

**COURSE DATA****Data Subject**

Code	34288
Name	Human and ocular anatomy
Cycle	Grade
ECTS Credits	9.0
Academic year	2018 - 2019

Study (s)

Degree	Center	Acad. year	Period
1207 - Degree in Optics and Optometry	Faculty of Physics	1	Annual

Subject-matter

Degree	Subject-matter	Character
1207 - Degree in Optics and Optometry	4 - Human anatomy	Basic Training

Coordination

Name	Department
SANCHIS GIMENO, JUAN ALBERTO	17 - Human Anatomy and Embryology

SUMMARY

Human and Ocular Anatomy is the first course in which the student of Optics & Optometry accesses to the clinical world and Health Sciences on which you will have to develop your future career. Therefore Human and Ocular Anatomy is a first-year course that should serve as a first approximation to the Health Sciences.

The matter of Human Anatomy will be taught in a course-Human Anatomy and Ocular - to be held annually in the first year of the undergraduate degree. At the start of the course will be taught the concepts of human anatomy in general and the final part of the course will be taught on ocular anatomy. The course will present the knowledge through classroom lectures and practical workshops held-application to obtain an overall picture of the agenda.

Also taught practical classes in the laboratory for identification and recognition of anatomical structures.



PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

Anatomía Humana y Ocular es la primera asignatura en la que el estudiante de Óptica y Optometría accede al mundo clínico y de Ciencias de la Salud sobre el que va a tener que desarrollar su futura vida laboral.

Por este motivo Anatomía Humana y Ocular es una asignatura de primer curso que debe servir como primera aproximación a las Ciencias de la Salud.

La materia de Anatomía Humana se impartirá en una asignatura -Anatomía Humana y Ocular - que se desarrollará de forma anual en el primer curso del estudi

OUTCOMES

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- Knowing how to apply the knowledge acquired to professional activity, knowing how to solve problems and develop and defend arguments.
- Being able to gather and interpret relevant data to make judgments.
- Being able to transmit information, ideas, problems and solutions to both a specialized and non-specialized audience.
- Development of learning skills necessary to undertake further studies with a high degree of autonomy.
- To understand and to recognize the normal anatomy of the human body at the tissue, organ and systems level.
- To know the anatomy of the skin, blood, circulatory, digestive, locomotive, reproductive, excretory and respiratory systems; endocrine system, immune system and central and peripheral nervous system of the human body.
- To know the embryonic development and human ocular organogenesis.
- To determine the development of the human visual system.
- To know and to describe macroscopically the structures that make up the visual system and the ocular annexes of the human body.
- To recognize with macroscopic methods and imaging techniques the anatomy of tissues, organs and systems of the human body.



LEARNING OUTCOMES

The aim pursued by the end of the teaching-learning process in the course is:

- œ Mastering anatomical terminology.
- œ Knowing the different osteological structures, artrológicas, and different neuromuscular systems that form the musculoskeletal system.
- œ determine the characteristics and anatomic relationships of the different elements that make up the cardiorespiratory system
- œ determine the characteristics and anatomic relationships of the different elements that make up the circulatory system.
- œ determine the characteristics and anatomic relationships of the different elements that make up the digestive system.
- œ determine the characteristics and anatomic relationships of the different elements that make up the urogenital system.
- œ Mastering vascularization and innervation of different organs and systems of the human body.
- œ Identify topographically different anatomical structures of the human body.
- œ determine the characteristics and anatomical differences between the various components of the nervous system.
- œ Understand the anatomy of the human visual system

DESCRIPTION OF CONTENTS

1. Locomotor System

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.
Types of Bones. Types of Joints. Types of synovial joints.
Esqueletología spine. Joints, ligaments. Intervertebral disc. Functional dynamics of the column.
Thorax: ribs and sternum. Diaphragm.
Esqueletología. Lower limb, upper limb.
Back neuromuscular systems.
Thoracic and abdominal muscles. Inguinal canal.
Lower limb neuromuscular systems.
Upper limb neuromuscular systems.

2. Cardio-circulatory Systems

Cardio-circulatory Systems. Heart. Morphology situation and relationships. Cardiac chambers. Endocardium, myocardium, pericardium. Vascularization and innervation. Cardiac plexus.
Blood circulatory system. Types of vessels: arteries, arterioles and capillaries. Systemic circulation. Pulmonary Circulation.
Venous circulatory system. Types veins. Venous circulation. Circuits. Lymphatic system. Lymph nodes. Collectors and territories nodes. Timo.



3. Respiratory

Upper respiratory tract: nasal passages, pharynx, larynx, trachea. Situation, relationships, structure. Vascularization and innervation.

Lower respiratory tract: bronchi, alveoli. Structuring: situation, relationships, lobed segments. Pleura. Vascularization and innervation.

4. Digestive

Mouth. Pharynx. Esophagus. Situation, relationships. Structure. Vascularization and innervation.

Stomach. Situation, relationships, structure. Vascularization and innervation.

Duodenum, pancreas and spleen. Situation, relationships, structure. Vascularization and innervation.

Liver. Situation, relationships, structure. Bile ducts. Vascularization and innervation.

Jejunum and ileum and large intestine. Situation, relationships, structure. Vascularization and innervation.

5. Urogenital

rogenital system. Kidney. Gross anatomy. Microscopic structure Renal Nephron: Situation, relationships, structure. Vascularization and innervation.

Renal tract. Pelvis, ureter, bladder. Urethra. Situation, relationships, structure. Vascularization and innervation. Adrenals.

Pelvic and perineal muscles. Pelvic girdle. Esqueletología. Male genital. Testis. Erectile organ. External genitalia.

Female genital tract. Uterus. Tubes, ovaries. External genitalia. Mama. Topographic Grid.

6. Cephalic limb and nervous system

Bones in head. Jaw. ATM.

Nerve tissue. Structural organization. Central and peripheral SN. Autonomic nervous system: sympathetic and parasympathetic

Senses.

Nervous System: Nervous Tissue. Central nervous system: Study of whole brain.

The brain stem and spinal cord

Nervous System: Peripheral nervous system: nerve fiber. Spinal and cranial nerves.

Neuroendocrine System: pituitary gland. Epiphysis gland. Thyroid, parathyroid and thymus. Adrenal glands.

7. Visual System



General information about the anatomy of the eye
Ontogeny and development of the visual apparatus
Anatomy of the lining: Retina and optic nerve
Anatomy of the tunica media (uvea)
Anatomy of the external tunic. Cornea and sclera
Refracting media of the eye. Lens and suspensory apparatus
vitreous
Anatomy descriptive of the orbit
Anatomy of the extrinsic eye muscles
Eyelids and conjunctiva
Annexes of the eyeball. The lacrimal apparatus
Study group of the vascularization of the orbit
Topographic anatomy of the orbit
The optical path: papilla, optic nerve, chiasm, optic tracts, or lateral geniculate body, optic radiations and visual cortex

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	60,00	100
Tutorials	15,00	100
Laboratory practices	15,00	100
Development of group work	10,00	0
Development of individual work	10,00	0
Study and independent work	45,00	0
Preparation of evaluation activities	10,00	0
Preparing lectures	40,00	0
Preparation of practical classes and problem	10,00	0
Resolution of case studies	10,00	0
TOTAL	225,00	

TEACHING METHODOLOGY

Theoretical lessons:

Weekly hours of theoretical classroom work will be devoted to the explanation by the teacher of the theoretical content of the course. For a better understanding of the content, the teacher attached material and / or links via internet which may serve to supplement the material referred to the topic. During the lectures will encourage direct discussion between teacher and student on the subject you are explaining. As I finish the syllabus, the teacher will be linking together each of the different parts of the subject through case-theoretical and practical applications that will be solved with the help of students.



PRACTICAL LESSONS

Weekly hours of physical working practices are devoted basically to group work and individual students. In practice, students should be able to work individually and in groups. Through these practices are intended for students to be able to solve problems for which must raise questions, answers and possible solutions.

For this task, students will be divided into groups of 4. In each session the teacher made an introductory exposure to the practice of resting on audiovisual and / or anatomical models. Will be given to students with a set of material that must be completed during the hours of practice. To complement the work, students will have the support of anatomical models and / or audiovisual / technology complementary. The student must be self-sufficient and take active attitude to solve the material / practice released to them. The teacher will solve the doubts that have students and occasionally may make explanations to the whole group or have questions collectively. In the final half hour of each practice, and randomly, students should explain the developments during practice.

Seminar sessions

The hours will face workshops for the presentation and discussion between the student group and the teacher of practical-applicative different cases. The contents of the seminars come supported on the theoretical set out in paragraph V, corresponding to:

- Anatomy of the locomotor
- Systems visceral and functionality
- Nervous System
- Eye Anatomy

To reinforce the learning of the students used different web 2.0 tools that help us to promote the acquisition of skills. These tools are especially helpful for those students who for any reason have committed staff attendance and participation in the different classroom activities.

EVALUATION

Learning will be continuously assessed along the course with a maximum score of 100 points.

To evaluate the practices, attendance is mandatory. Failure to attend two practices involve not get note on this item. Students who attend practices, properly perform the activities assigned in each of them, and carry and deliver the lab notebook will get a maximum of 10 points.

During January 2015 a theoretical and practical evaluation will be conducted with a maximum score of 20 points.

Also, for obtain 10 additional points in the final grade will be required to have attended and completed the work of the seminars (responses cases of seminars, assisting it in the classroom and public exhibition of the same). Students who do not attend and / or perform activities of 2 or more seminars will not get rated on this item.

In the month of May-June 2015 another evaluation will be conducted with a maximum score of 60 points.

The evaluations will consist of short questions, image identification, problem solving, etc..

The final grade will be the sum of previous evaluations and

To pass the asignature in the first round of the course you must obtain 50 points subject to compliance with the requirements of obtaining a minimum of 30 points in the evaluation of the month of May-June 2015.



Students who do not obtain 30 points in the evaluation of the month of May-June 2015 shall be submitted to an evaluation in the second round of the course with a maximum score of 60 points. Students who do not obtain 30 points in the evaluation of the second call of the course will not approve the course.

REFERENCES

Basic

- Referencia b1: Compendio de Anatomía con orientación clínica. Keith, Moore. 2008. Ed Lippincott Williams.
- Referencia b2: Anatomía y fisiología. Estructura y función del cuerpo humano. Gary A Thibodeau. 2007. Elsevier.
- Referencia b3: Manual Básico de Anatomía Humana. V. Smith Agreda, E. Ferres. 2008. Ed. Escuela Valenciana de Estudios de la Salud. Generalitat Valenciana.
- Referencia b4: Hubel, D.H.: Ojo, cerebro y visión. 1999. Servicio de publicaciones de la Universidad de Murcia.
- Referencia b5: Canby CA. Anatomía basada en la resolución de problemas. 2007. Ed: Elsevier Saunders.

10.2 Referencias Complementarias

- Referencia c1: Sobotta. Atlas de anatomía humana. R. Putz y R. Pabst. 2001. Ed. Médica panamericana.
- Referencia c2: Prometheus. Atlas de Anatomía Humana. 2008. Ed. Panamericana.
- Referencia c3: Parker S. El cuerpo humano. 2008. Ed: Akal.