HEART

General organization: anatomical constitution, location, relationships. External morphology: base, apex, surfaces and borders. Internal morphology: fibrous skeleton, cavities. Myocardium. Conduction tissues. Vascular supply and lymphatics drainage. Innervation. Pericardium: fibrous and serous pericardium. Pericardial cavity and fluid.

UNIT 6: DEVELOPMENT OF THE HEART AND CIRCULATION

Morphogenesis of the heart: premorphogenetic and morphogenetic phases. Cardiac tube: looping, septation and histodifferentiation processes. Morphogenesis of the vascular system: development of the aortic arches, development of the vitelline, umbilical and cardinal veins. Development of the lymphatic system.

UNIT 7: VASCULAR SYSTEM

Minor circulation (pulmonary); pulmonary trunk, right and left pulmonary arteries, Pulmonary arterial segmentation. Pulmonary veins. Major circulation (systematic): ascending aorta, arch and descending aorta (thoracic and abdominal parts). Common iliac arteries. Supra-aortic trunks: brachiocephalic trunk, left common carotid artery and left subclavian artery. Subclavian arteries. Common carotid arteries: carotid bifurcation. Internal carotid arteries. External carotid arteries. Maxillary and superficial temporal arteries. Venous systems. Jugular veins (internal, external, anterior). Subclavian veins. Jugulosubclavian angles. Brachiocephalic veins. Superior vena cava. Iliac veins. Inferior vena cava. Intercaval venous systems: azygous and vertebral plexuses. Lymphatic system: cisterna chyli (Pecquet), thoracic duct and right lymphatic duct.

Seminar program (8h)

Seminar 1: Osteology of the skull (1). Bones of the neurocranium and bones of the viscerocranium (face). Adult and foetal skull. Sutures and fontanelles. Lateral view: bones and fossae. Main anthropometric points of the skull. Correlation of the osteology with diagnostic imaging techniques.

Seminar 2: Osteology of the skull (2). Frontal (anterior) view. Orbital cavity. Nasal cavity and paranasal sinuses. Correlation of the osteology with diagnostic imaging techniques.

Seminar 3: Osteology of the skull (3). Internal or cranial fossae of the skull: anterior, middle and posterior fossae and orifices. Correlation of the osteology with diagnostic imaging techniques.

Seminar 4: Development of the heart and circulation and its application to clinical cases.

Dissection practices (6h)

To access the dissection lab, it is mandatory to wear a gown, gloves and any other protective measure that is established, and to have the safety certificate. It is totally forbidden to make any type of image (photography, video, ..) in the dissection room.

Practice 1 (anatomy of the head and neck).

Contents: skull: views and cranial fossae. Sutures and fontanelles. Temporomandibular joint. Muscles of mastication. Muscles of facial expression. Muscles and fasciae of the neck. Cervical triangles: limits and contents. Cervical plexus. Correlation of the anatomical preparations with diagnostic imaging techniques.

Practice 2 (anatomy of the special senses).

Contents: orbital cavity, eyeball, ocular attachments (extraocular muscles, lacrimal system). Temporal bone and ear (inner, middle and external ear). Correlation of the anatomical preparations with diagnostic imaging techniques.

Practice 3 (anatomy of the cardiovascular system).

Contents: external morphology of the heart. Pericardium. Internal morphology of the heart: cardiac cavities and fibrous skeleton. Vascular supply (coronary arteries and cardiac veins and lymphatics). Nerves and cardiac plexuses. Heart relationships. Correlation of anatomical preparations of the heart with diagnostic imaging techniques. Vascular system: aorta. Pulmonary arteries and veins. Common iliac arteries. Carotid arteries: common, internal and external. Subclavian arteries and veins. Maxillary and superficial temporal arteries. Jugular veins and superior vena cava. Iliac veins and inferior vena cava. Intercaval anastomotic systems: azygous vein and vertebral plexuses. Lymphatic ducts: thoracic duct and right lymphatic duct. Correlation of anatomical preparations of the vascular system with diagnostic imaging techniques.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
LABORATORY PRACTICES (PLAB)	6	0.24	3, 15, 4, 10, 12, 11, 13, 16, 2, 17
SEMINARS (SEM)	8	0.32	3, 15, 7, 8, 4, 5, 9, 10, 12, 11, 16, 2, 17
THEORY (TE)	21	0.84	3, 15, 7, 8, 5, 9, 10, 12, 11, 16, 2, 17
Type: Supervised			

Queries with the tutors	11	0.44	3, 15, 7, 4, 5, 10, 12, 11, 13, 16, 2, 17
Type: Autonomous			
READING OF ARTICLES / REPORTS OF INTEREST / PERSONAL STUDY	48	1.92	1, 3, 15, 7, 8, 4, 5, 9, 10, 12, 11, 13, 16, 2, 17

METHODOLOGY

Directed activities

Classes to teach the theory program (TE) (21h)

Seminars (SEM) (8h) (didactic material in Virtual Campus of UAB)

Dissection lab practices (PLAB) (6h) (didactic material in Virtual Campus of UAB)

Supervised activities

Personalized and/or group tutoring, face-to-face or virtual

Tutorials *on line*

Autonomous activities

Reading of texts and articles, study and creation of diagrams, summaries and conceptual assimilation of the contents. Advance preparation of seminars and dissection activities.

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.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Objective avaluation tipus test and/or short answers of the seminar progam contents	15%	1	0.04	1, 3, 15, 6, 7, 8, 4, 5, 9, 10, 14, 11, 16, 2, 17
Objective evaluation of content of the practical program	30%	2	0.08	3, 15, 4, 12, 11, 13, 16, 2, 17
Objective evaluation type test of the contents of the theoretical program	55%	3	0.12	1, 3, 15, 6, 7, 8, 4, 5, 9, 10, 14, 11, 16, 2

EVALUATION

The competences of the subject will be evaluated through three avaluative activities (UAB regulation) and a recovery exam. The date, time and classroom distribution each examen will be established in the UDCMB calendar.

FIRST PARTIAL:

evaluation of topics 1, 2, 3 and 4 of the theoretical classes program: objective test type of 30 questions with 4 answer options, only 1 valid, and incorrect answers are discounted at a rate of 1/3. The exam will have a maximum duration of 60'. The grade for this partial will be released if a minimum grade of 5.0 is obtained, or not released.

SECOND PARTIAL:

evaluation of topics 5, 6 and 7 of the theoretical classes program: objective test type of 30 questions with 4 answer options, only 1 valid, and incorrect answers are discounted at a rate of 1/3. The exam will have a maximum duration of 60'. The grade for this partial will be released if a minimum grade of 5.0 is obtained, or not released.

THIRD PARTIAL

evaluation of the contents of the seminar program: objective test of 20 questions with 4 answer options, only 1 valid, and incorrect answers are discounted by 1/3. To take this test, justified attendance at the face-to-face sessions of each of the seminars is required. Otherwise, the grade will be weighted by the number of sessions that are justified.

evaluation of the contents of the dissection practice program: structured objective test -practical exam- of 20 questions related to structures indicated in different anatomical preparations. Each question is score with 1 or 0 point, incorrect or blank answers are not discounted, but to reach a grade of 5,0 it is necessary to have 12 of the 20 points.

Calculation of the final grade of the subject for students who have released the two theory partials and in the third partial donot havea grade of 0,00 in the seminar part and/or in the practical part: first partial theory grade x 0,275 + second partial theory grade x 0.275 + seminar part grade of the third partial x 0.15 + practical part grade of the third partial x 0.30.

provided that the following requirements are met (without exceptions): a minimum grade of 4,00 in the theory test and not having a grade of 0,00 in the seminars test and/or in the practical exam.

RECOVERY EXAMEN

For students who must recover the first, second and/or third partial exams, and for students who wish to improve their grade in any of the three partial exams (giving up the grade previously obtained). The recovery exam will have the same structure (contents, format, number of questions, ..) and the same criteria and percentages applied in each partial evaluation.

According to the academic regulations of the medicine faculty and the UAB: To be eligible for the recovery process, the student should have been previously evaluated in a set of activities equalling at least two thirds of the final score of the subject. Students who do not complete both the theoretical and practical evaluation are considered NOT EVALUABLE, exhausting the registration rights for the subject.

Students repeating the subject who have justify attendance at the seminars and a minimum grade of 4.0 in the previous year can request, within the established deadlines, the validation of the grade for this part, which will be a 5.0, being exempted from attending the scheduled sessions.

The final grade of the subject will be a numerical expression, with one decimal, on the 0-10 scale and with the qualitative equivalence in accordance with the criteria of the UAB: fail, pass, good and merit (with the option of obtaining honour distinction if the mark is equal to or greater than 9,3).

Partials and/or recovery revisions: the place and dates will be announced through the UAB Campus Virtual. The revision process will always be done in accordance with current UAB regulations.

Single evaluation is not planned in this subject (agreement inmedicine faculty on March 30, 2023)

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Important:

Access to the Campus Virtual of the UAB

Access to the library's website of the UAB to colsult the available bibliography

Software

Is not necessary specific programari

Language list

Name	Group	Language	Semester	Turn
(PLAB) Practical laboratories	101	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	102	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	103	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	104	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	105	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	106	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	107	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	108	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	109	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	110	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	111	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	112	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	113	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	114	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	115	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	116	Catalan/Spanish	second semester	morning-mixed

(PLAB) Practical laboratories	117	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	118	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	119	Catalan/Spanish	second semester	morning-mixed
(PLAB) Practical laboratories	120	Catalan/Spanish	second semester	morning-mixed
(SEM) Seminars	101	Catalan/Spanish	second semester	morning-mixed
(SEM) Seminars	102	Catalan/Spanish	second semester	morning-mixed
(SEM) Seminars	103	Catalan/Spanish	second semester	morning-mixed
(SEM) Seminars	104	Catalan/Spanish	second semester	morning-mixed
(SEM) Seminars	105	Catalan/Spanish	second semester	morning-mixed
(SEM) Seminars	106	Catalan/Spanish	second semester	morning-mixed
(SEM) Seminars	107	Catalan/Spanish	second semester	morning-mixed
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(SEM) Seminars	112	Catalan/Spanish	second semester	morning-mixed
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(SEM) Seminars	114	Catalan/Spanish	second semester	morning-mixed
(SEM) Seminars	115	Catalan/Spanish	second semester	morning-mixed
(SEM) Seminars	116	Catalan/Spanish	second semester	morning-mixed
(SEM) Seminars	117	Catalan/Spanish	second semester	morning-mixed
(SEM) Seminars	118	Catalan/Spanish	second semester	morning-mixed
(SEM) Seminars	119	Catalan/Spanish	second semester	morning-mixed
(SEM) Seminars	120	Catalan/Spanish	second semester	morning-mixed
(TE) Theory	101	Spanish	second semester	afternoon
(TE) Theory	102	Spanish	second semester	afternoon
(TE) Theory	103	Spanish	second semester	afternoon
(TE) Theory	104	Spanish	second semester	afternoon