

26760 - Physiology I

Información del Plan Docente

Academic Year	2018/19
Subject	26760 - Physiology I
Faculty / School	104 - Facultad de Medicina 229 - Facultad de Ciencias de la Salud y del Deporte
Degree	304 - Degree in Medicine 305 - Degree in Medicine
ECTS	6.0
Year	1
Semester	First semester
Subject Type	Basic Education

Module

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. It favors the acquisition of knowledge related to Physiology. A wide range of teaching and learning tasks are implemented, such as lectures, practice sessions, and assignments.

Students are expected to participate actively in the class throughout the semester.

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course

syllabus, as well as other course-specific learning materials.

Further information regarding the course will be provided on the first day of class.

4.2.Learning tasks

The course includes 6 ECTS organized according to:

- Lectures (1,52 ECTS): 38 hours.
- Practice sessions (0,6 ECTS): 15 hours.
- Assignments (0,32 ECTS): 8 hours.
- Autonomous work (3,4 ECTS): 85 hours.

4.3.Syllabus

Theoretical program:

1. Concepts of Physiology and Biophysics. Central role of Physiology in Medicine.
2. Homeostasis. Control mechanisms. Biorhythms.
3. Free radicals. Its features and functions
4. Antioxidants mechanisms. Oxidative stress in tissues.
5. Transport through biological membranes.
6. Bioelectric potentials. Ionic basis. Genesis of the action potential.
7. Action potential conduction
8. Transmission of action potential
9. Neurotransmitters and their receptors
10. Neurotransmitters in the autonomic nervous system
11. Biological fluids. Compartments: volume and composition
12. The pH of biological fluids
13. Hormonal action mechanisms
14. Basic principles of bioenergetics: Work. Energy efficiency.
15. Physiological basis of human nutrition
16. Normal dietary requirements and special situations
17. Biophysics and physiology of skeletal muscle
18. Smooth muscle physiology
19. Physiology of the heart muscle
20. Tissue Physiology: Physiology of endothelium

Laboratory practice program (Faculty of Medicine)

1. Transmission of action potential
2. Physiological aging

3. Study of a cell function
4. Muscle metabolism
5. Assessment of nutritional status
6. Elaboration of a diet
7. Practical calculation of nutritional needs
8. Muscle contraction
9. Strategies and learning styles in Physiology

Laboratory practice program (Faculty of Health and Sport Sciences)

1.-Laboratory practices, simulations and problems

- Practice 1. Osmosis
- Practice 2. Valued solutions
- Practice 3. Transmission of the action potential. Potential simulation
- Practice 4. Conceptual map
- Practice 5. Muscle metabolism
- Practice 6. Practical calculation of nutritional needs I and II
- Practice 7. Muscle contraction

2.-Work tutored

3.- Seminar: Functional problem of the maintenance of the electrolyte balance

4.4.Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the "Facultad de Medicina" website and the Degree website (<http://medicina.unizar.es>, <http://moodle2.unizar.es>)

1st Call January, 30 2019

2nd September, 9 2019

Huesca Degree wesite: <https://fccsyd.unizar.es/horarios-y- calendarios-medicina>

4.5. Bibliography and recommended resources

<http://psfunizar7.unizar.es/br13/eBuscar.php?tipo=a>