

26800 - Anatomy and Histology

Syllabus Information

Academic year: 2023/24

Subject: 26800 - Anatomy and Histology

Faculty / School: 100 - Facultad de Ciencias

Degree: 297 - Degree in Optics and Optometry

ECTS: 9.0

Year: 1

Semester: Annual

Subject type: Basic Education

Module:

1. General information

The main objective of this subject is the study of the main morphological aspects related to the anatomy, composition and structure of the human visual system. It focuses on the knowledge of the macroscopic and microscopic structure of the human body, with special mention to the visual apparatus. It provides advanced knowledge about the morphology of the different tissues, systems, apparatus and organs that make up the human being.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (<https://www.un.org/sustainabledevelopment/es/>), in such a way that the acquisition of the learning results of the subject provides training and competence to contribute to some extent to their achievement:

Goal 5: Gender Equality.

Goal 11: Sustainable Cities and Communities

Goal 13: Climate Action

Goal 17: Alliances to Achieve Objectives.

2. Learning results

- Be able to describe the development of the human body and in particular the organs of vision.
- Identify and describe the histological elements that compose tissues in microscopic slides.
- List, recognize and refers to the most important anatomical structures, especially those related to the sense of sight
- Identifies, details and relates the anatomical elements that make up the human body in general and, in greater depth, those related to the sense of sight, in models and in anatomical pieces.
- Is able to analyse and synthesize information in a team on topics related to some content about ocular anatomy/histology.

3. Syllabus

Block 1. Histology

1. Concept of morphology. Cell.
2. Embryology: formation of blastoderm sheets.
3. Tissues Classification.
4. Epithelial tissue.
5. Connective tissue
6. Adipose tissue
7. Cartilaginous tissue.
8. Bone tissue.
9. Muscle tissue.
10. Nervous tissue I.

11. Nervous tissue II.
12. Blood. Immune system

Block 2. Embryology

- 13- Organogenesis.
- 14- Embryology of the head I. Development of the central nervous system.
- 15- Embryology of the head II. Development of the head as a whole.
- 16- Craniofacial development.
- 17- Development of the sense organs.
- 18- Development of the vision apparatus.

Block 3. General anatomy

- 19- Introduction to Anatomy, planes and axes.
- 20- Circulatory system I. Heart.
- 21- Circulatory system II
- 22- Respiratory system.
- 23- Digestive system
- 24- Locomotor system I. Neck, spine, lower extremity.
25. Locomotor system II.
26. Endocrine system.
27. Urinary system.
28. Male genital apparatus.
29. Female genital apparatus
30. Integumentary system.

Block 4. Anatomy of the vision system

31. Skull base
32. Cranial vault
- 33- Viscerocranium
34. Orbital fossa.
35. Introduction to the sense of sight
- 36- Anatomy of the eyeball: chambers
37. Tunica intima Retina I
38. Tunica intima Retina II
39. Middle tunica (uvea): choroid.
40. Tunica media ciliary body.
41. Half-iris tunic.
42. Outer tunic: sclera, cornea.
43. Outer tunic: sclera, cornea. Sclerocorneal angle.
44. Refractory media: Crystalline
45. Refractory media: Aqueous humour Vitreous body.
- 46- External vision of the eyeball. Eyebrows
- 47- Eyelids and conjunctiva.
48. Lacrimal system (gland and pathways).
49. Extrinsic musculature.
50. Optic nerve.
51. Sensory innervation.
52. Vegetative innervation of the visual apparatus and related organs.
53. Arterial vascularization of the orbital fossa.
54. Venous drainage of the orbital fossa.
55. Contents of the orbital fossa.
56. Surface anatomy of the sense of sight
57. Anatomy of the central nervous system. Spinal cord. Metameric reflex.
58. Anatomy of the CNS. Spinal cord. Ascending and descending routes.
59. Anatomy of the CNS. Brainstem Motor and sensitive nuclei

- 60. Anatomy of the CNS. Brainstem Reticular formation
- 61. Anatomy of the CNS. Cerebellum
- 62. Anatomy of the CNS. Diencephalon. Thalamus and subthalamus
- 63. Anatomy of the CNS. Diencephalon. Hypothalamus, pituitary, epithalamus, epiphysis
- 64. Anatomy of the CNS. Telencephalon.
- 65. Anatomy of the CNS. Meninges, CSF and cerebral irrigation.
- 66. Visual pathway I.
- 67. Visual pathway II.

4. Academic activities

FACE-TO-FACE ACTIVITIES:

- Lecture in the classroom in its participatory variant (brainstorming, one minute paper, etc).
- Practical activities in the dissection room/microscopy room. Cooperative practices led by an instructor.
- Seminars.
- On-demand tutoring.
- Assessment activities:

NON-FACE-TO-FACE ACTIVITIES:

- Team work sessions (Problem Based Learning, elaboration of educational pills, etc.).
- Discussion forum and other tasks within Moodle.
- Self-assessments.
- Preparation of reports (field and practice reports), papers, oral presentations, etc.
- Consult electronic resources: JOVE videos; Leica virtual microscope; OCW courses, etc.

5. Assessment system

Continuous assessment

4 parts:

- Theoretical (50%)
- Practical (20%)
- Problem-based learning/educational pills (25%)
- Participation in Discussion Forum (5%)

Theoretical: with each block of topics there will be a ten-question multiple-choice exam. Minimum 7 to pass them.

It is only allowed to fail an exam below 7. It must be passed independently of the rest of the activities with an average of 7. Those who do not pass this part will be able to take the final theoretical exam, requiring a minimum of 5 to pass. The parts corresponding to the first and second semesters must be passed individually.

Practices: direct and continuous. Activities to be evaluated: reports, instructor's assessment, completion of Anatomical logbook, etc... Compulsory attendance.

Problem-Based Learning: Cooperative work in small groups. Elaboration of portfolios.

Forum: Quantitative and qualitative assessment of interventions.

Final exam:

If it has not been possible to pass the continuous evaluation:

- Theoretical exam (50%): 60 multiple choice questions and 4 topics to be developed.
- Practical exam (50%): tests related to practices similar to those developed during the term.

Both parts must be passed individually to average out.

