

HUMAN AND CELL PHYSIOLOGY I

MODULE	CONTENT	YEAR	TERM	CREDITS	TYPE
MEDICINE AND PHARMACOLOGY	HUMAN AND CELL PHYSIOLOGY	2 st	1 st	6 ECTS (4,5 T + 1,5 P)	Obligatory
LECTURER(S)			Postal address, telephone n^o, e-mail address		
<ul style="list-style-type: none"> • Juan Llopis González (T*; P*) • María López-Jurado (T*; P*) • José Luis Quiles Morales (T*; P*) • Julio J. Ochoa Herrera (T*; P*) • Jesús M. Porres Foulquie (T*; P*) • Javier Díaz Castro (T*) • Cristina Sánchez González (T*) • Carlos de Teresa Galván (T*) • M^a Teresa Nestares Pleguezuelo (P*) • M^a Dolores Yago Torregrosa (P*) <p>(T*: Theory; P*: Practice)</p>			<p>Dpt. Physiology, 1st floor, Faculty of Pharmacy. 958243879</p> <p>jllolis@ugr.es; mlopezi@ugr.es; jlquiles@ugr.es; jjoh@ugr.es; jmporres@ugr.es; javierdc@ugr.es; crissg@ugr.es; cdeteresa@ugr.es; nestares@ugr.es; mdyago@ugr.es</p>		
DEGREE WITHIN WHICH THE SUBJECT IS TAUGHT			TUTORING		
Pharmacy			http://www.ugr.es/~fisiougr/tutorias.php		
PREREQUISITES and/or RECOMMENDATIONS (if necessary)					
<p>Recommendations: to have previous basic knowledge (background knowledge of Chemistry, Anatomy and Histology, Biochemistry, Metabolism. A good standard of English and informatics skills are also required.</p>					
BRIEF ACCOUNT OF THE SUBJECT PROGRAMME (ACCORDING TO THE DEGREE ;??)					
The contents are divided in: Introduction to Physiology. Functional organization of the cell. Plasma membrane. Transport across the plasma membrane. - Excitability: nerve fibers and muscle fibers. Nerve Somatic system. Endocrine system.					
GENERAL AND PARTICULAR ABILITIES					
GC9. - To intervene in the activities of promotion of health, prevention of disease, in the individual, familiar and community area with an integral and multiprofessional vision of the process health and disease.					



GC13. - To develop skills of communication and information, both oral and written, to deal with patients and users of the center where it is developed the professional activity. To promote the capacities of work and collaboration in multidisciplinary teams and those related to other sanitary professionals.

GC15. - To recognize the own limitations and the need to support and update the professional competences, giving special importance to the autolearning of new knowledge being based on the scientific available evidence.

EC47. - To know and to understand the structure and function of the human body, as well as the general mechanisms of the disease, molecular, structural and functional alterations and therapeutic tools to restore the health.

OBJECTIVES (EXPRESSED IN TERMS OF EXPECTED RESULTS OF THE TEACHING PROGRAMME)

The above mentioned objectives in this area are focus on promote that the future pharmacist acquires knowledge about the functioning of the human organism. To do so:

- Understanding the physiological processes, analyzing their biological meaning, description, regulation and integration at different levels of organization: cell, organ and body systems in health.
- Establish the basis for understanding the physiological adaptation process taking place due to a continuously changing environment.

DETAILED SUBJECT SYLLABUS

Theory program

- Subject 1. - Introduction to Physiology
- Subject 2. - Functional organization of the cell. Plasma membrane
- Subject 3. - Transport across the plasma membrane
- Subject 4. - Excitability
- Subject 5. - Nerve cells
- Subject 6. - Synaptic transmission
- Subject 7. - The muscle fiber
- Subject 8. - General structure of the nervous system
- Subject 9. - General physiology of receptors
- Subject 10. Somato-visceral sensitivity
- Subject 11. Physiology of vision
- Subject 12. Physiology of hearing and balance
- Subject 13. Physiology of taste and smell
- Subject 14. Control of motor activity I. Motor function in the spinal cord and brainstem
- Subject 15. - Control of motor activity II. Motor function in the cerebellum, basal ganglia and cortex
- Subject 16. - Higher functions of the nervous system
- Subject 17. General organization of the endocrine system
- Subject 18. Neuroendocrine integration
- Subject 19. Thyroid physiology
- Subject 20. Hormonal regulation of metabolism calcium/phosphorus
- Subject 21. Hormonal regulation of growth
- Subject 22. Physiology of the endocrine pancreas
- Subject 23. Physiology of the adrenal gland
- Subject 24. Hormonal regulation of water-salt balance



Laboratory practice program

- Practice 1.- Detailed functional study of different organs and body systems models
- Practice 2.- Transport mechanisms and cell permeability (computer simulation)
- Practice 3.- Neurophysiology of nerve impulses (computer simulation)
- Practice 4.- Gustatory and olfactory receptors.
- Practice 5.- Skeletal Muscle Physiology (simulated).
- Practice 6.- Effect of thyroxine on the basal metabolism (computer simulation)
- Practice 7.- Control of blood glucose. Determining the blood glucose curve

For each academic year, a selection of the above list will be performed at the physiology laboratory.

READING

Print Books on Physiology

- CORDOBA, A. "Fisiología Dinámica". Barcelona: Ed. Masson, 2003.
- COSTANZO, L. S. "Fisiología". 5ª edición. Barcelona: Elsevier Saunders, 2014.
- DVORKIN, M.A. and CARDINALI, D.P. Best & Taylor: Bases Fisiológicas de la Práctica Médica. 14ª edición. Ed. Médica Panamericana, 2010.
- FOX, S. I. Fisiología Humana. 10ª edición. Aravaca (Madrid): Ed. Mc Graw-Hill-Interamericana, 2008.
- GANONG, W. F. Fisiología médica. 21ª edición. México: Ed. Mc Graw-Hill, 2011.
- GUYTON, A.C. and HALL, J.E. Tratado de Fisiología Médica. 13ª edición. Madrid: Ed. Elsevier, 2016.
- LEVY B. KOEPPEN M, STANTON BA. Berne Levy Fisiología. 6a edición. Madrid: Elsevier Mosby; 2009.
- PRESTON R.B., WILSON T.E. Fisiología. Series Editor: Harvey Richard A. Lippincott's Illustrated Reviews. Barcelona: Lippincott Williams & Wilkins. 2013
- RHOADES, R. and TANNER, G.A. Fisiología Médica. Barcelona: Ed. Masson, 2003.
- SILBERNAGL, S. " Fisiología. Texto y Atlas". Ed. Médica Panamericana, 2008.
- SILVERTHORN, D. U. "Fisiología Humana. Un enfoque integrado". 5ª edición Ed. Medica Panamericana, 2014.
- TORTORA, G.J. and DERRICKSON, B. Principios de Anatomía y Fisiología. 13ª edición. Méjico: Ed. Médica Panamericana. 2013.
- TRESGUERRES, J.A.F. y otros, Fisiología Humana. 4ª edición. Madrid: Ed. Interamericana-McGraw-Hill, 2010.

Print Journals

- News in Physiological Sciences
- Physiological Review
- Current Advances in Physiol
- Annual Review of Physiology

RECOMMENDED INTERNET LINKS

- <http://www.the-aps.org/> The American Physiological Society
- <http://physoc.org/> The Physiological Society
- <http://www.seccff.org/> Sociedad Española de Ciencias Fisiológicas
- <http://www.feps.org/> Federación Europea de Sociedades de Fisiología

