

IDENTIFICATION DETAILS

Degree:	Pharmacy			
Scope	Pharmacy			
Faculty/School:	Experimental Sciences			
Course:	ANATOMY			
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Туре:	Compulsory		ECTS credits:	6
Year:	1		Code:	2517
Teaching period:	Second semester			
Subject:	Human Anatomy			
Module:	Medicine and Pharmacology			
Teaching type:	Classroom-based			
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Language:	Spanish			
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Total number of student study hours:	150			

SUBJECT DESCRIPTION

Anatomy reviews the structures and organs that make up the different systems and devices, both individually and their interrelationships.

The study of Anatomy gives students a technical language and a general knowledge of the human body. It is of essential importance in learning other subsequent subjects such as physiology and concepts of human pathology. The knowledge acquired in the subject not only allows any student to know and practice their profession correctly, but it also provides them with the possibility of making contributions and innovation in their field by knowing the fundamentals that support therapeutic and diagnostic approaches in human disease.

Anatomy is a 6-credit subject, belonging to the basic training module and which will be taught during the 2nd

semester. It is intended that the student knows the general structure of the human body and its different systems. The study of the different organs and systems will be carried out with the general objective of knowing their role in the integral function of the human body. This subject, in addition to serving as an indispensable basis for other subjects taught in the career, seeks to provide students with terminological tools that will allow them to delve into understanding and searching for information in all branches that touch on human health. Another objective of this course is to help students to systematize the knowledge acquired, giving them a context to place in the human body the effects of those drugs or interventions typical of the pharmacist's career

GOAL

Provide the anatomical and methodological knowledge that allows the structural and functional correlation necessary for the understanding of human physiology and pathology.

The specific aims of the subject are:

Provide basic knowledge of the organization of the human body into structurally and functionally correlated organs and systems.

Provide students with the terminological tools necessary to understand medical information related to human anatomy and promote the skills of communicating medical information with correctness.

Promote the bibliographic search in anatomical atlases and acquire the ability to correlate this information in practice.

PRIOR KNOWLEDGE

The minimum level of knowledge recommended for taking this subject is that provided by the subjects of the first semester (Cytology and molecular bases of the cell) in the subject of General Biology.

COURSE SYLLABUS

The study of the subject is divided into 5 units where the different systems are grouped together, and a functional anatomical correlation is established for each unit.

It is emphasized that the knowledge received will be indispensable for taking related subjects in later years. The course is fully adapted to the needs of the pharmacist, whether in the area of pharmaceutical care or research.

The concepts will be continuously reinforced with the presentation of practical assumptions that show the usefulness of the content for the exercise of the profession.

Theory

Unit 1: Support and Movement

1. Introduction to the human body. Levels of organization. Anatomical terms.

2. Skeletal system. The axial skeleton. The appendicular skeleton. Joints.

3. Muscular system. Types of skeletal muscles, introduction to the histology and embryology of muscle tissue. Main skeletal muscles and their functional groups.

4. Tasks correlated with each practice that are aimed at systematizing the study of the unit.

Unit 2: Regulatory systems of the human body.

1. Introduction to the histology and embryology of the nervous system

Organization of the nervous system. Central and Peripheral Nervous System. Overview of the topography of the effects of pathological structural alterations and structures with pharmacodynamic importance (blood-brain barrier).
Vegetative nervous system, structure and overview of the manifestations caused by its pathological or pharmacological alteration.

4. Endocrine system. Location and functions of the different glands. Study of the system from the perspective of anatomy applied to related pathologies and hormonal products available in pharmacies.

5. Seminars on the sense organs, overview of the structure with emphasis on the applied anatomy of the most frequently altered structures.

6. Tasks correlated with each practice that are aimed at systematizing the study of the unit.

Unit 3: Transportation and Defense

1. Introduction to the embryology of the viscera and thoracoabdominal organs.

2. Circulatory system: The heart. Anatomy of the heart and great vessels. Arteries and veins, the most common structural pathologies in the venous and arterial system. Importance of system structure for pharmacodynamics, overview of circulation.

3. Lymphatic system, structure of the lymphatic drainage system.

4. Tasks correlated with each practice that are aimed at systematizing the study of the unit.

Unit 4: Respiration, Nutrition and Excretion

1. Respiratory system: Anatomy of the respiratory system: nose, pharynx, larynx, trachea, bronchi and lungs. Emphasize the structures where the most common pathologies of this system originate. Brief histology of the alveolus capillary membrane.

Digestive system: General information. Anatomical characteristics of the digestive system, accessory glands and functional anatomical correlation. Emphasis on the study of this system as the main route of drug administration. The anatomical data of greatest interest are indicated for understanding physiology and pathophysiology in higher education courses. Brief histology of the intestinal absorption membrane.
Tasks correlated with each practice that are aimed at systematizing the study of the unit.

Unit 5: The urinary system and the reproductive system.

1. Urinary system: Macroscopic and microscopic anatomy of the kidneys. Urinary tract. Importance of the structures studied for renal function, emphasis on the importance of structural integrity for drug excretion. Basic histology of the glomerulus.

2. Reproductive system: Male and female reproductive system Overview.

3. Tasks correlated with each practice that are aimed at systematizing the study of the unit.

Practices:

Practice 1: Basic Anatomical Terminology, Vertebrae and Skull

Practice 2: Extremities (bones and major muscles) and chest cavity

Practice 3: Central and Peripheral Nervous System and Special Senses (Eye and Ear)

Practice 4: Cardiovascular, Respiratory and Genitourinary Systems

Practice 5: Digestive system and endocrine system. Review

For more information, contact the course coordinator or teacher.

EDUCATION ACTIVITIES

Learning is based both on face-to-face activities (theory classes, practical classes and seminars or exhibition of works) as well as non-face-to-face activities (studying and carrying out tasks or preparing work). Student participation and task fulfillment allows for a continuous evaluation of the learning process.

(AFP1) Theory classes: The methodology will consist of the review of material prepared and structured by the teacher, which will then be reviewed in an expository class by the teacher in which the key aspects of each topic will be addressed. Students will be presented with essential and organized information from various sources and will be provided with a reference text that will be accessible in the virtual classroom to complement the study. Situations will be created where the active participation of students is indispensable. An active learning paradigm will be promoted where the student's work meets the needs that arise from the questions posed by the teacher. It is not mandatory for the teacher to provide slides, each student is responsible for collecting the necessary notes or information among the materials provided by the teacher. The virtual classroom will be used to provide all the complementary bibliographic information. Learning depends on participation in all the proposed activities and the student's independent study.

(AFP2) Practical Classes: Depending on the unit, they will be done with models, anatomical sheets or other models. They are intended to base the knowledge acquired on the theoretical class with which they will be integrated if possible. Each student will have at least one practice in the anatomy dissection room for which a script will be provided.

(AFP4) Seminars or exhibition of works: The main methodology is presentation by the student. Research and

group development of a topic that is presented during seminar hours using creative methods aimed at effectively communicating the information collected. The content of the seminars is part of the information provided in theoretical classes. Emphasis will be placed on those topics of clinical or practical application that enrich the student's training. These seminars are used to reinforce cooperation, leadership and communication skills. The student must make use of the technical language they have acquired in the course.

(AFP5) Tutoring: The tutoring schedule will be informed by the teacher at the beginning of the course. Students will be served as required, except for the mandatory tutoring sessions established for each student:

- Regulated group tutoring throughout the semester in order to monitor the development of students working in groups.

- Individual tutoring to customize the student's educational interests and answer questions.

(AFP6) Taking Exams: Carrying out different tests to verify that you have acquired the knowledge, skills and attitudes of the corresponding competencies. These are not necessarily partial exams, they can be individualized oral evaluation during class, anonymous evaluation sessions in class or surprise tests of previously reviewed topics.

(AFNP2) Preparation and study of practices: The student will have homework related to each theoretical and practical unit (tasks). This work is essential for the systematization of the information received in classes and practices. The tasks constitute fundamental material for the study, they consist of diagrams and anatomical drawings that promote learning in other ways. The tasks must be delivered through the virtual classroom within the maximum period set for each one. When the delivery deadline ends, if it is necessary to outline the information, the teacher will post the correction later to facilitate the subsequent study.

(AFNP3) Preparation of papers: The student will be responsible for the organization of their work and for the acquisition of knowledge, adapting the organization of their time to the study and review of the subject as well as to the preparation of works.

DISTRIBUTION OF WORK TIME

TEACHER-LED TRAINING ACTIVITIES	INDIVIDUAL WORK		
67 Horas	83 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 assess knowledge acquired.

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

Schematically synthesize the structure and organization at the macroscopic level of the different tissues that make up the human body.

Explain the importance of knowledge of human anatomy for the study of the absorption, distribution, metabolism, elimination and effects of drugs and medications.

Appropriately use the bibliographic material specific to the subject as anatomical atlases oriented by sections and plans.

Handle corpses and anatomical parts correctly for practices with respect for human beings.

List the main macroscopic and microscopic structures that make up each of the organs, apparatus and systems of the human body.

Understand the morphology and microscopic structure of the different human cellular components and compartments.

Know the microscopic structure and organization of the tissues that make up the human body.

Know the morphology and structure of the organs, apparatus and systems of the human body, both at the macroscopic and microscopic levels.

Understanding the absorption, distribution, metabolism, elimination, and effects of drugs and medications.

LEARNING APPRAISAL SYSTEM

The evaluation will be continuous where the participation of the student and the practical demonstration that they have acquired the skills and knowledge set out in the objectives of the subject will be paramount. This will be complemented by the final evaluation of both the practical and theoretical subject.

CONTINUOUS EVALUATION. It is equivalent to 50% of the final grade and consists of:

- SE2- Daily activities and exercises (10 points): All assigned tasks will score on 10 points. Online questionnaires (5 points) are also part of this qualification.

- SE3- Individual or group work - seminars- (20 points): You must do teamwork. It will be rated on 10 points.

- IF 8. Attendance and participation in face-to-face activities in the laboratory (15 points) At the end of the year, the final grade for practical tasks is the sum of the average of all practice tasks (5 points). A second part consists of

the preparation of a graphic atlas throughout the course (10 points).

- IF 4. Attendance and participation in face-to-face classroom activities: (5 points). The weighting of the final continuous evaluation grade will be 50% of the final grade.

FINAL EVALUATION. It is equivalent to 50% of the final grade and consists of:

ISE1. THEORETICAL EXAM Written multiple choice evaluation Total 50%: 40% theoretical and 10% practical. It will be necessary to obtain a minimum score of 5/10 in each of them to average with the rest of the sections. FINAL GRADE AND PASSING OF THE SUBJECT: To pass the subject, a minimum of 5/10 must be obtained in the total grade (continuous evaluation + exams), which is only averaged once each of the parts of the exam has been passed.

STUDENTS WITH SECOND ENROLLMENT OR WITH A WAIVER. Students must demonstrate the acquisition of competencies acquired in continuous evaluation. Students in second enrollment do not maintain any grades from their first enrollment (neither continuous evaluation nor exams) Students in the second or subsequent enrollment must contact the teacher to request to take advantage of this system and must communicate by email to the teacher before 10 calendar days of the start of classes in the subject, which of the following continuous evaluation options they choose:

Option 1. Integrate into the usual evaluation system, being exempt from attending face-to-face classes, but having to submit all individual tasks and group seminars (the group seminar can be replaced by an individual written work in this case if they so wish).

Option 2. Take a complementary exam or work with a value of 50% that includes continuous evaluation activities, this exam has a maximum score of 50 points and does not have a minimum to pass, but the sum with the other two exams (once passed with 5/10) must allow obtaining a minimum total score of 5/10 to pass the subject. "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

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

THIBODEAU, Gary A. Anatomy and Physiology/6th ed. Madrid:Elsevier, 2010.

NETTER, Frank H. Atlas of Human Anatomy/7th ed. Barcelona:Elsevier, 2019.