COURSE DATA

Data Subject	
Code	34069
Name	Human Anatomy
Cycle	Grade
ECTS Credits	6.0
Academic year	2023 - 2024

Study (s)

Degree	Center	Acad. year	Period
1201 - Degree in Pharmacy	Faculty of Pharmacy and Food Sciences	1	Second term
1211 - D.D. in Pharmacy-Human Nutrition and Dietetics	Faculty of Pharmacy and Food Sciences	1	Second term

Subject-matter

Degree	Subject-matter	Character
1201 - Degree in Pharmacy	17 - Human anatomy	Basic Training
1211 - D.D. in Pharmacy-Human Nutrition and Dietetics	1 - Asignaturas obligatorias del PDG Farmacia-Nutrición Humana y Dietética	Obligatory

Coordination

Name	Department
TOMAS CABALLERO, MÓNICA	17 - Human Anatomy and Embryology

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

OUTCOMES

1201 - Degree in Pharmacy

- To possess and to understand the knowledge in the different areas of study included in the formation of the pharmacist.
- To apply this knowledge to the professional world, contributing to the development of Human Rights, democratic principles, principles of equality between women and men, solidarity, protection of the environment and promotion of a culture of peace with Gender perspective.

- To know how interpret, value and communicate relevant data in the different aspects of pharmaceutical activity, making use of information and communication technologies.
- Skill to communicate ideas, analyze problems and solve them with a critical mind, achieving team-working abilities and assuming leadership whenever required.
- Develop know-hows for their professional career.
- Know the anatomical terminology.
- Knowledge of tissues.
- Knowledge of training in the early stages of the embryo.
- Knowledge of the organs, apparatus and systems of the human body.
- Recognize the bones of the human body.
- Recognize the viscera of the human body.
- Know the relationships of the viscera.
- Know the structures of the Nervous System.
- To know the relations of the structures of the Nervous System.

LEARNING OUTCOMES

Results of the knowledge learned: When the students finish their Studies they should have the formation needed about the structure of the human body necessary to develop correctly the understanding of other scientific areas of their DEGREE, and to apply it during their professional practice.

The objectives will be cognitive, but being basic information, they don´t have to forget about the acquisition of knowledge about systematic observation, the functional correlation, the integration of the studied structures and of the practical abilities. All of the objectives are therefore theorical and practical.

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

Unit 7. Nervous tissue. Structural organization. Meninges.
Unit 8. Central and peripheral Nervous System. Central Nervous System I: Study of spinal cord.
Unit 9. Central Nervous System II: Study of brain.
Unit 10. Peripheral nervous system: Cranial and spinal nerves. Autonomic nervous system: sympathetic and parasympathetic.
Unit 11. Special Senses I: Touch, taste and smell.
Unit 12. Special Senses II: Sight and hearing.
Unit 13. Neuroendocrine system.

4. MUSCLE-SKELETAL SISTEM MODULE

Unit 14. Type of bones. Type of joints. Type of diartrosis.
Unit 15. Study of the skeleton. Bones of the spine (vertebral column) and skull.
Unit 16. Neuromuscular Systems of the back.
Unit 17. Thorax: ribs and sternum. Thoracic muscles. Diaphragm.
Unit 18. Abdominal muscles. Inguinal conduct. Hernies.
Unit 19. Study of the skeleton. Inferior member and superior member.
Unit 20. Neuromuscular Systems of inferior member, functional dynamics of each topographic region. Lumbar plexus and lumbosacral plexus.
Unit 21. Neuromuscular Systems of superior member and functional dynamics for each topofraphic regions. Braquial 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.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	37,00	100
Laboratory practices	16,00	100
Seminars	2,50	100
Tutorials	2,50	100
Attendance at events and external activities	2,00	0
Development of group work	10,00	0
Study and independent work	50,00	0
Readings supplementary material	5,00	0
Preparation of evaluation activities	10,00	0
Preparation of practical classes and problem	13,00	0
TOTAL	**148,00**	

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 the theoretical knowledge through practical application. Students will perform problem solving tasks by using online self-assessment platforms. For this, students are split in groups, and in each practice one of the members will act as supervisor of the activity. The supervisor will be responsible for providing colleagues with the necessary knowledge to tackle the task according to the content guide provided by the teacher for each practical session. The teacher will present the objectives, inform about the handling of the practice material (histological preparations, bones, models, x-rays, prints, etc.) and supervise the realisation of the work and the interpretation of the results. Failure of students to perform the function of supervisor will result in a penalty of one point in the practical part score.
- 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& acute;s learning process individually and comprehensively. These activities will assess the students’ 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.

Evidence of copying or plagiarism in any of the assessable tasks will result in failure to pass the subject and in appropriate disciplinary action being taken. Please note that, in accordance with article 13. d) of the Statute of the University Student (RD 1791/2010, of 30 December), it is the duty of students to refrain from using or participating in dishonest means in assessment tests, assignments or university official documents. In the event of fraudulent practices, the Action Protocol for Fraudulent Practices at the University of Valencia will be applied (ACGUV 123/2020):https://www.uv.es/sgeneral/Protocols/C83sp.pdf

EVALUATION

The assessment methodology is as follows:

THEORETICAL EXAMINATION: For the syllabus presented in the theoretical lessons, the theoretical examination will be the same for all groups. The theory exam is worth 60% of the final grade, and will consist of:

- Evaluation of 10 short questions, with delimited space for the answers (50% of the final score of the theoretical exam). Qualification criteria: 1 correct answer/1 point.

- Evaluation of 30 multiple-choice questions (4 answers, 1 true/3 false). Worth 50% of the final socre of the theoretical exam. Qualification criteria: 1 point per eachcorrect answer out of 30. A formula will be applied to avoid right answers by chance (-1 for every 3 wrong answers).

The theory examination is worth 60% of the final score as multiple-choice questions are worth 30% and short questions another 30%.

PRACTICAL EXAMINATION: To be able to sit this examination, the student must have attended at least 80% of the practical lessons.

SEMINARS AND TUTORIALS: Compulsory attendance to 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 which are defined in the seminars as well as presented and evaluated during tutoring with the teacher. Attendance to seminars and elaboration and presentation of supervised tasks are worth 20% of the final score. Since these tasks cannot be retaken, the marks obtained in the first call will be kept for the second call.

FINAL MARK:

Each part is marked as follows:

Theory:

30 multiple-choice questions .....3.0 points

10 short questions .....3.0 points

Practical sessions: 10 short questions .....2.0 points

Seminars and tutored projects: .....2.0 points

GLOBAL ASSESSMENT: It is the sum of the marks obtained in the theoretical exam, the practical exam and the group work in tutorials and seminars. It is compulsory to obtain at least 50% of the maximum mark in the practical part and in the theoretical exam to make the average between the different evaluated parts. Not reaching any of the minimum percentages required in each exam automatically means not calculating the final grade and, therefore, not passing the subject.

Attendance at continuous assessment activities, which in this course include practical sessions, is MANDATORY. These activities are, therefore, NON-REASSESSABLE, in accordance with the provisions of Article 6.5 of the UV Regulations on Assessment and Qualification for Bachelor's and Master's Degrees.

First registration:

First call: To take the exam in the first call students must have attended 80% of the practical lessons.

Second call: To pass the subject in the second call, the criteria will be the same applied in the first call. If a student fails in the first call, the marks of theoretical and practical exams will be kept (when equal to or greater than 5). In the event of failure to accomplish the minimum attendance to the practical lessons (more than 20 % unjustified absences), it will be compulsory to carry out a number of activities set up by the teacher to make up for the missed practical lessons before taking the exam.

From the second registration:

The evaluation criteria are the same as for first registration. The students who carried out the practices during the first registration do not have to repeat the practices. Repeat students must take both the practical and theoretical exam, which will represent, respectively, 20% and 80% of the final score.

REFERENCES

Basic

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