

Function of the Human Body II

Code: 106098
ECTS Credits: 9

Degree	Type	Year	Semester
2500891 Nursing	FB	1	A

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: Yes
Some groups entirely in Spanish: No

Teachers

Francisco Javier Muñoz Gall
Roser Velasco Fargas
Ignacio Delgado Martinez
Antonio Sánchez Hidalgo
Montserrat Durán Taberna
Ana Sánchez Corral
Raquel Moral Cabrera
Mireia Herrando Grabulosa

Prerequisites

It is convenient that the student has previously acquired basic knowledge and competences about the structure and organization of the human body, as well as the function of some of the body systems, particularly in the subject Image Diagnosis and Function of the Human Body I.

Objectives and Contextualisation

The subject Function of the Human Body II is annual and is given during the first year of the Nursing Degree. Dur

The general training objectives of the subject are:

- To learn the basic physiology of the excretory, digestive, endocrine-reproductive and nervous systems of the
- To acquire a complete and integrated view of the relationships of the different systems of the organism.

- To integrate the physiology knowledge with concepts learned in other basic subjects, that deal with the structure and function of the human body.
- To train the student to apply the physiological knowledge in deducing the consequences of the diseases.
- To acquire practical skills for performing the most frequent functional tests in the biomedical field.
- To acquire attitudes aimed at the promotion health and the prevention of disease, oriented to health medicine.

ATTENTION: The first semester will be performed in both face-to-face and virtual teaching, and the second semester will be performed in virtual teaching.

Competences

- Develop critical thinking and reasoning and communicate ideas effectively, both in the mother tongue and in other languages.
- Generate innovative and competitive proposals for research and professional activities.
- 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.
- 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.

Learning Outcomes

1. Acquire and use the necessary instruments for developing a critical and reflective attitude.
2. Analyse differences by sex and gender inequality in ethiology, anatomy, physiology. Pathologies, differential diagnosis, therapeutic options, pharmacological response, prognosis and nursing care.
3. Argue with scientific evidence selecting those most suitable nursing care for adequate professional attention to the health needs of people.
4. Demonstrate being able to carry out basic life support manoeuvres.
5. Enumerate the different types of microorganisms and parasites of interest to health.
6. Identify advanced life support manoeuvres.
7. Identify illnesses spread by germs and their relations to other socio-environmental factors.
8. Identify physiopathological processes and their manifestations, as well as the risk factors that determine states of health and illness during the different stages of the life cycle.
9. Identify the physiological functioning of the human body and the homeostatic mechanisms that regulate it.
10. Recognise situations of risk to life.
11. 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.

Content

Blood and hematopoietic organs

- Composition and functions of the blood
- Blood plasma
- Red blood cells

- Leukocytes
- Lymphocytes and immunity
- Blood groups
- Haemostasis

Respiratory system

- Introduction to respiratory physiology
- Ventilation mechanics
- Pulmonary ventilation
- Pulmonary circulation
- Gas exchange in lungs
- Blood transport of gases
- Regulation of breathing

Cardiovascular system

- Introduction to the cardio-vascular system
- Myocardium physiology
- Electrical activity of the heart
- Cardiac cycle
- Regulation of the cardiac function
- Normal hemodynamics of venous system
- Normal hemodynamics of the arterial system
- Microcirculation. Capillary and lymphatic system
- Mechanisms of blood flow control
- Regulation of blood pressure
- Circulation in special regions

Excretory system and body fluids

- Volume and composition of body fluids
- General functions of the kidney
- Function and hemodynamics of the glomerulus
- Assessment of the renal function

- Mechanisms of urine concentration
- Regulation of the volume and the osmolarity of body fluids
- Renal regulation of the acid-base equilibrium
- Physiology of the urinary pathways. Micturition

Digestive system

- Introduction to the digestive physiology
- Motility of the digestive tube
- Digestive secretions
- Digestion and absorption of nutrients

Endocrine system

- Introduction to endocrinology
- Hypothalamus and hypophysis
- Growth hormone system
- Prolactin system
- Hypothalamic-hypophyseal-thyroidal axis
- Hypothalamic-hypophyseal-suprarenal cortex axis
- Hypothalamic-hypophyseal-gonadal axes
- Endocrine pancreas
- Calcium metabolism regulatory hormones
- Adrenal cortex and medulla

Reproductive system

- Female reproductive system
- Male reproductive system
- Fecundation and gestation
- Childbirth and breastfeeding

Nervous system and sensory organs

- Introduction to neurophysiology
- Segmentary control of motion and posture
- Suprasegmentary control of motion and posture
- Nervous regulation of visceral functions
- Introduction to sensory physiology
- Somatic and visceral sensibility
- Gustative and olfactory sensibility
- Auditory and vestibular sensibility
- Visual sensibility
- Electrical cerebral activity. Awakeness and sleep
- Cognitive functions of the nervous system

Methodology

Theory classes:

Systematic explanation of the subject topics, giving relevance to the most important concepts. The student acquires the basic scientific knowledge of the subject in theory classes, which will be complemented by self-study of the topics of the subject program.

Laboratory practices:

Practical sessions for the observation and performance of procedures, the practical learning of physiological techniques and their application. Group work and active self-learning are promoted.

Case-based work:

Work on cases or problems of relevance for learning the subject. The knowledge acquired in theory classes, practices and personal study is applied to the resolution of practical cases presented using the moodle application.

Tutorial teaching:

Availability of tutorials for helping in the autonomous study of physiological concepts and application for the resolution of cases throughout the course.

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			
Laboratory practices (PLAB)	17	0.68	1, 2, 4, 9, 8, 6, 11, 10
Theory	50	2	1, 2, 3, 4, 5, 9, 8, 7, 6, 11, 10
Type: Supervised			
Problem-based cases (PAUL)	14	0.56	1, 2, 9, 8, 11, 10
Tutorials	2	0.08	1, 2, 3, 4, 5, 9, 8, 7, 6, 10
Type: Autonomous			
Personal study	108.5	4.34	1, 2, 3, 9, 8, 6, 11, 10
Preparation of works	20.5	0.82	1, 9, 8

Assessment

The evaluation of the subject will be based on the theoretical and practical syllabus contained in the Program.

The competences of the subject are evaluated by:

Continuous evaluation: throughout the course and consisting in:

- o Partial exams: Written evaluations by means of objective tests. These exams evaluate the understanding and
 - Block 1: corresponds to blood physiology, and the respiratory and cardiovascular systems. It represents the

- Block 2: corresponds to the excretory and digestive systems. It represents the 25% of the final grade of the

- Block 2: corresponds to the endocrine and nervous systems. It represents the 40% of the final grade of the

In order to pass the subject, it is necessary to obtain a minimum of 4.0 in each of these three blocks. Once this

Questionnaires with objective tests delivered during laboratory practices and case seminars, that represent the 25%

In order to pass the subject, it is necessary to obtain a minimum of 4.0 of the final mean of the laboratory prac

To pass the subject the student must obtain a minimum of 5.0 in the final grade (composed of 75% from partial ex

Recovery exam:

Students who have not passed the course through continuous evaluation throughout the course, should perform

According to the general regulations, to participate in the final recovery exam the students must have been prev

As in the continuous evaluation, the final theory exam grade will represent 75% of the final grade of the subject a

From the first enrollment, students who have not passed the course through continuous evaluation and who expli

The student who does not attend any of the scheduled exam sessions will be considered as "non-evaluable".

For each one of the exams of the subject a review period will be established, which will be duly announced.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Delivery of reports/ Written works	0-25%	0	0	1, 2, 5, 9, 8, 7, 11, 10
Practice: Written evaluation through objective tests: multiple-choice questions / restricted-choice essay tests	0-25%	5	0.2	1, 2, 3, 4, 5, 9, 8, 7, 6, 11, 10
Theory: Written evaluation through objective tests: multiple-choice questions / restricted-choice essay tests	75%	8	0.32	1, 2, 3, 5, 9, 8, 7, 11, 10

Bibliography

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- Berne R, Levy M. Fisiología. 6ª ed. Barcelona: Elsevier-Mosby; 2009.
- Costanzo LS. Fisiología. 5ª ed. Barcelona: Elsevier; 2014. Digital reference:
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Software

There is no need of specific programs for the development of this subject.