

HUMAN ORGANISM ALTERATIONS: FUNCTIONAL TESTS

(approved by the Department Council on 22-may-2017)

| MODULE | CONTENT | YEAR | TERM | CREDITS | TYPE |
|--|---|-----------------|--|---------|---------------------------------------|
| Formation complements: OPTIONAL SUBJECT | Human organism alterations: functional tests | 4 th | 2 nd | 6 ECTS | Optional. 2 groups semivirtuals |
| LECTURER(S) | | | Postal address, telephone n°, e-mail address | | |
| Theory <ul style="list-style-type: none"> • Miguel Moreno Prieto • Carlos de Teresa Galván • Mario Cordero Morales • Jorge Moreno Fernández Laboratory practice <ul style="list-style-type: none"> • M^a Teresa Nestares Pleguezuelo • Carlos de Teresa Galván | | | Department of Physiology, Faculty of Pharmacy, mqmoreno@ugr.es cdeteresa@ugr.es mdcormor@ugr.es jorgemf@ugr.es nestares@ugr.es | | |
| DEGREE WITHIN WHICH THE SUBJECT IS TAUGHT | | | TUTORING AND MEETING | | |
| Degree In Pharmacy | | | <ul style="list-style-type: none"> • Miguel Moreno Prieto Monday, Wednesday and Friday 10.00 - 12.00 • Carlos de Teresa Galván Monday 15.00-16.00 and 19.00-20.00 Tuesday, Wednesday, Thursday and Friday 15.00-16.00 • Mario Cordero Morales Monday 18.00-20.00 • Jorge Moreno Fernández Monday 10.00-11.30 • M^a Teresa Nestares Pleguezuelo First semester: Monday, Wednesday and Friday 12.30-14-30 Second semester: Monday, Wednesday and Friday 09.30-11-30 | | |
| PREREQUISITES and/or RECOMMENDATIONS (if necessary) | | | | | |



It is recommended to have previous basic knowledge (background knowledge of Basic Principles of Chemistry, Physic Applied to Pharmacy, Physic-Chemistry, Human Anatomy and Histology, Structural Biochemistry, Metabolic Biochemistry, Human and Cell Physiology (I and II), Physiopathology. A good standard of English and informatics skills are also required.

BRIEF ACCOUNT OF THE SUBJECT PROGRAMME (ACCORDING TO THE DEGREE

Its study functional tests to evaluate the normal functioning of the systems: Endocrine, Reproductive, Cardiocirculatory, Respiratory, Excretory and Acid-Base Balance Maintenance, Digestive System and Nervous System.

GENERAL AND PARTICULAR ABILITIES

GENERIC SKILLS:

CG10.- To design, to devote and to evaluate reagents, methods and analytical clinical technologies, knowing the basic foundations of the clinical analyses and the characteristics and contents of the judgments of laboratory diagnostics.

CG13.- To develop communication and information skills, both oral and written, to treat with patients and users of the Center where it recovers his professional activity. To promote the capacities of work and collaboration in multidisciplinary equipments and the related ones to other sanitary professionals.

SPECIFIC SKILLS:

CE37.- To develop hygienic-sanitary analyses (biochemical, bromatological, microbiological, parasitological) related to the health in general and with the food and environment especially.

CE47.- 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, syndromic expression and therapeutic tools to restore the health.

CE49.- To know the analytical Technologies related to diagnosis of laboratory, toxins, food and environment.

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

The acquired knowledge will allow to know and to differentiate the tests that are realized for the concrete diagnosis of an alteration of the organism. The advantages and disadvantages will be known of each one of these tests as well as the limitations and interpretation of results. The learning, therefore, will allow to determine the test of choice for every alteration. Hereby there complements each other the knowledge acquired in the subjects of Human and Cell Physiology I and the II, Physiopathology and Clinics Physiology and Biochemistry.

DETAILED SUBJECT SYLLABUS

THEORY PROGRAM (Present Hours)

BLOQUE I ENDOCRINE SYSTEM (3,5 H)

Thematic Unit 1.- Generalities exploration endocrine system

Thematic Unit 2.- Regulation of corporal liquid volumes: exploration of ADH and aldosterone

Thematic Unit 3.-Exploration of hiperglycemic syndrome: diabetes mellitus

Thematic Unit 4.- Functional exploration of Ca and P metabolism

Thematic Unit 5.- Functional study of growth hormone secretion

Thematic Unit 6.- Thyroid function tests

Thematic Unit 7.- Exploration of cortico-suprarrenal function

BLOQUE 2 REPRODUCTIVE SYSTEM (1,5 H)

Thematic Unit 1.- Tests to evaluate the male reproductive system



Thematic Unit 2.- Tests to evaluate the female reproductive system

BLOQUE 3 CARDIOCIRCULATORY SYSTEM (5 H)

Thematic Unit 1.- Functional exploration of cardiac cycle

Thematic Unit 2.- Functional evaluation of cardiac electrical activity: electrocardiogram

Thematic Unit 3.- Functional evaluation of peripheral vascular system

BLOQUE 4 RESPIRATORY SYSTEM (2.5 H)

Thematic Unit 1.- Study of pulmonary ventilation

Thematic Unit 2.- Study of alveolar-capillary diffusion

BLOQUE 5 EXCRETORY SYSTEM AND ACID-BASE BALANCE (2.5 H)

Thematic Unit 1.- Functional tests of renal system

Thematic Unit 2.- Tests to evaluate acid-base balance

BLOQUE 6 DIGESTIVE SYSTEM (2.5 H)

Thematic Unit 1.- Tests to evaluate tube digestive motility

Thematic Unit 2.- Tests to evaluate digestion and absorption

Thematic Unit 3.- Tests to evaluate hepatic function

BLOQUE 7 NERVOUS SYSTEM (2.5 H)

Thematic Unit 1.- Functional study of nervous system I: exploration, analytical techniques and image analysis

Thematic Unit 2.- Functional study of nervous system II: electrophysiological study of nervous system

LABORATORY PRACTICE PROGRAM

Practice 1.- Electrocardiography in humans.

Practice 2.- Spirometry in humans. Pulse oximetry.

Practice 3.- Study of metabolic syndrome.

Practice 4.- Indirect calorimetry

READING

FUNDAMENTAL BIBLIOGRAPHY:

- Gil-Nagel A, Parra J, Iriarte J, Kanner AM. Manual de electroencefalografía. McGraw-Hill Interamericana. 1ª ed. en español 2002.
- Gómez J.M., Soler J: "Manual de pruebas funcionales de endocrinología" 1ª edición, Septem ediciones. Oviedo 2002
- Noguera L, Balcells, A.: "Exploración clínica práctica" 27ª edición, Masson. Barcelona 2011

COMPLEMENTARY BIBLIOGRAPHY:

- García-Conde, J.: "Patología General: Introducción a la medicina clínica" 1ª edición. Ed. Marban. Madrid, 2012
- Harrison: "Principios de Medicina Interna" 18ª edición. Ed. McGraw-Hill-Interamericana, 2012.
- Laso, F.J.: "Patología general: introducción a la medicina clínica" 2ª edición. Ed. Masson, 2010
- Perez Arellano J.L.; Sisinio De Castro "Manual de Patología General" 7ª edición. Ed. Masson Esclvier. Barcelona, 2013

RECOMMENDED INTERNET LINKS

Nervous system

Federico Olóriz Institute



<http://www.ugr.es/>
The W.U.S.M. Neuroscience Tutorial <http://thalamus.wustl.edu/course/>
University of Cornell
<http://www.cornell.edu/>
University of Montpellier <http://www.iurc.montp.inserm.fr/cric/audition/>

Muscle system

Muscle Physiology - Introduction to Muscle
<http://ortho84-13.ucsd.edu/musintro/jump.shtml>
<http://www.biology-pages.info/M/Muscles.html>

Respiratory system

Interpreting Spirometry <http://www.vh.org/Providers/Simulations/Spirometry/InterpSpiro.html>

Cardiovascular system

<http://www.bumc.bu.edu/www/busm/cme/modules/card-keaney/liplow.htm>
<http://www.bumc.bu.edu/www/busm/cme/modules/card-keaney/liplow.htm>
Welcome to CVP - Text & Images <http://sprojects.mmip.mcgill.ca/cvp/>

Digestive system

GI TRACT <http://www.pathguy.com/lectures/guts.htm>

Renal system

Medical Tests of Kidney Function <http://www.niddk.nih.gov/health/kidney/summary/kidtests/kidtests.htm>
Renal Function test <http://student.uq.edu.au/~s004825/d01.htm#Renal Function>

Endocrinology

Endocrine Diseases thyroid, parathyroid adrenal and diabetes. <http://www.endocrineweb.com/>
GraphPad Radioactivity Calculator <http://www.graphpad.com/www/radcalc.htm>
<http://www.biology-pages.info/H/Hormones.html>

SYSTEM FOR ASSESSING THE ACQUISITION OF THE COMPETENCES AND KNOWLEDGE

I. I. Continuous Assessment

This is the default system. Continuous Assessment includes several theory exams which will take place on dates scheduled by the Faculty in coordination with the other subjects offered in the term. Prior to the exam, the lecturer will describe the structure and type of exam questions. Regular attendance to face-to-face (classroom) classes, as well as participation in the on-line learning platform and completion of programmed activities will be also assessed.

The final mark will be calculated according to the following:

Theory: 65%
Laboratory practice: 20%
Programmed activities: 10%
Participation in the learning platform and attendance to classroom: 5%

A minimum mark of 5 (out of 10) in both the theory and laboratory practice sections must be obtained in order to pass the subject.



II. Single Final Assessment

According to the Students Assessment and Qualification Policy of the University of Granada (adopted by the Governing Council on Oct 26, 2016), those students who cannot follow the continuous assessment system due to working, health or disability issues (or any other reason appropriately justified) can apply for a Single Final Assessment. For this purpose, the student will submit a formal request to the Director (Head) of the Department, arguing and proving (with documented evidence) the reason for not being able to follow the continuous system. The submission deadline will be 2 weeks after the beginning of the lectures. In extraordinary circumstances, the starting date for counting the 2-week period will be the enrolment date (policy NCG78/9) and, in this case, the student will have to include the proof of enrolment date when making the request. After ten days without the student receiving a written reply from the Director of the Department, it will be understood that the request has been deemed. In case of denial, the student may file, within one month, an appeal to the Rector, who may delegate this task to the Dean or Director of the Centre, exhausting the administrative proceedings.

For students in the Single Final Assessment system, the final mark will be calculated according to the following:

Theory: 90%

Laboratory practice: 10%

A minimum mark of 5 (out of 10) in both the theory and laboratory practice sections must be obtained in order to pass the subject.

