COURSE DATA

DATA SUBJECT

Code: 34069
Name: Human Anatomy
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
1201 - Degree in Pharmacy	Facultat de Farmàcia i Ciències de L'alimentació	1	Second quarter
1211 - Double Degree in Pharmacy and Human Nutrition and Dietetics	Facultat de Farmàcia i Ciències de L'alimentació	1	Second quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1201 - Degree in Pharmacy	Human anatomy	BASIC
1211 - Double Degree in Pharmacy and Human Nutrition and Dietetics	Asignaturas obligatorias del PDG Farmacia-Nutrición Humana y Dietética	COMPULSORY

COORDINATION

CERVERA FERRI ANA PILAR

SUMMARY

The information about anatomy of the human body will be explained in the subject Human Anatomy, taught in year one, second semester.

Theory contents will be delivered through lectures. Once the theory units listed in the syllabus have been presented in class, there will be two thematic seminars to get a global idea of the subject and also to focus on clinical aspects for students to get a view of its practical application. Seminars will also serve to define and discuss the clinical aspects that students must work on in tutorials.

Practical classes will also be taught, in the laboratory, making use of videos, anatomy atlas images and histological images, and making use of the practice material, such as organ models for the identification and recognition of anatomical structures. Students perform problem solving tasks using online self-assessment platforms. For this, students are organised in groups, and in each practice one of the members will be the activity monitor and will explain the contents of the practice and supervise the completion of the work and the interpretation of the results.

Based on the theory and practical classes, the lecturer will suggest group projects on some of the topics of interest. Students will prepare the projects using literature reviews and they will present their projects in front of the lecturer and the rest of the students, discussing the questions proposed in the group tutorials and resolving related doubts.

The subject is fundamentally oriented to teach human anatomy and related clinical aspects. It is intended that, based on particular cases, students draw conclusions for subsequent professional application. The focus of the Human Anatomy subject fits within some of the Sustainable Development Goals (SDGs) promoted by the United Nations and contemplated in the 2030 Agenda, especially SDGs 3 (Health) and 4 (Education) in which our students and future pharmaceutical graduates would be more involved. The first 6 SDGs address the impact of disease in the context of the global population. Among them, it is worth highlighting responsible health management for guaranteeing the sustainability of the health system, the promotion of community health (objective 3: good health and well-being, objective 10: reduction of inequalities) and quality education (objective 4). In addition, the subject promotes interdisciplinary work (objective 17). All this is essential to face the challenges related to health and thus achieve a more sustainable world, with a better future for everyone. Therefore, students will be able to draw relevant conclusions for their subsequent professional role.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

COMPETENCES / LEARNING OUTCOMES

1201 - Degree in Pharmacy

Act with autonomy in learning, making informed decisions in different contexts, issuing judgements based on experimentation and analysis, and transferring knowledge to new situations.

Apply such knowledge to the professional world, contributing to the development of human rights, democratic principles, principles of equality between women and men, solidarity, environmental protection and promotion of a culture of peace with a gender pe

Collaborate effectively in work teams, assuming responsibilities and leadership roles and contributing to collective improvement and development.

Contribute to the design, development and implementation of solutions that respond to social demands, taking into account the Sustainable Development Goals as a reference.

Demonstrate critical and self-critical thinking in the field of the degree programme, considering aspects such as professional ethics, moral values and the social implications of the different activities carried out.

Develop skills to update knowledge and undertake further studies, including pharmaceutical specialisation, scientific research, technological development and teaching.

Know anatomical terminology.

Know and understand, within the field of the degree programme, gender inequalities in society; integrate different needs and preferences based on sex and gender into the design of solutions and problem solving.

Know how to communicate effectively, both orally and in writing, adapting to the characteristics of the situation and the audience.

Know how to interpret, evaluate and communicate relevant data in the different areas of pharmaceutical activity, using information and communication technologies.

Know the organs, systems and apparatuses of the human body.

Know the relations of the structures of the nervous system.

Know the relations of the viscera.

Know the structures of the nervous system.

Know the tissues.

Learn about the formation of the embryo in its early stages.

Possess and understand knowledge in the different areas of study included in pharmacist training.

Propose creative and innovative solutions to complex situations or problems within the field of knowledge, to respond to diverse professional and social needs.

Recognise human body bones.

Recognise human body viscera.

Transmit ideas, analyse problems and solve them with critical spirit, acquiring teamwork skills and assuming leadership when appropriate.

DESCRIPTION OF CONTENTS

1. INTRODUCTION

Unit 1. Anatomy: concept, historical remembers. Plan of the subject. Organization of the human body. Terminology, situation, planes and sections. Concept of organs, apparatus and systems.

2. EMBRYOLOGY AND HISTOLOGY MODULE

Unit 2. Gametogenesis. Fertilization. Stages of morula and blastula.

Unit 3. Gastrula and Neurula. Somitas: Formation of the members.
Unit 4. Human anidation. Placenta and fetal annexes.
Unit 5. Tissues: concept, classification and types. Epithelial tissue. Glandular tissue.
Unit 6. Supporting tissues: conjunctive tissue, cartilaginous, adipose and bone. Muscular tissue.

3. NERVOUS SYSTEM MODULE

Topic 7. Nervous tissue. Structural organization. Meninges.

Topic 8. Central and peripheral nervous system. Central nervous system. I: study of the spinal cord.

Topic 9. Central nervous system II: Study of the brain.

Topic 10. Peripheral nervous system: Spinal and cranial nerves. Autonomic nervous system: sympathetic and parasympathetic

Item 11. Organs of the senses I: Touch, taste and smell.

Topic 12. Sense Organs II: Sight and Hearing

Topic 13. Neuroendocrine system.

4. MUSCLE-SKELETAL SISTEM MODULE

Item 14. Types of bones. Types of joints. Types of diarthrosis.

Topic 15. Osteoarthrology of the skull and spine.

Item 16. Neuromuscular systems of the back.

Item 17. Thorax: ribs and sternum. Thoracic musculature. Diaphragm.

Item 18. Abdominal muscles. Inguinal canal. Hernias.

Item 19. Skeletons. Lower limb and upper limb.

Item 20. Neuromuscular systems of the lower limb and functional dynamics by regions

Topographic. Lumbosacral plexus.

Item 21. Neuromuscular systems of the upper limb and functional dynamics by topographic regions.

Brachial plexus.

5. CARDIORESPIRATORY APARATUS MODULE

Unit 22. Cardiocirculatory Systems. Heart. Morphology, situation and relations. Heart cavities. Endochardy, miocardy and pericardy. Vascularizatio and innervation. Heart Plexus.
Unit 23. Artherial circulatory Systems. Type of vases: arteries, arterioles and capilars. Systemic circulation. Lung circulation.
Unit 24. Venous circulatory system. Type of veins. Venous circulation. Circuits. Lymphatic system. Lymphatic ganglions. Colectors and lymphatic areas.
Unit 25. Respiratory system I. Superior respiratory tract. Nassal fossa, pharynx, larynx, trachea. Situation, relations and structure. Vascularization and innervation.
Unit 26. Respiratory system II. Inferior respiratory tract, bronchi, pulmonary alveoli. Structure: status, relationships, lobed segments. Pleura. Vascularization innervation.

6. DIGESTIVE APPARATUS MODULE

Unit 27. Mouth. Temporomandibular joint. Pharynx. Esophagus. Situation, relationships. Structure.
Unit 28. Anatomical grid. Peritoneal cavity. Stomach. Situation, relationships, structure.
Unit 29. Liver and Bile ducts. Pancreas and Spleen. Situation, relationships, structure.
Unit 30 Small intestine: duodenum, jejunum and ileum. Large intestine: colon and rectum. Situation, relationships, structure.
Unit 31. Peritoneum. Mesentery. Vascularization and innervation of digestive viscera.

7. UROGENITAL APPARATUS AND TOPOGRAPHY MODULE

Unit 32. Urogenital tract. Kidney. Nephron. Adrenal gland. Situation, relationships, structure. Vascularization and innervation.
Unit 33. Renal tract. Pelvis, ureter, bladder, urethra. Situation, relationships, structure. Vascularization and innervation.
Unit 34. Pelvic skeleton. Differences between the sexes. Pelvic and perineal muscles. Erectile bodies. Male genital tract: testicle, seminal ducts and external genitalia. Vascularization and innervation.
Unit 35. Female genital tract: uterus, tubes, ovarios and external genitalia. Mama. Vascularization and innervation.

8. PRACTICAL PROGRAM

Practice 1: Embryology and histology.
Practice 2: Central and peripheral nervous system. Special senses.
Practice 3: Osteoarthrology: skull, spine, upper and lower limb.
Practice 4: Neuromuscular systems.
Practice 5: Cardiocirculatory system and respiratory system.
Practice 6: Digestive system.
Practice 7: Urogenital apparatus.
Practice 8: General and system anatomy in real samples in the Dissection Room at the Faculty of Medicine and Odontology

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Tutorials	2,00
Theory	40,00
Seminar	2,00
Laboratory	16,00
Total hours	**60,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	2,00
Individual or group project	10,00
Independent study and work	55,00
Preparation of lessons	13,00
Preparation for assessment activities	10,00
Resolution of case studies	0,00
Total hours	**90,00**

TEACHING METHODOLOGY

The course, designed for students to lead their own learning, is structured around four concepts:

- **Theory sessions**. Contents will be delivered mainly through lectures, which offer the possibility of focusing on the key concepts. Also, the most suitable resources for further in-depth study of the subject will be provided. Some units will allow participatory learning, focusing on the communication between students and between them and the lecturer.

- **Practical laboratory lessons.** They are intended to consolidate theoretical knowledge through the practical application of it. Students will carry out problem-solving tasks using online self-assessment platforms.To this end, the students will be organized in groups and in each practice they must have prepared autonomously and in advance the necessary knowledge to tackle the task according to the guide provided by the teaching staff for each practical session (practice notebooks).

  The teaching staff will present the objectives, report on the handling of the practical material (histological preparations, bones, anatomical models, x-rays, plates, etc.) supervising the completion of the work and the interpretation of the results. The use and knowledge of the concepts corresponding to the session will be evaluated orally during the sessions.

  Group changes may not be made in practice sessions except for duly justified reasons.

- **Seminars.** Attendance is mandatory. Seminars will be held throughout the course and will be used for the lecturer to provide an overall summary after the explanation of a block of units by

presenting a thematic seminar. The lecturer will focus on clinical aspects for students to get a view of the practical application. The relevant elements of each clinical aspect will be defined during the seminars and presented and assessed during tutorials. Students will carry out self-assessment activities.

- **Tutorials**. Attendance is mandatory. Tutorials will be held in small groups. The aim is to promote teamwork and improve oral presentation skills by carrying out projects related to the clinical aspects of the subject. This will help students to understand the applied component of a block of units, which will serve to complement the training acquired during the lectures. Besides, tutorials will introduce a series of supplementary activities of different types (case studies, management of scientific literature, discussion of current issues, etc.). During the tutorials, the lecturer will assess the student's learning process individually and comprehensively. These activities will assess the student's learning process in a comprehensive manner. Tutorials will also serve to solve any issues raised during the lessons and to advise students on the working methods that are most useful for the resolution of the problems they may have. The lecturer may formulate questions and problems specific to the needs of students.

EVALUATION

THEORETICAL EXAM:

On the syllabus presented in the theoretical classes. The theoretical exam will be the same for all groups. The theoretical exam accounts for 60% of the final grade, and will be composed of:

- Evaluation of 10 short questions, with limited space for answering them (50% of the mark of the theoretical exam). Grading criteria: 1 point/correct answer.

- Evaluation of 30 multiple-choice questions (4 answers, 1 true/3 false) (50% of the mark of the theoretical exam). Grading criteria: 1 point/correct answer out of 30. The formula for elimination of the component by chance will be applied (-1 for every 3 wrong answers, i.e. -0.33 for wrong answer).

PRACTICAL EXAM:

About the syllabus exposed in the practical classes. The practical exam accounts for 20% of the final grade, and will be composed of:

- Recognition of structures in projected images (10 questions; 10% of the overall grade). To be eligible to take the exam, you must have attended 80% of the internship.

- Oral evaluation of students during one of the practice sessions (5 questions about the content of the practice; 10% of the overall grade). This grade may be reduced by 1 point out of 10 for unjustified lack of punctuality or for altering the performance of the internship.

SEMINARS AND TUTORIALS:

Compulsory attendance at the thematic seminars, carrying out self-assessment tasks during them and tutored work. Development, presentation and discussion of issues related to clinical aspects of the syllabus, defined in the seminars and presented and evaluated during the tutored classes with the presence of the professor.

Attendance at seminars and the realization and exhibition of the tutored work accounts for 20% of the final grade. Given that the works are not recoverable, the evaluation obtained in the first call will be maintained in the second call.

FINAL NOTE:

In the final grade, the score for each part is distributed:

Theory:

30 test questions ..... 3.0 points

10 short questions ..... 3.0 points

Internship: 10 short questions .....1.0 point

Practice: 5 oral questions and work during the practical sessions....1.0 point

Tutored work: ..... 1.0 point

Attendance at tutorials and seminars..... 1.0 point

OVERALL ASSESSMENT:

First-year students:

The overall grade will be the sum of the grade obtained in the theoretical exam, the practical evaluation, group work of the tutorials and attendance at tutorials and seminars.

It will be essential to obtain at least 4.5 out of 10 of the maximum mark in both the theoretical part and in the practical exam in order to be able to carry out the weighting between the different parts evaluated.

Unjustified non-attendance at 80% of the internships, as well as not reaching the minimum score required in each exam, automatically means not calculating the final grade and, therefore, not passing the subject.

The continuous assessment activities, which in this subject are stated to be practical, are COMPULSORY ATTENDANCE and, therefore, NOT RECOVERABLE, in accordance with the provisions of article 6.5 of the UV Evaluation and Qualification Regulations for Bachelor's and Master's degrees.

Second Call: To pass the subject in the Second Call, the criteria will be the same as those applied in the First Call. If the student has not passed the subject in the first call, the marks of the approved theoretical or practical exams (equal to or greater than 5) will be kept.

the first call. In the event of not having met the minimum attendance requirement for the internship (absences of more than 20% without justification), in order to be able to take the exam, you must carry out a series of activities to make up the internship at the discretion of the teaching staff.

Students from the second enrolment:

Students who have already taken the subject previously will not repeat the internships, tutorials or seminars, nor will their participation in these activities be evaluated.

The evaluation will be: 80% theoretical exam (test and short questions + 20% practical exam (10 identification questions).

As for first-year students, it will be essential to obtain at least 4.5 out of 10 of the maximum mark in both the theoretical part and the practical exam in order to be able to carry out the weighting between the different parts evaluated.

Important:

The copying or manifest plagiarism of any task that is part of the evaluation will make it impossible to pass the subject, then submit to the appropriate disciplinary procedures. Please note that, in accordance with Article 13. d) of the University Student Statute (RD 1791/2010, of 30 December), it is the duty of a student to refrain from using or cooperating in fraudulent procedures in assessment tests, in the work carried out or in official documents of the university.

In the event of fraudulent practices, the procedure will be as determined by the "Protocol of action against fraudulent practices at the University of Valencia" (ACGUV 123/2020): https://www.uv.es/sgeneral/Protocols/C83sp.pdf

REFERENCES

Basic Textbooks

Systems Anatomy and Locomotor System

- Gray's Basic Anatomy, 3rd ed. by Drake, Vogl & Mitchell

- Gray's Anatomy for Students, 4th ed. by Drake, Vogl & Mitchell

- Moore's Clinically Oriented Anatomy, 9th ed. by Moore, Dalley & Agur

- Human Anatomy for Health Sciences Students by Suárez Quintanilla

- Sobotta Anatomy Textbook (First English ed.) by Paulsen & Waschke

Embryology

- Langman's Medical Embryology, 14th ed. by Sadler

- The Developing Human: Clinically Oriented Embryology, 11th ed. by Moore, Persaud & Torchia

Histology

- Histology: A Text and Atlas, with Correlated Cell and Molecular Biology by Ross & Pawlina (latest 9th ed.)

Atlases

- Prometheus Atlas of Human Anatomy, 2nd ed. (often cited as Atlas of Anatomy for Students Prometheus)

- Sobotta Atlas of Human Anatomy, English/Latin editions, latest 17th ed. by Paulsen & Waschke

- Netters Atlas of Human Anatomy, 7th ed. by Frank H. Netter

Others

Anatomy and Physiology: The Structure and Function of the Human Body, 15th ed. by Thibodeau & Patton

Complementary

- Medical Terminology Dictionary (Salvat edition)
- Illustrated Anatomical Nomenclature by Feneis