

26760 - Physiology I

Información del Plan Docente

Academic Year	2016/17
Academic center	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
Course	1
Period	First semester
Subject Type	Basic Education
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

5.2.Learning activities

5.3.Program

Theoretical program:

1. Concepts of Physiology and Biophysics. Central role of Physiology in Medicine.

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2. Homeostasis. Control mechanisms. Biorhythms.
 3. Free radicals. Its features and functions
 4. Antioxidants mechanisms. Oxidative stress in tissues.
 5. Biological fluids. Compartments: volume and composition
 6. The pH of biological fluids
 7. Transport through biological membranes.
 8. Bioelectric potentials. Ionic basis. Genesis of the action potential.
 9. Action potential conduction
 10. Transmission of action potential
 11. Neurotransmitters and their receptors
 12. Neurotransmitters in the autonomic nervous system
 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. Tissue Physiology: Physiology of endothelium
 18. Biophysics and physiology of skeletal muscle
 19. Smooth muscle physiology
 20. Physiology of the heart muscle
- Laboratory practice program
1. Transmission of action potential

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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

5.4.Planning and scheduling

5.5.Bibliography and recommended resources