Universidad Zaragoza

Academic Year/course: 2024/25

26802 - Ocular and Visual System Physiology

Syllabus Information

Academic year: 2024/25
Subject: 26802 - Ocular and Visual System Physiology
Faculty / School: 100 - Facultad de Ciencias
Degree: 297 - Degree in Optics and Optometry
ECTS: 6.0
Year: 1
Semester: First semester
Subject type: Basic Education
Module:

1. General information

The main objective of this subject is to understand the normal functioning of the organism, deepening in the human eye and image formation in the cerebral cortex.

To take this subject it is advisable to have previous knowledge of Biology and Biochemistry at baccalaureate level.

It is also desirable to have some essential prior knowledge about the structure and organization of the visual system and the functioning of the eye as an optical system.

2. Learning results

Upon completion of the subject, the student will:

- Describe the function of the apparatuses and systems of the human body and the mechanisms of regulation of the different systems in the physiological variations, with special reference to the visual system.
- Practical determination of physiological parameters
- Perform a report for the evaluation of the visual system under physiological conditions

3. Syllabus

GENERAL HUMAN PHYSIOLOGY: Introduction to Physiology. Cell. Potential. Muscular. Cardiovascular. Respiratory.

Immunity. Hemato. Endocrine. Nervous.

PHYSIOLOGY OF THE VISUAL SYSTEM: Introduction to the eye, Eyelids. Conjunctiva. Tear. Sclera. Cornea. Aqueous humour

Iris and Pupil. Crystalline. Vitreous body. Ocular circulation. Retina. Optic nerve. Central neurophysiology of vision.

Laboratory practices, computer science and problem-based learning: Muscle. Transport, Aqueous humour. Nervous impulse, Cardiovascular. Neuromuscular junction Movement. Endocrine. Neurosensorial face. Oculomotor movements. Cornea and Crystalline. Ocular and vestibular reflexes. Photoreceptors. Stereopsis. OSCE test.

4. Academic activities

The learning process designed is based on:

- Participatory master class
- Laboratory and simulation practices

  All students will be informed about the risks that may be involved in the practices. For more information, check the Occupational Risk Prevention Unit :http://uprl.unizar.es/estudiante.html
- Problem-based learning

- Directed work
- Self-learning: Study, visualization of digital materials of the subject.
- Tutorials scheduled by the teacher in addition to those requested by the students.
- Assessment

5. Assessment system

Continuous evaluation will be:

- **Written exams** (80% of the grade). Each midterm with 30 test questions of 5 options, one correct, passed with 18 points, and short or developmental questions. 50 min.
- **Evaluation of practices** (10%) According to participation, interest and development. More than 2 absences will result in a practical exam.
- **Tutored work** (10%). According to structure, content, documentation, originality, and presentation.

The minimum final passing grade is 5 out of 10 in each part. If it is not passed, the final grade will be that of the part with the lowest grade, without weighting with the rest.

Students who have not passed the continuous evaluation or wish to improve their grade will take a single test, the part of the subject for which they wish to improve their grade.

The **single test** (first and successive calls) will be:

- **Written exam** (80%) will contain 4 short or developmental questions (2 from each midterm). 40 min.
- **Practical exam** (10%) with performance of functional tests. 20 min.
- **Tutored work** (10%). According to structure, content, documentation, originality, and presentation. 10 min.

For subsequent examinations, the part of the subject that has been fully passed (not individual midterm exams) will be saved.

6. Sustainable Development Goals

3 - Good Health & Well-Being
4 - Quality Education