

## **IDENTIFICATION DETAILS**

Degree:	Pharmacy			
Scope	Pharmacy			
Faculty/School:	Experimental Sciences			
Course:	PHYSIOLOGY			
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Туре:	Basic Training		ECTS credits:	9
		_		
Year:	2		Code:	2529
Teaching period:	Third semester			
Subject:	Physiology			
Module:	Medicine and Pharmacology			
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Teaching type:	Classroom-based			
		-		
Language:	Spanish			
		-		
Total number of student study hours:	225			

#### SUBJECT DESCRIPTION

The subject of Physiology imparts basic knowledge about the structures of organs and systems in humans, as well as their regulation.

In this course we will delve into the organic structural study of the human body, as well as the analysis of the functions of these organs and how they are regulated and coordinated with each other, mainly under normal conditions but also in the face of some pathological alterations or deficiencies.

GOAL

Physiology integrates the individual functions of all the different cells, tissues and organs of the body into a functional whole, the human body. Life depends on this global function, so it also involves understanding how the different organs and systems coordinate to maintain an adequate function of the organism as a whole. Physiology allows students to have basic knowledge about the functions of the organs and systems of the human body and their regulation, highlighting some differences with animals.

#### PRIOR KNOWLEDGE

Students must have basic knowledge in physics, chemistry and cell biology from the previous stage of the degree. In addition, basic knowledge in general biology, anatomy, organization of the human body and its systems will be necessary.

## **COURSE SYLLABUS**

Topic 1: Introduction to Physiology. Homeostasis.

Block I: Regulatory systems of the human body.

Topic 2: The Nervous System.

Theme 3: Generating and conducting action potentials.

Theme 4: Synaptic transmission.

Topic 5: Central Nervous System. Peripheral Nervous System.

Theme 6: Organization of motor function.

Theme 7: The sense organs.

Topic 8: Endocrine System.

Block II: Support and movement.

Theme 9: The skin and its attachments. Structure and functions of the skin.

Topic 10: Physiology of the skeletal system. Bones and bone tissue. Bone growth. Remodeling.

Topic 11: Physiology of the muscular system. Skeletal muscle. Heart muscle. Smooth muscle.

Block III: Transportation and Defense.

Topic 12: Cardiovascular Physiology I: Heart.

Topic 13: Cardiovascular Physiology II: Blood Circulation.

Topic 14: Blood I. Immune system.

Topic 15: Blood II Block IV: Respiratory system and digestive system.

Topic 16: Respiratory physiology.

Topic 17: Transport of oxygen and carbon dioxide.

Topic 18: Digestive physiology.

Topic 19: Secretory functions of the digestive tract.

Block V: Urinary system and reproductive system.

Topic 20: Renal Physiology.

Topic 21: Potassium, Calcium and Phosphate Homeostasis.

Topic 22: Role of the kidneys in regulating acid-base balance.

Theme 23: Physiology of the male and female reproductive system.

## **EDUCATION ACTIVITIES**

AFP1. THEORY CLASSES The fundamental purpose is to provide structured information in a way that facilitates the understanding of the content of the subject. The most important and difficult aspects of the syllabus will be addressed, leaving for the student's personal work those who can approach it based on the contents presented during classes. The teacher will use PowerPoint presentations and explanatory videos as support material during classes. AFP2. PRACTICAL CLASSES Laboratory work sessions in groups supervised by the teacher. AFP3. EXERCISE CLASSES AND PROBLEMS, AND AFP4. SEMINARS AND/OR EXHIBITION OF WORKS, Students will carry out, under the supervision of the teacher, different activities related to the subject: problems, Flipped classroom and cooperative learning. In addition, students will take a series of questionnaires, prepared by the subject teacher himself, to deepen the contents and clarify the most important aspects of Physiology. These activities will be evaluated as part of the continuous evaluation.AFP5. Tutorials in person or through email or video conference, for the resolution of doubts. The tutorial schedule will be informed by the teacher at the beginning of the subject.AFP6. CONDUCTING AN EXAM

AFNP1. STUDY OF THEORY, EXERCISES AND PROBLEMS AFNP2 .PREPARATION AND STUDY OF PRACTICES AFNP3. PREPARATION OF WORKS AFNP4. TUTORING PREPARATION

#### DISTRIBUTION OF WORK TIME

TEACHER-LED TRAINING ACTIVITIES	INDIVIDUAL WORK		
90 Horas	135 Horas		

#### **Cross Skills**

To nurture an attitude of intellectual curiosity and a quest for truth in all areas of life.

To be able to approach a subject by means of rigorous, profound and comprehensive thought.

To be able to apply the theoretical knowledge learnt in the of solving problems and practical cases linked to the various subjects.

## LEARNING RESULTS

Know and understand the structure and function of the human body, as well as the general mechanisms of disease, molecular, structural and functional alterations, syndromic expression and therapeutic tools to restore health.

#### SPECIFIC LEARNING RESULTS

Describe the functioning of the human body (cellular physiology and integration and communication systems), the destination to which the actions of drugs are directed.

Explain physiological processes by analyzing their biological meaning, their description, their regulation and integration at different levels of organization, in a state of health.

Establish the basis for understanding changes in physiological processes as a form of adaptation to a changing environment.

Compile the bases that allow us to understand the activity of the various drugs on the body.

# LEARNING APPRAISAL SYSTEM

ORDINARY EVALUATION SYSTEMThis is the priority evaluation system for the subject. This system is based on continuous evaluation, taking into account that attendance at all classes, regardless of their nature, is mandatory. The evaluation of the degree of achievement of the objectives and acquisition of competencies in Physiology, will be carried out taking into account the following aspects:1-.Qualification of the theory exam (SE1-written or oral, developmental, short answer or test-type tests): 60% of the final grade. An exam will be taken based on the content of the subject. To pass this part of the theory, it will be necessary to obtain a minimum score of 5.00 out of 10.00.2. Qualification of practical laboratory classes (SE8-Attendance and participation in face-to-face activities in the laboratory): 15% of the final grade. To pass the subject, it is necessary to complete and approve the internships. The practices will be evaluated by the teacher responsible for the practices through a specific exam for each practice, the final internship grade being the weighted average of the grades obtained in each practice. To pass this part of the internship, it will be necessary to obtain a minimum score of 5.00 out of 10.00.3-.Continuous evaluation: 25% of the final grade. It will take into account: SE4-Attendance and participation in face-to-face activities in the classroom (5%), SE2-carrying out daily activities and exercises (5%), as well as SE3-individual and group work (15%).

TO PASS THE COURSE, IT WILL BE ESSENTIAL TO HAVE COMPLETED ALL THE PRACTICES AND SEMINARS, OBTAIN AT LEAST 50% OF THE MAXIMUM SCORE OF THE THEORY EXAM AND THE PRACTICE EXAM, AND OBTAIN AN OVERALL SCORE HIGHER THAN OR EQUAL TO 5. Attendance at all practical sessions and seminars (regardless of where they take place: laboratory, classroom, computer room, simulation tunnel, remote etc.) is mandatory. The unjustified absence of any of these sessions leads to the loss of the right to the evaluation of practices in the ordinary call and a suspension of the subject. Students in this situation should immediately contact the teacher. IN THE EXTRAORDINARY CALL, THE SAME EVALUATION SYSTEM IS MAINTAINED, KEEPING THE SCORE FOR THE THEORY, PRACTICE OR CONTINUOUS EVALUATION TEST IF THEY HAVE BEEN PASSED.

ALTERNATIVE EVALUATION SYSTEM This system is intended for repeat students who do not take advantage of the ordinary evaluation system because they are unable to attend classes on a regular basis. Students in second or successive enrollments should contact the teacher to request to take advantage of this system. In this case, the evaluation systems and their weighting will be as follows:

1. Theory exam score (SE1-written or oral, developmental, short answer or test-type tests): 60% of the final grade. This exam must be performed in the same way as in the ordinary evaluation system, and must obtain a minimum score of 5.00 out of 10.00.

2-. Qualification of practical laboratory classes (SE8-Attendance and participation in face-to-face activities in the laboratory): 15% of the final grade. If you have been approved, the grade from the previous course will be saved.
3. Continuous evaluation: 25% of the final grade. The score of the seminars (15%) and the periodic activities (10%) that will evaluate the asynchronous follow-up of the subject will be taken into account.

Plagiarism, as well as the use of illegitimate means in evaluation tests, will be sanctioned in accordance with those established in the Evaluation Regulations and the University's Coexistence Regulations.

# ETHICAL AND RESPONSIBLE USE OF ARTIFICIAL INTELLIGENCE

1.- The use of any Artificial Intelligence (AI) system or service shall be determined by the lecturer, and may only be used in the manner and under the conditions indicated by them. In all cases, its use must comply with the following principles:

a) The use of AI systems or services must be accompanied by critical reflection on the part of the student regarding their impact and/or limitations in the development of the assigned task or project.

b) The selection of AI systems or services must be justified, explaining their advantages over other tools or methods of obtaining information. The chosen model and the version of AI used must be described in as much detail as possible.

c) The student must appropriately cite the use of AI systems or services, specifying the parts of the work where they were used and describing the creative process followed. The use of citation formats and usage examples may be consulted on the Library website(<u>https://www.ufv.es/gestion-de-la-informacion\_biblioteca/</u>).

d) The results obtained through AI systems or services must always be verified. As the author, the student is responsible for their work and for the legitimacy of the sources used.

2.- In all cases, the use of AI systems or services must always respect the principles of responsible and ethical use upheld by the university, as outlined in the <u>Guide for the Responsible Use of Artificial Intelligence in Studies at UFV</u>. Additionally, the lecturer may request other types of individual commitments from the student when deemed necessary.

3.- Without prejudice to the above, in cases of doubt regarding the ethical and responsible use of any AI system or service, the lecturer may require an oral presentation of any assignment or partial submission. This oral evaluation shall take precedence over any other form of assessment outlined in the Teaching Guide. In this oral defense, the student must demonstrate knowledge of the subject, justify their decisions, and explain the development of their work.

# **BIBLIOGRAPHY AND OTHER RESOURCES**

#### Basic

Gerard J. Tortora, Bryan Derrickson. Principles of Anatomy and Physiology/15th ed. Buenos Aires [etc.] : Editorial Panamericana, 2018.

# Additional

HALL, John E. Guyton and Hall: Treatise on Medical Physiology/13th ed. Barcelona:Elsevier, 2016. (HALL, John E. Guyton and Hall: Treatise on Medical Physiology/13th ed. Barcelona:Elsevier, 2016. , ||Silverthorn, Dee Unglaub (1948-) Human Physiology: An Integrated Approach/8th ed. Madrid: Editorial Medica Panamericana, 2019. )