Information about the subject

Degree: Bachelor of Science Degree in Nursing

Faculty: Faculty of Medicine and Health Sciences

Code: 1211105 **Name:** Human Physiology

Credits: 6,00 **ECTS Year:** 1 **Semester:** 2

Module: Common basic training

Subject Matter: Physiology **Type:** Basic Formation

Field of knowledge: Health sciences

Department: Anatomy and Physiology

Type of learning: Classroom-based learning

Languages in which it is taught: English, Spanish

Lecturer/-s:

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Module organization

Common basic training

Subject Matter	ECTS	Subject	ECTS	Year/semester
Anatomy	6,00	Human and Functional Anatomy	6,00	1/1
Physiology	12,00	Human Physiology	6,00	1/2
		Physiopathology	6,00	2/1
Biochemestry	6,00	Clinical Biochemistry	6,00	1/1
Biostatistic	6,00	Biostatistics and Research Methodology	6,00	1/2
Psychology	6,00	Psychology of Care	6,00	1/1
Pharmacology	6,00	Pharmacology	6,00	2/1
Nutrition	6,00	Nutrition and Dietetics	6,00	2/1
ICT	4,50	ICT	4,50	This elective is not offered in the academic year 24/25
English	6,00	English	6,00	1/2
Life support	6,00	Emergency Care and Life Support	6,00	4/1

Recommended knowledge

No prerequisites specified

Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

R1 To acquire knowledge and identify the structure and function of the human body.

R2 To understand the molecular and physiological bases of cells, tissues, organs, and systems.

R3 To perform nursing techniques and/or procedures aimed at assessing the physiological status of the individual.

Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

BASIC		Weighting			
		1	2	3	4
CB1	Students have demonstrated possession and understanding of knowledge in an area of study that is at the core of general secondary education, and is often at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the cutting edge of their field of study.		x		
CB2	Students are able to apply their knowledge to their work or vocation in a professional way and possess the skills usually demonstrated by developing and defending arguments and solving problems within their area of study.		x		
CB3	Students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include reflection on relevant social, scientific or ethical issues.			x	
CB4	That students can convey information, ideas, problems and solutions to both specialized and non-specialized audiences.		x		
CB5	Students have developed those learning skills necessary to undertake further study with a high degree of autonomy.			x	

GENERAL		Weighting			
		1	2	3	4
6	To base interventions in nursing on scientific evidence and on the available means.				x
9	To promote healthy life spans, to promote taking care of each person by themselves and support the maintenance of preventive and therapeutic measures.	x			
16	To understand the systems of information related to health.	x			

SPECIFIC		Weighting			
		1	2	3	4
1b	To know and identify the structure and function of the human body.				x
2b	To understand the molecular and physiological basis of cells and tissues.				x
10b	To know pathophysiological processes and their manifestations and the risk factors that determine the health and disease states in the different stages of their vital cycle.	x			

Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
	75,00%	Theoretical written exams
	20,00%	Practical tests and works
	5,00%	Attendance and active participation

Observations

-In order to average the evaluation tests, it will be necessary to obtain a 50%-grade in the written test (3.5 points out of 7 that) and a 50%-grade in the workshops.

-The accomplishment of the workshops is MANDATORY.

-Criteria for awarding Honors: To obtain Excellent with Honors, it is requiered at least a 90%-grade in the course final evaluation

-Correct use of language will be assessed. Spelling mistakes, grammatical inconsistencies and “sms” language will be penalized with a 0.1 point reduction for a fault committed.

1. Final exam (70%):

The evaluation will be carried out at the end of the course, through a final test and may contain the following evaluation instruments:

Multiple-choice questions. These questions are corrected following the correction formula A- (E / n-1)
True or False questions. The ability of the student to justifiably reason the matter indirectly is assessed. A false claim not justified or badly justified does NOT penalize, it is simply not counted.
Questions to relate content
Development questions. The student's ability to summarize the information and reason the contents of the subject is assessed

The minimum grade to pass the written test will be 5 out of 10.

2. Mid-term exam (5%)
Halfway through the semester there will be a mid-term exam. This exam does not eliminate content for the final exam. The lecturer will let the students know in advance which chapters will be assessed in the mid-term. It is NOT mandatory.

3. Evaluation of workshops (15%)

The workshops of the course will consist of the technical realization and interpretation of a normal ECG and Renal Physiology, after the realization of each practice there will be an evaluation of the same through different exercises that contemplate the items that the student must have passed after the completion of the workshop. The completion of the workshops will be MANDATORY.

4. Autonomous classroom work (5%) and active student participation (5%).

Throughout the semester, several activities will be carried out concerning the level of understanding of each student.
It is NOT mandatory.

Comments regarding the evaluation of the subject:
- Students who do not pass the final exam will receive the grade of the exam only.
- Students who have passed the exam, but have not passed the workshops, will be given a grade of 4.5. In the second call they will only have to carry out the workshops they have pending in order to pass the subject.
- Students have the right to know the grades of all the assessment tools included in the guide at least one week before the written test and not on the date of the test review.

DEVELOPMENT of the subject in second and subsequent enrollments:
The subject will be included in the semester that is taught in the ordinary group. In the event that the number of students is less than 6, they will be included in the tutorials and monitoring of the teacher of the ordinary course and group tutorials will not be carried out.
The lecturer responsible for this group (second enrollment and subsequent ones), will contact the students through the virtual campus, to let them know the schedule of the corresponding lessons.
1. Final exam (80%):
The theoretical evaluation will be carried out at the end of the course, through a final theoretical test and may contain the following evaluation instruments:
Multiple-choice questions. These questions are corrected following the correction formula A- (E / n-1)
True or False questions. The ability of the student to justifiably reason the matter indirectly is assessed. A false claim not justified or badly justified does NOT penalize, it is simply not counted.
Questions to relate content
Development questions. The student's ability to summarize the information and reason the contents

of the subject is assessed

The minimum grade to pass the written test will be 5 out of 10.

2. Workshops (20%)
The grade of the part of the workshops of the previous course that is approved will be saved. In the case of not having passed the workshops the previous year, they will have to carry them out and be evaluated in the current course. The minimum qualification to pass the workshops is to obtain 5 out of 10

After each practice has been carried out, an evaluation will be carried out.

MENTION OF DISTINCTION:
In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.

Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

M1	Exposition of contents by the teacher, analysis of competencies, explanation and demonstration of abilities, skills and knowledge in the classroom.
M2	Group work sessions supervised by the teacher. Case study, diagnostic analysis, problems, field study, computer room, visits, data search, libraries, network, Internet, etc. Significant construction of knowledge through student interaction and activity.
M3	Supervised monographic sessions with shared participation.
M5	Activities developed in spaces and with specialized equipment.

M6 Personalized attention and in small groups. Period of instruction and/or orientation carried out by a tutor with the objective of reviewing and discussing the materials and topics presented in the classes, seminars, readings, completion of assignments, etc.

M7 Set of oral and/or written tests used in the initial, formative or summative evaluation of the student.

M8 Student study: Individual preparation of readings, essays, problem solving, seminars, papers, memoirs, etc. To expose or deliver in the theoretical classes, practical classes and/or small group tutorials. Work done on the university platform (www.plataforma.ucv.es).

M9 Group preparation of readings, essays, problem solving, papers, memoirs, etc. To present or deliver in the theoretical classes, practical classes, seminars and/or small group tutorials. Work done on the university platform (www.plataforma.ucv.es).

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
In-campus interactive lecture M1	R1, R2, R3	54,00	2,16
Practice Classes M2	R1, R2, R3	4,00	0,16
Evaluation M7	R1, R2, R3	2,00	0,08
TOTAL		**60,00**	**2,40**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
Student's self-employment M8		90,00	3,60
TOTAL		**90,00**	**3,60**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
GENERAL PHYSIOLOGY	Unit 1- Introduction to Physiological Sciences. Chemical composition of the human body. Genetic control of cell function and inheritance Unit 2.- Cell physiology. Resting potential, action potential. Muscle contraction
MAINTENANCE OF THE HUMAN BODY	Unit 3- Physiology of Blood. -Composition, functions, plasma proteins -Metabolism and function of the red blood cell. Hematopoiesis and erythrocateresis. -Blood types -Defensive systems. Immunity in the human body -Hemostasis and coagulation processes Unit 4- Physiology of the Cardiovascular system. Heart, blood vessels. Hemodynamics -Introduction. Automatism. The EKG -Cardiac cycle. Coronary circulation -Blood pressure. Pulse. Microcirculation. Venous and lymphatic circulation -Regulation of circulation Unit 5- Physiology of the Respiratory System -Introduction. Respiratory mechanics -Pulmonary ventilation. Gas exchange and transport -Regulation of respiration Unit 6- Electrolyte balance, acid-base balance. Physiology of the Urinary System -Distribution of fluid in the body -Renal function. Urination, acid-base balance Unit 7- Digestive System.

REGULATION SYSTEMS OF THE HUMAN BODY. CONTINUITY	Unit 8- Physiology of the Endocrine and Reproductive System -Introduction -Physiology of the hypothalamic-pituitary axis -Thyroid hormones -Endocrine pancreas -Kidney glands -Male reproductive system -Female reproductive system Unit 9- Physiology of the Nervous System. Sense organs -Nervous tissue and homeostasis. Nervous System Overview -The spinal cord and spinal nerves -The brain and cranial nerves -Autonomous Nervous System -Sensitive, motor and integrating system -Special systems
PRACTICALS	Practical 1 This is a workshop on the basic electrocardiogram consisting of a practical explanation of how the ECG works, basic cardiac electrophysiology, sinus rhythm, heart rate. After the workshop, students will be evaluated by means of different theoretical and practical exercises to check that they have acquired the established competences. Practical 2 This is a workshop on renal physiology in which a simulation is performed using the Physioex program, in addition to the analysis of a urine strip. The aim is that students understand the basic physiological processes related to urine formation. The evaluation is carried out by means of a checklist in which the acquisition of the established learning results is verified.

Temporary organization of learning:

Block of content	Number of sessions	Hours
GENERAL PHYSIOLOGY	3,00	6,00
MAINTENANCE OF THE HUMAN BODY	20,50	41,00
REGULATION SYSTEMS OF THE HUMAN BODY. CONTINUITY	4,00	8,00
PRACTICALS	2,50	5,00

References

Basic bibliography:
- Tortora- Derrickson (2018) Introduction to the human body. Principles of anatomy and physiology. Panamericana. 15th ed.
- Fox SI (2017) Human Physiology. McGraw-Hill. 14th ed.
- Guyton-Hall (2016). Texbook of medical physiology. Elsevier Sauders. 13th ed.
-Susan E Mulroney; Adam K. Myers (2011). Netter Fundamentals of Physiology. Elsevier-Masson. 1st Ed
- General Physiology Web. Available at: https://www.webfisio.es/