COURSE DATA

Data Subject	
Code	33001
Name	Human anatomy II
Cycle	Grade
ECTS Credits	6.0
Academic year	2021 - 2022

Study (s)

Degree	Center	Acad. year	Period
1202 - Degree in Physiotherapy	Faculty of Physiotherapy	1	First term

Subject-matter

Degree	Subject-matter	Character
1202 - Degree in Physiotherapy	1 - Human anatomy	Basic Training

Coordination

Name	Department
GONZALEZ SOLER, EVA MARIA	17 - Human Anatomy and Embryology
PEREZ MOLTO, FCO JOSE	17 - Human Anatomy and Embryology

SUMMARY

The general objective of the subject Anatomía Humana II is to contribute to the alumna descriptive and topographical knowledge of the different organs and systems that allow the functioning of the human body. This subject studies the organs that make up the cardio-circulatory, respiratory, digestive, genitourinary and nervous systems, as well as the organs of the senses. The embryonic development of human organisms, the microscopic morphology of the tissues and the macroscopic morphology of the organs, the relationships they establish at topographic level with other structures and the main functional aspects of each organ and system will be worked on. The exhaustive knowledge of the morphological, relational and functional aspects of the different apparatuses and systems of the human body is essential in the training of the physiotherapist, as well as providing a solid and necessary foundation for the integration of the knowledge taught in the rest of the subjects throughout of his training as physiotherapists.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

Previous knowledge is not required

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

1202 - Degree in Physiotherapy

- Students must be able to apply their knowledge to their work or vocation in a professional manner and have acquired the competences required for the preparation and defence of arguments and for problem solving in their field of study.
- Students must have the ability to gather and interpret relevant data (usually in their field of study) to make judgements that take relevant social, scientific or ethical issues into consideration.
- Students must be able to communicate information, ideas, problems and solutions to both expert and lay audiences.
- Students must have developed the learning skills needed to undertake further study with a high degree of autonomy.
- Know and understand peoples morphology, physiology, pathology and behaviour under heath and sickness in the natural and social environments
- Respect fundamental rights and equality between men and women.
- Recognise diversity, multiculturality, democratic values and peace culture.
- Recognise equal opportunity and accessibility for people with disability.
- Work in teams.
- Have the ability to organise and plan work.
- Know the human anatomy, especially the dynamic relationship among morphology, structure and function.
- Know the structural changes that may arise as a consequence of the physiotherapy application.
- Know the morphology, structure and function of the central nervous system, pyramidal and extrapyramidal tracts and their locomotive effects in order to know how to apply the appropriate physiotherapy .
- Know the morphology, structure and function of the senses, and the peripheral, sensitive and motor systems in order to be able to apply them in physiotherapy.

- Know the visceral system of the abdominal and thoracic cavities, their content, distribution and function related to the organic homeostasis in order to apply them in physiotherapy.

LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

1. That the students be able to identify and describe the microscopic structure of the main tissues that make up the human body.
2. That the students be able to identify and describe the main stages of the embryonic development of the human organism.
3. That the students be able to identify and describe the elements that make up the sense organs and their driving directions.
4. That the students be able to identify and describe the elements that make up the nervous system.
5. That the students be able to identify and describe the elements that make up the cardiocirculatory, respiratory, digestive and genitourinary systems, as well as their topographic and main functions.
6. That the students be able to identify the different structures and systems studied by means of radiological image (Rx, TACO, RNM,...)

DESCRIPTION OF CONTENTS

1. EMBRIOLOGY AND HISTOLOGY

1-Anatomy: concept, historical memory. Plan of the course. Organization of the human body. Terminology, position, plans and sections. Concept of organs, organ systems. Life cycle.
2-Fabrics: concept, classification and types. Epithelial tissue. Glandular tissue.
3-Tissue bra: connective, cartilage and bone tissue. Muscle tissue.
April.
4-Nervous tissue
5-Embryology. Germ phase; morula, blastula, gastrula (embryonic leaves) and neurula.
6-Embryology. Nesting human. Placenta and fetal annexes.
7-Embryology. Development of the nervous system.
8-Embryology. Somites and derivatives. Limb formation.

2. NERVOUS SYSTEM

9-Organs of sensory reception. Structural organization. Central and peripheral SN. Sympathetic and parasympathetic: autonomic nervous system.
10-Sensory reception organs: touch.
11-Sensory reception organs: vista.
12-Organs sensory reception: ear. hearing and balance.
13-Central nervous system: Study of whole brain and spinal cord.
14-Peripheral Nervous System: Nerve Fiber. Spinal and cranial nerves.
15-Descriptive anatomy of the spinal cord: structure of the gray matter and white matter.
16-Descriptive Peripheral Nervous System Anatomy: nerve root, spinal nerve. Nerve plexus. Spinal

reflex arc.
17-Descriptive Anatomy Trunk: motor, sensory and vegetative core. Systematization of the cranial nerves of the trunk.
18-Descriptive Anatomy Trunk: Nuclei involved in motor control: Substance Black, Red Nucleus, Nucleus Vestibular Nuclei and Bridge.
19-Descriptive anatomy of the cerebellum. Cortex and deep nuclei. Function of the cerebellum.
20-Diencephalon descriptive anatomy: anatomical and functional divisions. Thalamus nuclear systematization motor and sensory.
21-Descriptive anatomy of the brain: motor and sensory areas. Language Area
22-Descriptive anatomy of the brain subcortical structures involved in motor control. Basal nuclei. Role of the basal ganglia.
23-Structure of the white matter. Routes of association, projection and commissural.
24-Functional anatomy of the SN. Pyramidal and extrapyramidal motor pathways. Via final action on the lower motor neuron.
25-Sensitive routes.
26-Covers meningeal and spinal fluid circulation.
27-Irrigation CNS.
28-Neuroendocrine System: hypothalamus pituitary block: description and secretion. Target endocrine glands.

3. CARDIOVASCULAR SYSTEM

29-External and internal morphology of the heart: pericardium, myocardium. Valvular Endocardium System.
30-Heart and great vessels. Sigmoid valves. Coronary Circulation.
31-Nerve conduction system and heart. Pulmonary Circulation.
32-Artery and pulmonary veins.
33-Cephalic circulation. Somatic Circulation.
34-Parietal and visceral branches of the thoracic and abdominal aorta. Source of irrigation large trunks of the extremities.
35-Lymphatic System: concept, systematic and anatomical function. Immune function of the spleen and thymus.

4. RESPIRATORY SYSTEM

36-Upper respiratory tract: nasal cavity, paranasal sinuses. Structure and function of the larynx.
37-Lower respiratory tract: a socket main bronchus. Macroscopic structure of the lungs. Functional unit of the lung.

5. DIGESTIVE SYSTEM

38-Oral cavity. Tooth system. Pharynx, esophagus and stomach.
39-Intestine. Intestine.
40-Glands Digestive System. Oral cavity 38. Tooth system. Pharynx, esophagus and stomach.
41-Irrigation: mesenteric artery and its branches. Portal Circulation.

6. SISTEMA UROGENITAL

42-Kidney and urinary tract. Functional unit of the kidney.
43-Male genital.
44-Female genital.

7. PRACTICE SCHEDULE. 15 HOURS

1-Embryology.
2-Nervous System (I). Spinal cord outer structure and Interna. Estudio with parts and anatomical models and medical images.
3-Nervous System (II): Trunk and cranial nerves. Cerebelo. Piezas and anatomical models and medical images.
4-Nervous System (III): Diencephalon. Cerebral hemispheres and subcortical structures and cortical areas. Studio pieces and anatomical models and medical images.
5-Nervous System (IV). Motor and somatosensory pathways. Diagrams, tutorials, medical imaging.
6-Thorax I: Mediastinum. Cardiocirculatory apparatus: external and internal morphology of the heart. Great vessels. Study with parts and anatomical models and medical images.
7-Thorax II: Respiratory. airways and lungs. Studio pieces and anatomical models and medical images.
8-Abdomen: Grid Anatomopathological Session. Gastroenterology. Studio pieces and anatomical models and medical images.
9-Apparatus Urogenital: Kidney and urinary tract. Female sexual organs. Male sex organs. External genitalia. Study with pieces and anatomical models and medical images.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	45,00	100
Laboratory practices	15,00	100
Development of group work	40,00	0
Study and independent work	30,00	0
Preparation of evaluation activities	20,00	0
TOTAL	**150,00**	

TEACHING METHODOLOGY

Concepts classroom lecture through active student / teacher. Seminars about visceral image and nervous system and exposition of works if the teacher considers it appropriate.

Practical classes in dissection room on carcass and anatomical models. Groups of 16 students. Application of the concepts and theoretical knowledge acquired. Relating concepts and acquiring skills. Build Job.

EVALUATION

It will consist of a theoretical test and a practical test. It is essential to approve each of the parties to average the final grade.

- **Theoretical test:** This value corresponds at a 70% of the final mark. The exam consists of a battery of 50 questions of multiple response with 4 possible responses. The correct questions will have a value of 1 point, and the incorrectly answered questions will substract 0, 20 points (for every 5 wrong answers, a point will be subtracted).

The content of the test will be the same for all the groups. It could be possible to demand works, at this case, the theoretic examination will have value of the 65% of the final mark, and the works according to their quality, will have a value of until a 5% of the final note (0.5 points over 10)

- **Practical test: I**t has a value of the 30% on the final mark. 5% of this mark will consist of attendance at practices and the preparation and delivery of a power point as table head, in which the companions are guided in the stipulated practice.

- **Attendance to Practice:** Attendance to practices is mandatory. The unjustified absence to more than 20% of the practices will suppose the impossibility to do the practical examination of the subject.

REFERENCES

Basic

- CROSSMAN AR, NEARY D. (2015) Neuroanatomía (5ª edició). Ed. Elsevier Masson.
- DRAKE RL, VOLG AW, MITCHELL AWM. (2015) GRAY. Anatomía para estudiants (3ª edición). Editorial Elsevier.
- GREY (2011) Anatomía para estudiants (2ª edició). Editorial Elsevier.
- HAINES DI. (2014) Principis de Neurociencia (4ª edició). Editorial Elsevier Saunders.
- LANGMAN J, SADLER TW. (2016) Embriologia Mèdica: amb Orientació Clínica (13ª edició). Editorial Panamericana.
- MOORE K, DAILEY A, AGUR A. (2013) Anatomía amb orientació clínica (7a edición). Editorial Lippicont Williams & Wilkins.

Additional

- FENEIS H i DAUBER W. (2006) Nomenclatura Anatòmica Il·lustrada (5ª edició). Editorial Masson.
- KHALE W. (2008) Atles d' Anatomia en 3 toms. 3º Tom: Sistema Nerviós i òrgans dels sentits (9ª edició). Editorial Medica-Panamericana.
- NIELSEN M, MILLER S. (2012) Atles d'anatomía humana (1ª edición). Editorial Panamericana.
- NETTER FH. (2011) Atles d'Anatomía Humana (5ª edició). Editorial Elsevier.
- SCHUÜNKE M, SCHULTE I, SCHUMACHER O. (2014) Prometheus. Texto i Atles d'Anatomia, Vol. 2 i 3 (3ª edició). Editorial Panamericana.
- PAULSEN FWJ, WASCHKE J. (2012) SOBOTTA. Atles d'Anatomía Humana (3 volúmenis; 23ª edició). Editorial Elsevier.
- PUELLES LÓPEZ. (2008) Neuroanatomía. Editorial Panamericana.

ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

1. Contents

The contents initially included in the teaching guide are maintained.

2. Workload and temporary teaching planning

The proportion of the different activities that add up to the hours of dedication in ECTS credits marked in the original teaching guide has been maintained.

3. Teaching methodology

Depending on the needs, teaching will be adapted to the blended or non-classroom mode, through the implementation of the corresponding teaching strategies (i.e. hybrid teaching, videoconference sessions, voice-over presentations, videos or additional multimedia material).

The tutorials may be conducted virtually, following the guidelines of the Universitat de València, via e-mail or videoconference, through the Blackboard Collaborate or Teams platform.

4. Evaluation:

The final evaluation tests will be presential, and only in case of problems caused by the evolution of the pandemic, final evaluation tests will be done online through Aula Virtual of the Universitat de València.