COURSE DATA

Data Subject	
Code	34069
Name	Human Anatomy
Cycle	Grade
ECTS Credits	6.0
Academic year	2018 - 2019

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.

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 components:

- 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 communication between students and between them and the lecturer.
- Practical laboratory classes. They are intended to consolidate theoretical knowledge through their practical application. Students will 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 act as a monitor of the activity. The monitor of each practice 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.) supervising the realisation of the work and the interpretation of the results.

- Seminars. 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 their practical application. The relevant elements of each clinical aspect will be defined during the seminars and presented and assessed during tutorials. Students will do self-assessment activities.
- Tutorials. Tutorials will be held in small groups. The aim is to promote teamwork and improve oral presentation skills by means of carrying out **projects related to 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 in lectures. Also, tutorials will introduce a series of supplementary activities of various types (case studies, management of scientific literature, discussion of current issues, etc.). During them, the lecturer will assess the student´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 classes 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

The assessment methodology is as follows:

THEORY EXAMINATION: It will be the same for all groups and based on the contents delivered through lectures, and it will consist of the following parts:

- Ten short limited-answer questions. Marking criteria: 0.3 points for each correct answer.

- Twenty multiple-choice questions (five answers, one of which is true and four false). Marking criteria: 0.15 points for each correct answer. A formula for eliminating randomness will be implemented: -0.15 points for every four wrong answers.

The theory examination is worth 60% of the final mark 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 practical classes.

SEMINARS AND TUTORIALS: Attendance at thematic seminars and performance of self-assessment tasks. In addition, preparation, presentation and discussion of questions related to clinical aspects of the syllabus. These questions will be defined during seminars and presented and assessed during tutorials. Attendance at seminars and preparation and presentation of the tutored projects are worth 20% of the mark.

FINAL MARK:

Each part is marked as follows:

Theory: Twenty multiple-choice questions ……..3.0 points

Ten short questions ……..…..…….....3.0 points

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

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

GLOBAL EVALUATION: Sum of the grade obtained in the theoretical exam, practical exam and collective works of the tutorials and seminars. It will be essential to get a 5 in the practical part and a 4, at least, in the theoretical exam to be able to perform the general computation. **Second call**: If the student has not passed the subject in the June call, the notes of the passed parts (theoretical, practical or seminars / tutorials) of the first exam will be kept. The grades obtained in the practical exam, tutorials and seminars, will only be kept one academic year.

REFERENCES

Basic

- ANATOMÍA DE APARATOS Y SISTEMAS Y ANATOMIA DEL APARATO LOCOMOTOR
  - Anatomía Básica. Gray. (2013). Ed. Elsevier.
  - Fundamentos de Anatomía con Orientación Clínica. Moore. (2013). Ed. Wolters Kluwer.
  - Anatomía Humana para estudiantes de ciencias de la salud. (2017). Ed. Elsevier
  - Sobotta. Texto de Anatomía. (2018). Ed. Elsevier

  BLOQUE EMBRIOLOGÍA:
  - Langman. Embriología Médica. Sadler. (2015). Ed. 13. Ed. Lippincott, Williams & Wilkins
  - Embriología Clínica. K.Moore. (2016). Ed. 10. Ed. Elsevier

  BLOQUE HISTOLOGÍA:
  - Histología. Ross. (2013). Ed. Panamericana

  ATLAS:
  - Prometheus. Atlas de Anatomía Humana. (2013). Ed. 2. Ed. Panamericana
  - Sobotta. Atlas de anatomía humana. R. Putz y R. Pabst. (2012). Ed. 23. Ed. Elsevier.
  - Netter, F. Atlas de Anatomía Humana (2015). Ed. 6. Ed. Elsevier. Masson

  OTROS:
  - Anatomía y fisiología. Estructura y función del cuerpo humano. Gary A. Thibodeau. (2007). Ed. Elsevier.

Additional

- - Diccionario de Terminología Médica. Ed. Salvat.
  - Manual de Anatomía y Embriología General.(2000). Ed. Universitat Valencia.
  - Feneis (2006). Nomenclatura anatómica ilustrada. Ed. Masson.