

Structure of the Human Body

Code: 101797
ECTS Credits: 6

Degree	Type	Year	Semester
2500891 Nursing	FB	1	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

Jordi Benet Català
Bernardo Castellano López
Joaquima Navarro Ferreté
Jordi Gascón Bayarri
Jordi Camps Polo
Santiago Rojas Codina
Albert Jimenez Obach

Prerequisites

As a subject of the first semester of the first year of the Nursing degree, there are no special requirements. However, it is advisable to have acquired the concepts included in the subjects coursed during pre-university studies that are related to cell biology, genetics and the knowledge of the human body.

Objectives and Contextualisation

CONTEXTUALIZATION:

This is a basic subject of the Nursing degree that is taught in the first semester of the first year. The knowledge and skills that are achieved constitute a relevant background required for Nursing practice and the research activity related to this profession.

GENERAL OBJECTIVES:

To acquire knowledge about anatomy, embryology, histology, cell biology and genetics that allow us to understand the structural organization of the human body.

To learn in a weighted way the characteristics of the human structure, which are applied in nursing practice.

To achieve the basic skills that allow the identification of the most relevant anatomical structures in nursing practice.

To know the scientific bases and methodologies of the sciences that study the structure of the human body.

SPECIFIC OBJECTIVES - LEARNING RESULTS FOR MODULES:

In a separate document, a list of the specific objectives of each of the topics is published on the Virtual Campus. These objectives limit the content that must be prepared for the subject's exam (learning outcomes).

Competences

- Develop independent learning strategies.
- Find, evaluate, organise and maintain information systems.
- Offer technical and professional health care and that this adequate for the health needs of the person being attended, in accordance with the current state of scientific knowledge at any time and levels of quality and safety established under the applicable legal and deontological rules.

Learning Outcomes

1. Develop independent learning strategies.
2. Find, evaluate, organise and maintain information systems.
3. Identify the composition and organization that sets the structure of the human body.
4. Integrate knowledge of the structure of organs and systems in the human body with their application to the nursing diagnoses and care plans.
5. Relate the macroscopic, microscopic structure of the human body and its molecular basis with congenital and acquired greater importance in nursing practice conditions.

Content

The subject is organized into three modules, each of which is in charge of professors of departmental units of the Faculty of Medicine, who have scientific and educational competences in the contents of each module.

The Anatomy and Human Embryology modules (coordinator Santiago Rojas) and the Histology module (coordinator Bernardo Castellano) are conveniently coordinated, so that a chronological schedule is established in the common themes that allows knowing the anatomy first and then the histology. The contents of Human Embryology are taught in virtual format.

The module of Cellular Biology and Genetics (coordinator Joaquima Navarro) focuses on the study of the basis of Cell Biology and genetics of a inherited disease, with a specific and different theme each year.

MODULE: CELLULAR BIOLOGY AND GENETICS

Topic:

1. Teamwork in Cell Biology and Genetics:

Objectives: To acquire basic knowledge of cell biology and the genetic bases and inheritance in certain hereditary diseases proposed, compared to the absence of illness, as well as assessing the role of nursing care in the treatment of these diseases.

Formative activity: Carry out a bibliographic work in groups, with tutorials in class, to follow-up on the acquisition of knowledge related to a specific hereditary disease. Several informative, preparatory and public presentation sessions of the work related to a genetic disease by group (three diseases per year) will be organized.

Face-to-face activity: In the first part there is a session to share the relative information to the subjects to develop for each disease (Introduction; Genetic basis, Cellular basis and role of the professional of nursing). In a second part a consensus session is held to draw up a synthetic and appropriate .ppt document relative to a hereditary disease studied. In a third part, optional, face-to-face or online, a Follow-up Tutorial is conducted to finalize the adequacy of the unique and homogeneous * .ppt document as well to prepare the presentation. This will be used in the fourth part of the activity or "Oral presentation". In this fourth part of the activity, those students who are asked to do so by the tutor must conduct a brief speech about the illness developed. After the exposure of each disease, a round of brief questions and a debate will take place.

Virtual activity: Students have the opportunity to carry out a parallel and voluntary activity, in addition to the face-to-face activity of the Cellular and Genetic Biology module, consisting on the study of other genetic diseases. Basically, this virtual activity is aimed at students who want to increase their knowledge regarding the contents of the Cell Biology and Genetics, using an alternative study strategy to the master class.

Oral presentation: Attendance and participation in the four parts of the activity, as well as attendance at the oral exhibition of the other illnesses performed in the same course is mandatory.

MODULE: HUMAN ANATOMY AND EMBRYOLOGY

Contents:

1. Generalities and locomotor apparatus
 - 1.1 General Osteology. General arthrology. General myology
 - 1.2 Axial and appendicular skeleton.
 - 1.3 Muscles of the head and trunk
 - 1.5 Muscles of the upper extremity
 - 1.6 Muscles of the lower extremity

2. Cardiovascular system
 - 2.1 Introduction to the study of the cardiovascular system
 - 2.2 Location of the heart. Mediastinum. Pericardium: fibrous and serous pericardium. Pericardial cavity.
Position of the heart
 - 2.3 Morphology of the heart
 - 2.3.1 Right and left atria.
 - 2.3.2 Right and left ventricles.
 - 2.3.3 Heart valves
 - 2.3.4 Coronary circulation
 - 2.3.5 Conduction system
 - 2.4 Arterial system
 - 2.4.1 Pulmonary artery
 - 2.4.2 Aorta and its branches.
 - 2.4.2.1 Arteries of the neck and head.
 - 2.4.2.2 Arteries of the upper limb.
 - 2.4.2.3 Arteries of the thorax.
 - 2.4.2.4 Arteries of the abdomen.
 - 2.4.2.5 Arteries of the lower limb.
 - 2.5 Venous System
 - 2.5.1 Superior cava system
 - 2.5.2 Lower cava system
 - 2.5.3 Porta system
 - 2.6 Lymphatic system

3. Nervous system
 - 3.1 General organization
 - 3.2 Meninges and cerebrospinal fluid
 - 3.3 Encephalon structure
 - 3.3.1 Brain cortex
 - 3.3.2 Subcortical white matter
 - 3.3.3 Basal ganglia

- 3.3.4 Limbic system
- 3.3.5 Diencephalon. Thalamus and hypothalamus.
- 3.3.6 Brain stem. Mesencephalon, pons and medulla oblongata.
- 3.3.7 Cerebellum
- 3.3.8 Cranial nerves
- 3.4 Spinal cord and spinal nerves
- 3.5 Autonomous nervous system. Sympathetic and parasympathetic divisions.
- 3.6 Sensorial organs
 - 3.6.1 Audition and equilibrium organs. External, middle and internal ear.
 - 3.6.2 Vision organs. Eyeball and its annexes.
- 4. Respiratory system
 - 4.1 Organization of the respiratory system
 - 4.2 Nose: Nasal pyramid and nostrils
 - 4.3 Larynx, trachea and main bronchi
 - 4.4 Lungs and pleura
- 5. Digestive system
 - 5.1 Organization of the digestive system
 - 5.2 Cephalic and cervical digestive system: Mouth. Pharynx. Cervical esophagus. Annex glands: Parotid, submandibular and sublingual glands.
 - 5.3 Thoracic digestive system. thoracic esophagus
 - 5.4 Abdominal-pelvic digestive system: Abdominal esophagus. Stomach. Small intestine: Duodenum, Jejunum and ileum. Large intestine: vermiform appendix, caecum, ascending colon, transverse colon, descending colon, sigmoid colon and rectum. Annex glands: Liver and pancreas (Spleen as associated non-digestive viscera)
 - 5.5 Abdominal-pelvic cavity: Peritoneal cavity and extraperitoneal spaces.
- 6. Urinary system
 - 6.1 Organization of the urinary system
 - 6.2 Kidney: Location. External structure Internal organization (cortex and medulla). Vascularization
 - 6.3 Urinary tract: Renal calyces (minor and major), renal pelvis, ureter, urinary bladder and urethra.
- 7. Reproductive device
 - 7.1 Male reproductive system.
 - 7.1.1. Scrotum and testicles.
 - 7.1.2. Epididymis Deferent duct.
 - 7.1.3. Annex glands: seminal vesicles and ejaculatory ducts, prostate and bulbourethral glands of Cowper.
 - 7.1.4. Penis. Male urethra.
 - 7.2 Female reproductive system
 - 7.2.1. Ovaries
 - 7.2.2. Uterine tubes and uterus (fundus, body and neck). Wide ligament. Round ligament. Vagina.
 - 7.2.3. External genital organs (vulva). Female urethra.
- 8. Endocrine system
 - 8.1 Location and morphology of the main endocrine glands:
 - 8.2.1. Pituitary gland (pituitary gland)
 - 8.2.2. Pineal gland (epiphysis)
 - 8.2.3. Thyroid gland.
 - 8.2.4. Parathyroid glands
 - 8.2.5. Suprarenal glands
- 9. Embryonic development (Autonomous study of material available on the virtual campus)

Practices:

In brackets is the labeling with which the calendar of the first semester is announced.

ES-A1. Anatomy of the locomotor system. Anatomy of the upper and lower limbs. Anatomy of the trunk and neck. Anatomy of the head. Study of dissected cadaveric material, bones, didactic models and identification of

structures with medical imaging techniques.

ES-A2. Heart and vascular system. Circulatory system. Study of dissected cadaveric material, didactic models and identification of structures with medical imaging techniques.

ES-A3. Anatomy of the nervous system and sensorial organs. Anatomy of the spinal cord and spinal nerves. Anatomy of the brain and cranial nerves. Anatomy of the meninges and the circulation of cerebrospinal fluid. Anatomy of the eyeball and its annexes. Anatomy of the external, middle and inner ear. Anatomy of the pituitary gland and pineal gland. Study of dissected cadaveric material, didactic models and identification of structures with medical imaging techniques.

ES-A4. Respiratory and digestive devices (cephalic, cervical and thoracic). Study of dissected cadaveric material, didactic models and identification of structures with medical imaging techniques.

ES-A5. Digestive system (abdominopelvic), urinary and reproductive system. Study of dissected cadaveric material, didactic models and identification of structures with medical imaging techniques.

ES-A6. Autonomous practice with the practical material: pending programming days before the practical exams. Complements the training of practices 1-5.

Methodology

DIRECTED ACTIVITIES:

Theoretical and practical activities of the Histology module: In the laboratory of Histology students acquire the knowledge of the microscopic structure of the tissues and organs of the human body, carrying out some Integrated activities where basic theoretical training and practical testing on preparations is done for each topic in the same session.

Theoretical classes of the Anatomy and Human Embryology module: They are intended for students to receive the Basic information about the anatomy of the human body, as well as the keys to its study.

Practices of the Anatomy and Human Embryology module: After the corresponding theoretical classes students work in the Dissection Room each topic using properly prepared cadaveric material, images from medical imaging techniques and anatomical and clinical models, with the objective to acquire skills in identifying and locating anatomical structures as well as checking the anatomical connotations of the most common instrumental techniques of nursing practice.

Classroom Seminars of the Cellular and Genetic Biology module: With the objective that the students achieve Basic knowledge of human genetics and inheritance relative to certain hereditary diseases, as well as for its cellular bases compared to the non-pathological situation, the students organized in teams, perform a problem-based learning activity. Several days sessions are organized (informative, preparatory and public presentation of the work).

SUPERVISED ACTIVITIES:

Face-to-face Tutorials of the Anatomy and Human Embryology module: Before the practical evaluations, all the material used in the practical sessions will be made available to the students.

In-classroom tutorials of the Histology module: For the subjects that the students have to learn autonomously, laboratory sessions are organized so that they can be completed in a practical way and with the help of the teacher.

Tutorials on the module of Cellular and Genetic Biology: In relation to the work of the module (see activities directed) teams have pre-established face-to-face tutorials.

Virtual activity of the Cellular and Genetic Biology module: The activity is carried out through Virtual Campus, where information is provided regarding different diseases (eg, Huntington's chorea, muscular dystrophy, phenylketonuria, cystic fibrosis, hemophilia, familial hypercholesterolemia, Pompe, Lynch syndrome, Turner syndrome, Cri du Chat syndrome, Down syndrome, simple bullous epidermolysis, progeria, Kartagener syndrome, etc.) studied in previous years. In addition, a questionnaire is provided, valid and indicative, which

facilitates the generic study of genetic diseases. It is also proposed to answer / study the defining points of any genetic disease, related to the four following sections: introduction, genetic basis, cellular basis and role of the nurse.

Virtual tutorials of the Anatomy and Human Embryology module: In the subjects that the students have to learn autonomously, the possibility of arranging tutorials through the Virtual Campus is offered, as well as virtual complementary activities that favor self-directed learning.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
CLASSROOM PRACTICES	16	0.64	3, 4
LABORATORY PRACTICES	10	0.4	3, 4
SPECIALIZED SEMINARS	3	0.12	2, 1, 3, 4
THEORY	21	0.84	3, 4
Type: Supervised			
VIRTUAL CLASSES	4	0.16	1, 3, 4, 5
Type: Autonomous			
PERSONAL STUDY	62	2.48	2, 1, 3, 4
PREPARATION OF DELIVERABLES	14	0.56	2, 1, 5
READING ARTICLES / RELEVANT REPORTS	12	0.48	2, 1, 3, 4

Assessment

1. Continuous evaluation

Each module is evaluated independently, although in the cases of the Anatomy and Embryology module Human and Histology module, the type-test assessments are done in the same session.

1.1. Evaluation of the Cellular and Genetic Biology Module (AMBC & G)

The evaluation of the bibliographic work in the Genetic Diseases team is done by qualifying the task of preparation and public presentation of a bibliographic review related to a disease of well-established genetic origin (AMBC & G 1).

The degree of assimilation of the knowledge obtained in the mentioned activity is evaluated in a test of 12-20 questions. With respect to the contents related to the developed diseases, the incorrect answers penalize 0.33 if it is the illness developed by the student (AMBC & G 2) and penalizes 0.20 if it is any of the other two diseases (AMBC & G 3).

The evaluation of the module of Cellular Biology and Genetics, based on the acquisition of the contents of the bibliographic works on genetic diseases developed during the academic, will be carried out after the date of the oral presentation. The used documents *.ppt will be posted on the Virtual Campus in order that all students can reinforce the basic contents exposed related to any of the three genetic diseases developed.

In addition, although it does not affect the final qualification, in the same test the degree of satisfaction of the students with respect to the activity carried out will be evaluated.

Virtual activity: Individually, the students that want to participate in this virtual activity, will receive, from the corresponding tutor, a qualitative assessment of the suitability of the study task carried out. To receive this assessment, you must have completed the entire questionnaire-guide proposed for the study of any of the suggested diseases.

Since this virtual activity contributes significantly to the knowledge of the basic topics of the Module of Cellular and Genetic Biology, the students that have participated may receive an increase in the qualification of the module Up to 25% maximum (maximum 0.25 / 1), always depending on the degree of adequacy of the work performed. Remember that the Cellular and Genetic Biology Module computes 10% (1/10) of the final mark of the subject.

1.2. Partial evaluations: Two tests are scheduled, each one includes a test (module Anatomy and Human Embryology and Histology Module) and a practical exam (module of Anatomy and Human Embryology).

1.2.1. Content of the tests:

First partial evaluation:

Module of Human Anatomy and Embryology: Test Exam (TA1): Themes from 1, 2 and 9.

Includes practical exam (PA1): Practices 1-2.

Histology Module: Test Exam (TH1): Issues 1-8.

Second partial evaluation:

Module of Anatomy and Human Embryology: Test Exam (TA2): Themes from 3 to 8.

Includes practical exam (PA2): Practices 3-5.

Module of Histology: Exam test (TH2): Lessons 9-16.

1.2.2. Characteristics of the tests:

Test exams (Anatomy and Human Embryology module and Histology module): The degree of knowledge and the ability to apply them in solving problems is valued. It consists of two test of 40 questions each (30 questions from the Anatomy and Human Embryology module and 10 questions from the Histology module), with five options and one valid (penalty of 0.25 points for each incorrect answer). Practical examinations (Anatomy and Human Embryology module): In these tests the students' ability to apply the knowledge and skills acquired in the practical sessions is valued. It consists of two practical exams with a format adapted to each practice.

1.2.3. Weight of the tests within each module (scale 0-10):

For the qualification of Anatomy and Human Embryology module (NMA): PA1 = 1.3 points; PA2=2.1 points; TA1 = 3.3 points; TA2 = 3.3 points.

For the qualification of the Cellular and Genetic Biology module (NMBC & G): AMBC & G 1 = 4 points; AMBC & G 2 = 4 points;

AMBC & G 3 = 2 points.

For the qualification of Histology module (NMH): TH1 = 5 points; TH2 = 5 points.

1.2.4. Weight of each module and its tests in the global qualification of the subject (scale 0-10):

NMA = 7.38 points (PA1 = 1 point; PA2 = 1.52 points; TA1 = 2.43 points; TA2 = 2.43 points).

NMBC & G = 1 point (AMBC & G1 = 0.4 points; AMBC & G 2 = 0.4 points; AMBC & G 3 = 0.2 points).

NMH = 1.62 points (TH1 = 0.81 points; TH2 = 0.81 points)

1. 3. Sufficiency mark:

1.3.1. Sufficiency mark of the modules: From the weighted sum of the own tests of each module, it is necessary to obtain a final mark equal to or greater than 5.0 (scale 0-10) to achieve sufficiency in each module.

1.3.2. Sufficiency mark of the subject: From the weighted sum of the qualifications of the modules, it is necessary obtain a final mark equal to or greater than 5.0 (scale 0-10) to achieve the sufficiency in the subject. However, the mark of each module must be greater than or equal to 4 (scale 0-10)

1.4. Evidence of recovery / Improvement of mark: It is only applicable to partial evaluations. Students who have not reached the sufficiency of the subject during the course or who, having obtained it, wish to improve their marks, can be examined again from those exams PA1, PA2, PA3, TA1, TA2, TH1 and / or TH2. The characteristics of the tests of the partial evaluations and of the recovery evaluations are the same.

2. Synthesis test: After the second enrollment students can choose to take a final exam (which is not a test) instead of the recovery test. In this test, the Anatomy and Human Embryology module and the Histology module (allsubjects and practices) are evaluated together. This test must be requested to the coordinator of the subject 7 days before the recovery test.

3. Final note: This qualification is the result of the weighted sum of the notes of the three modules. If proceeds, the corresponding marks of the course will be replaced by those obtained in the recovery tests if they represent an improvement. To calculate if the sufficiency in the subject is reached, it is necessary that each mark will be greater than or equal to 4 (scale from 0 to 10). Otherwise, only a maximum grade of 4 can be reached. Regarding the synthesis test, the joint assessment of the Anatomy and Human Embryology module and the Histology module will represent a maximum score of 9 points (scale from 0 to 10), which will be added to the weighted note of the cell and genetic biology module obtained previously (maximum of 1 point). In any case, the score resulting from this sum will constitute the final grade of the subject and will not be applicable separately to determine the mark of the modules.

4. Exemptions: After second enrollment, students who have reached a mark of 5 or higher (scale from 0 to 10) in the module in previous courses will be exempt from repeating this module. The previously obtained mark will be applied to the current course. This rule may be modified in the future, and while it is in force it will only be retroactive for courses prior to 2013-14 for the mark obtained in the Cell and Genetics Biology module. For the rest of the modules it will be only applied to marks obtained in the course 2012-13 or after that.

5. Non-evaluative: The student will be considered non-evaluative if the weight of the conducted tests represent less than 40%.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Evaluation written through objective tests: multiple response items (AMBC & G 2)	4%	0.5	0.02	2, 1, 3, 4
Evaluation written through objective tests: multiple response items (AMBC & G 3)	2%	0.5	0.02	2, 1, 3, 4
Evaluation written through objective tests: multiple response items (TA1 + TH1)	32,4%	1.5	0.06	2, 1, 3, 4
Evaluation written through objective tests: multiple response items (TA2 +	32,4%	1.5	0.06	2, 1, 3, 4,

TH2)				5
Oral communications	4%	2	0.08	2, 1, 3, 4
Practical type assessments: Exams related to structured objective performance and / or practical objectives structured examinations (PA1)	10,1%	1	0.04	1, 3, 4
Practical type assessments: Exams related to structured objective performance and / or practical objectives structured examinations (PA2)	15,1%	1	0.04	1, 3, 4

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