

(Last update: 30/06/2017)

(Document approved by Department of Anatomy: 28/06/2017)

(Document approved by Department of Histology: 07/06/2017)

MODULE	CONTENT	YEAR	TERM	CREDITS	TYPE
BASIC FORMATION	HUMAN ANATOMY AND HISTOLOGY	1st	1st	6	Compulsory
<b>LECTURE(S)</b>			<b>CONTACT INFORMACION (Postal address, telephone number, email address)</b>		
<p>Dr. D. José Carlos Prados (Anatomy) email: jcprados@ugr.es Teleph.: 958 248 819</p> <p>Dr. D. Francisco Archilla Peña (Anatomy) email: farchila@ugr.es Teleph.: 958 249 850</p> <p>Dr. D. Francisco Arrebola Vargas (Histology) email: fav@ugr.es Teleph. 958 243 515</p>			<p>Department of Anatomy. Faculty of Medicine. <a href="http://anatomiaeh.ugr.es">http://anatomiaeh.ugr.es</a> email: anatomiaeh@ugr.es</p> <p>Department of Histology. Faculty of Medicine. <a href="http://hsitologia.ugr.es">http://hsitologia.ugr.es</a> email: hsitologia@ugr.es</p>		
			<b>TUTORING AND MEETINGS</b>		
			<p>Prof. Prados: <a href="http://anatomiaeh.ugr.es/pages/docencia/tutorias">http://anatomiaeh.ugr.es/pages/docencia/tutorias</a></p> <p>Prof. Archilla: <a href="http://anatomiaeh.ugr.es/pages/docencia/tutorias">http://anatomiaeh.ugr.es/pages/docencia/tutorias</a></p> <p>Prof. Arrebola: Mo, We, Fr 9:30-11:30 h. Faculty of Pharmacy (1st term) Mo, We, Fr 9:30-11:30 h. CIBM (2st term)</p>		
<b>DEGREE WITHIN THE SUBJECT IS TAUGHT</b>					
Degree in Human Nutrition and Dietetics Double Degree in Human Nutrition and Dietetics & Food Sciences and Technology					
<b>PREREQUISITES and/or RECOMMENDATIONS (if necessary)</b>					
Only those that are required for admission.					



**BRIEF ACCOUNT OF THE SUBJECT PROGRAMME (ACCORDING TO VERIFICA PROGRAMME)**

Module 1: Basic Formation: Structure and function of the human body

**GENERALITIES AND PARTICULAR COMPETENCES**

**General competences (GC)**

CG1.2 Develop the profession with respect for other health professionals, acquiring skills for teamwork.

CG8.1 Acquire basic training for the research activity, being able to formulate hypotheses, collect and interpret information for problem solving using the scientific method, and understanding the importance and limitations of scientific thinking in health and nutrition.

**Specific Competences (SC).**

CEM1.2 Know the structure and function of the human body from the molecular level to the whole organism, at different stages of life.

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

Know the macroscopic and microscopic structural organization of the human body at different stages of life.

**DETAILED SUBJECT SYLLABUS**

**HUMAN ANATOMY**

**FIRST PART**

LESSON 1. INTRODUCTION: CONCEPTS; ANATOMICAL TERMINOLOGY

LESSON 2. GENERAL ANATOMY. NEUROLOGY; GENERAL CONCEPTS. SPLASHNOLOGY. GENERAL CONCEPTS.; MUSCULOSKELETAL SYSTEM. GENERAL CONCEPTS.

LESSON 3. NERVOUS SYSTEM. CENTRAL NERVOUS SYSTEM.

LESSON 4. NERVOUS SYSTEM. PERIPHERAL NERVOUS SYSTEM AND AUTONOMIC NERVOUS SYSTEM.

LESSON 5. NERVOUS SYSTEM. TRACTS. GENERAL CONCEPTS.

LESSON 6. DIGESTIVE. STUDY OF MOUTH. ORAL CAVITY.

LESSON7. DIGESTIVE SYSTEM. TEETH. TONGUE. SALIVARY GLANDS

LESSON 8. DIGESTIVE SYSTEM. STUDY OF PHARYNX AND ESOPHAGUS.

LESSON 9. DIGESTIVE SYSTEM. STUDY OF STOMACH AND DUODENUM.

UNIT 10. DIGESTIVE SYSTEM. STUDY OF LIVER AND BILIARY TRACT.

UNIT 11. DIGESTIVE SYSTEM. STUDY OF PANCREAS.



UNIT 12. DIGESTIVE SYSTEM. STUDY OF JEJUNUM AND ILEUM.  
UNIT 13. DIGESTIVE SYSTEM. STUDY OF INTESTINE.

## **SECOND PART**

LESSON 14. CARDIOCIRCULATORY SYSTEM. HEART. CARDIAC CAVITY SYSTEM.  
CARDIAC CONDUCTION SYSTEM.

LESSON 15. CARDIOCIRCULATORY SYSTEM. ARTERIAL AND VEIN SYSTEM.  
LYMPHATIC SYSTEM: COLLECTORS.

LESSON 16. RESPIRATORY SYSTEM. RESPIRATORY TRACT. LUNGS. PLEURA.  
VASCULAR SYSTEM

LESSON 17. URINARY SYSTEM. KIDNEY AND URINARY TRACT.

LESSON 18. GENITAL SYSTEM. STUDY OF MALE AND FEMALE GENITAL SYSTEMS.

LESSON 19. MUSCULOSKELETAL SYSTEM (I). TRUNK, HEAD AND NECK.

LESSON 20. MUSCULOSKELETAL SYSTEM (II). UPPER AND LOWER EXTREMITY

## **PRACTICAL PROGRAM**

Practice 1: Basic anatomy of the brain and spinal cord. Osteology related.

Practice 2: Basic anatomy of the digestive system.

Practice 3: Basic Anatomy of the cardiovascular system (heart) and respiratory (tract and lungs).  
Osteology related.

Practice 4: Basic anatomy of the urinary system.

## **SEMINARS**

Autonomous work.

## **HUMAN HISTOLOGY**

### **THEORETICAL SYLLABUS**

#### **Introduction**

1. Concept of Human Histology. Levels of organization of the human body.

#### **General Human Histology**

2. Epithelial tissue. Generalities. Epithelial tissue lining: classification. Glandular epithelial tissue. Generalities. Exocrine glandular epithelial tissue: classification. Endocrine epithelial tissue: classification.

3. Connective tissue. Generalities. Mesenchyme. Connective tissue components. Structure. Function. Origin. Varieties of connective tissue. Classification.

4. Adipose tissue. General. Unilocular adipose tissue: Generalities and structure. Beige adipose tissue:



Generalities and structure. Brown adipose tissue: Generalities and structure.

5. Cartilaginous tissue. Generalities. Growth and regeneration. Hyaline cartilage tissue. Elastic cartilaginous tissue. Fibrous cartilage tissue.

6. Bone tissue. Generalities. Components of bone tissue: cells and extracellular matrix. Textural varieties of bone tissue.

7. Blood. Generalities. Formed elements. Haematopoiesis.

8. Muscle tissue. Generalities. Skeletal muscle tissue: generalities and structure. Cardiac muscle tissue: generalities and structure. Smooth muscle tissue: generalities and structure.

9. Nervous tissue. Generalities. Neuron. Glia. Nerve fibres.

### **Microscopic Human Organography**

10. General microscopic structure of the circulatory system. Generalities. Arteries. Capillaries. Microcirculation. Veins. Heart.

11. General microscopic structure of the digestive tract. Generalities. Oral cavity. Tongue. Salivary glands. Esophagus. Stomach. Small intestine. Large intestine. Liver. Gallbladder and biliary tract. Exocrine pancreas.

12. General microscopic structure of the respiratory system. Generalities. Nasal cavities. Pharynx. Larynx. Windpipe. Bronchus. Bronchioles. Alveoli. Alveolar-capillary barrier.

13. General microscopic structure of the urinary tract. Generalities. Kidney: nephron and membrane filtration. Ureter. Urinary bladder. Urethra.

14. General microscopic structure of the endocrine system. Generalities. Pituitary gland. Pineal gland. Thyroid gland. Parathyroid glands. Kidney glands. Endocrine pancreas.

15. General microscopic structure of organs of the senses: taste and smell. Generalities. Lingual papillae. Gustatory corpuscles. Olfactory segment.

### **PRACTICAL PROGRAM SYLLABUS**

Histological Processing samples for optical microscopy.

Observation and identification by light microscopy of human tissues.

### **SEMINARS**

Autonomous tutored works.



## READING

### HUMAN ANATOMY

#### Basic books

- MANUAL DE ANATOMÍA HUMANA PARA NUTRICIÓN Y DIETÉTICA (I). J. PRADOS, F. ARCHILLA, C. MELGUIZO, C. VELEZ, M. RIVERA, ED. AVICAM, 2015.
- ESTRUCTURA Y FUNCION DEL CUERPO HUMANO. 14ª ED. G.A THIBODEAU, S.A. ELSEVIER ESPAÑA, 2012
- GRAY. ANATOMIA PARA ESTUDIANTES. RL. DRAKE, A M.W. MITCHELL, A. W VOGL ED ELSEVIER. 3 EDICIÓN. MADRID 2015.

#### Atlas

- ATLAS DE ANATOMÍA HUMANA. SOBOTTA (PUTZ Y PABST). ED. MÉDICA PANAMERICANA. MADRID, 2000.
- ATLAS DE ANATOMÍA HUMANA 5ª ED F. H. NETTER , MASSON, 2011
- PROMETHEUS, TEXTO Y ATLAS DE ANATOMÍA. SCHÜNKE, SCHULTE Y SCHUMACHER. EDIT. MEDICA, 2015

#### Others books

- ANATOMIA HUMANA: DESCRIPTIVA, TOPOGRAFICA Y FUNCIONAL. 11ª ED. H. ROUVIERE; A. DELMAS. MASSON, 2005
- NOMENCLATURA ANATÓMICA ILUSTRADA. H. FENEIS. ED. MASSON. BARCELONA, 2006.

### HUMAN HISTOLOGY

- HISTOLOGÍA BÁSICA. TEXTO Y ATLAS. Junqueira, L.C. y Carneiro, J. 12ª ed. 2015. EDITORIAL MÉDICA PANAMERICANA.
- ATLAS EN COLOR Y TEXTO DE HISTOLOGÍA. Gartner L.P. y Hiatt, J.L. 6ª ed. 2015. EDITORIAL MÉDICA PANAMERICANA.
- HISTOLOGÍA HUMANA. Stevens, A. y Lowe, J. 4ª ed. 2015. EDITORIAL ELSEVIER.
- SOBOTTA HISTOLOGÍA. Welsch, U. 3ª ed. 2014. EDITORIAL MÉDICA PANAMERICANA.
- HISTOLOGÍA. TEXTO Y ATLAS COLOR CON BIOLOGÍA CELULAR Y MOLECULAR. Ross, M.C. y Pawlina, W. 6ª ed. 2013. EDITORIAL MÉDICA PANAMERICANA.
- GENESER HISTOLOGÍA. Brüel, A., Christensen, E.I., Trandum-Jensen, J., Qvortrup, K. y Geneser, F. 4ª ed. 2015. EDITORIAL MÉDICA PANAMERICANA.



## RECOMMENDED INTERNET LINKS

### HUMAN ANATOMY

Department of Human Anatomy of the Granada University . <http://anatomiaeh.ugr.es/pages/enlaces/index>

Anatomic Spanish Society . <http://www.sociedadanatomica.es/>

Anatomy in Internet. <http://www.meddean.luc.edu/lumen/MedEd/GrossAnatomy/anatomy.htm>

European Journal of Anatomy <http://eurjanat.com/web/>

### HUMAN HISTOLOGY

Microscopio Virtual, Universidad de Granada.

<http://150.214.37.106/WebDatabaseClient/dbWebAccount.aspx>

Sistema de Evaluación, Autoevaluación y Encuestas. Departamento de Histología. Universidad de Granada.

[http://fugaz.ugr.es/histo\\_sct/nueva/](http://fugaz.ugr.es/histo_sct/nueva/)

Blue Histology. School of Anatomy and Human Biology. The University of Western Australia.

<http://www.lab.anhb.uwa.edu.au/mb140/>

Interactive Histology Atlas. Health Sciences Center. University of Oklahoma

<https://www.ouhsc.edu/histology/>

## TEACHING METHODOLOGY

- Lectures including schemes on the blackboard and audio-visual system
- Practical classes in the laboratory: osteology and radiology rooms and computer room with virtual microscope.
- Seminars with the use of teaching support material such as software and videos.
- Special student-work directed by the teacher
- Tutorials in which will focus on autonomous work

## ASSESSMENT. ASSESSMENT CRITERIA, CONTRIBUTION OF THE DIFFERENT ACTIVITIES ON THE FINAL MARK, ETC.]

Everything related to the evaluation and qualification will be governed by the Evaluation and Qualification Regulations of the students of the University of Granada, approved on October 26, 2016 (consolidated text), and may be Continuous evaluation, Single final evaluation or Evaluation by incidents

For any situation related to the evaluation and the qualification of the students, the specific norm approved by the University will be followed: **NORMATIVA OF EVALUATION AND RATING OF THE STUDENTS OF THE UNIVERSITY OF GRANADA**. The system of final grades will be expressed numerically, according to the provisions of art. 5 of Royal Decree 1125/2003, of September 5 (BOE September 18), which establishes the



European Credit System and the Qualification System in official university degrees and their validity throughout the national territory. The overall score will correspond to the weighted score of the different aspects and activities that make up the evaluation system.

The grading system will be expressed by numerical grade in accordance with the provisions of article 22 of the Regulations for the Evaluation and Qualification of students of the University of Granada, approved on October 26, 2016 (consolidated text):

- Suspense: 0 to 4.9.
- Approved: 5.0 to 6.9
- Remarkable: 7.0 to 8.9
- Outstanding: 9.0 to 10.0

The mention of "High Honour" may not exceed 5% of the students enrolled in the subject in the corresponding academic year. The "High Honour" will be awarded according to the order in the final grade of the subject.

Human Anatomy and Histology is a shared subject between the Departments of Human Anatomy and Human Histology and to pass it, it is necessary to independently pass the subjects of Human Anatomy and Human Histology. Once the two subjects have been passed, the grade of the subject will be the arithmetical average of the qualifications of both subjects. The qualification of Human Anatomy or Human Histology will not be saved for the following academic year.

## **HUMAN ANATOMY**

### **Continuous assessment:**

The overall score will respond to the weighted score of the different aspects and activities that make up the evaluation system. Will be performed:

- Theory evaluation: oral and / or written test. In the latter case, the test will consist of multiple choice questions (to choose between 5 answers with a correct one and without subtracting points if answered incorrectly) and definition or development questions. The exam will be passed with a score equal to or greater than 50%. This evaluation will constitute 70% of the final grade of the subject corresponding to Human Anatomy. A test will be included, without prior notice, on the subject taught up to that moment with questions similar to those previously described and sheets or diagrams for identification of structures. This test will have a weight of 10% in the theoretical evaluation.
- Evaluation of practices: completion of the practical material of the subject, evaluation of it by means of anatomical images sheets for identification of structures and attendance to practical classes. The exam will be passed with a score equal to or greater than 50%. This evaluation will constitute 30% of the final grade of the subject corresponding to Human Anatomy.

In order to overcome the matter corresponding to Human Anatomy, it is necessary to independently overcome the theoretical part and the practical part. The overcoming of any part of the subject as previously established will be maintained only until the corresponding extraordinary call.

### **Extraordinary evaluation:**

This evaluation will consist of two tests that will be carried out in the same academic act:



- Theoretical exam: test questions to choose between 5 answers, with only one correct and without subtracting points if answered incorrectly and questions of definition or development. It will correspond to 70% of the final grade corresponding to Human Anatomy, as previously described.
- Practical exam: completion of the practical material of the subject and anatomical images sheets for identification of structures. It will correspond to 30% of the final grade corresponding to Human Anatomy, as previously described.

In order to overcome the matter corresponding to Human Anatomy, it is necessary to independently overcome the theoretical part and the practical part.

#### **Evaluation by incidents:**

Students who cannot attend the final evaluation tests or those scheduled in the Teaching Guide with an official date, for any of the circumstances included in article 15 of the Student Evaluation and Qualification Regulations may request an evaluation for incidents from the University of Granada. The coordinating professor of the subject, in agreement with the professors of the same, in his case, will propose an alternative date to develop the affected tests, according to the student or the students involved.

#### **Final single evaluation:**

Those students who so request, in accordance with the Evaluation and Qualification Regulations of the students of the University of Granada, approved on October 26, 2016 (consolidated text), will be entitled to benefit from a single final evaluation. This evaluation will be carried out in the same academic act on the date established by the Centre.

The final single evaluation of Human Anatomy will consist of two tests:

- Theoretical exam: test questions to choose between 5 answers, with only one correct and without subtracting points if answered incorrectly and questions of definition or development. It will correspond to 70% of the final grade corresponding to Human Anatomy.
- Practical exam: completion of the practical material of the subject and anatomical images sheets for identification of structures. It will correspond to 30% of the final grade of the subject corresponding to Human Anatomy.

In order to overcome the matter corresponding to Human Anatomy, it is necessary to independently overcome the theoretical part and the practical part.

## **HUMAN HISTOLOGY**

#### **Continuous assessment:**

The overall score will respond to the weighted score of the different aspects and activities that make up the evaluation system. Will be performed:

- Partial examination of theory: At the end of the theoretical teaching of Human Histology, on the date established by the Center, a written test consisting of multiple choice questions and / or relationship questions and / or short questions and / or drawing will be made or identification of microscopic structures related to theoretical teaching. This test will be passed with a score equal to or greater



than 5. The qualification of this test will have a weight of 60% in the overall score of Human Histology and may be done, provided that; you have attended at least one of the activities of theory.

- Partial exam of practices: At the end of the practical teaching of Human Histology, on the date established by the Center, a written test consisting of multiple choice questions and / or relationship questions and / or short questions and / or drawing will be made. or identification of microscopic structures related to practical teaching. This test will be passed with a score equal to or greater than 5. The score of this test will have a weight of 20% on the overall score of Human Histology and may be performed, provided that; you have attended at least one of the activities of practices.
- Activities: During the development of the theoretical and practical teaching, and without prior notice, activities will be carried out with questions on the theoretical and practical teaching imparted up to that moment. The qualification of these activities will have a weight of 20% in the global qualification of Human Histology, as long as the partial examination of theory and practices is passed. Attendance to at least one of activities developed during the theoretical teaching and to at least one of the activities developed during the practical teaching will be essential to be able to perform the partial examination of theory and practices, respectively.

To pass the continuous assessment, it is necessary to overcome the theoretical and practical part independently. The passing of any part of the subject as previously established will be maintained only until the corresponding extraordinary call.

All those students that in the continuous evaluation do not manage to overcome some of the parts of the Human Histology subject or who do not fulfill the requirements of the continuous assessment, will be able to attend, on the date established by the Center, the ordinary evaluation test and / or extraordinary to recover that part not exceeded.

The ordinary and / or extraordinary evaluation tests will consist of two tests that will be carried out in the same academic act on the date established by the Center:

- Theoretical exam: Written test consisting of multiple choice questions and / or relationship questions and / or short questions and / or drawing or identification of microscopic structures related to theoretical teaching. This test will be passed with a score equal to or greater than 5. The score of this test will have a weight of 60% in the overall score of Human Histology.
- Practical exam: Written test consisting of multiple choice questions and / or relationship questions and / or short questions and / or drawing or identification of microscopic structures related to practical teaching. This test will be passed with a score equal to or greater than 5. The score of this test will have a weight of 20% in the overall score of Human Histology.

The qualification of the activities carried out during the development of the theoretical and practical teaching are saved for the ordinary and / or extraordinary evaluation and will have a weight of 20% in the global qualification of Human Histology, as long as the theoretical and practical part is exceeded independently in the ordinary and / or extraordinary evaluation.

#### **Evaluation by incidents:**

Students who cannot attend the final evaluation tests or those scheduled in the Teaching Guide with an official date, for any of the circumstances included in article 15 of the Student Evaluation and Qualification Regulations may request an evaluation for incidents from the University of Granada. The coordinating



professor of the subject, in agreement with the professors of the same, in his case, will propose an alternative date to develop the affected tests, according to the student or the students involved.

**Final single evaluation:**

Those students who so request, in accordance with the Evaluation and Qualification Regulations of the students of the University of Granada, approved on October 26, 2016 (consolidated text), will be entitled to benefit from a single final evaluation. This evaluation will be carried out in the same academic act on the date established by the Center.

The final single evaluation of Human Anatomy will consist of two tests:

- Theoretical exam: Written test consisting of multiple choice questions and / or relationship questions and / or short questions and / or drawing or identification of microscopic structures related to theoretical teaching. This test will be passed with a score equal to or greater than 5. The score of this test will have a weight of 70% in the overall score of Human Histology.
- Practical exam: Written test consisting of multiple choice questions and / or relationship questions and / or short questions and / or drawing or identification of microscopic structures related to practical teaching. This test will be passed with a score equal to or greater than 5. The score of this test will have a weight of 30% in the overall score of Human Histology.

To pass the final single evaluation corresponding to Human Histology, it is required to independently overcome the theoretical part and the practical part independently.

The passing of any part of the subject as previously established will be maintained only until the corresponding extraordinary call.

**FURTHER INFORMATION**

We are making great efforts to avoid formol in practice rooms.

