1. BASIC INFORMATION

Course	Human Body Structure and Function II
Degree program	Physical Activity and Sport Sciences
School	Medicine Health and Sports
Year	First
ECTS	6
Credit type	mandatory
Language(s)	Spanish and English
Delivery mode	On-site and online
Semester	S2
Academic year	2025/26
Coordinating professor	Francisco Javier Pardo Gil

2. PRESENTATION

The need to know how our organism is and how it works is the overall objective of this subject. The joint study of the structure and functioning of each of its components provides us with a solid basis for understanding how some systems interact with others in the development of our vital functions. The two main basic sciences that constitute the pillars of this subject are human physiology and anatomy. Based on them, we present the contents of the subject to make an approach as holistic as possible that allows us to understand this complex machine that is our body. The contents of this course are based on those addressed in the course of structure and function I, focusing now on some of the systems that are more directly involved during the practice of physical activity, such as the skeletal muscle, the cardiovascular system or the respiratory system. This subject should be the basis on which to develop in subsequent courses the knowledge of the responses and adaptations associated with the practice of physical activity both in healthy people and in people with chronic pathologies

3. LEARNING OUTCOMES

Knowledge

KON1. Identifies the anatomical structures and functions of the various systems of the human body and consider pathophysiology to determine its applicability and development through physical exercise.

- Identifies the upper airways and lower airways, and the structure and location of the lungs in the basic physiological mechanism of respiration.
- Studies the anatomical and physiological mechanism of muscle contraction, identifying the anatomical structures involved in regulating muscle contraction.

- Identifies the main organs used for chewing, swallowing and digestion in the human nutrition process.

- Classifies the main organs of the urinary/excretory/renal system in humans.

Skills

AB01. Examines the anatomy and the functions of the various systems or structures and consider the extent to which they, along with pathophysiology, influence responses to physical exercise.

- Analyses the functional structure of the heart and blood vessels in the anatomical and physiological mechanism of blood circulation.
- Examines the macroscopic and microscopic structure of muscles, identifying the connective tissues related to muscle structure and function.

Competences

COMP5. Develop the expertise to lead, plan and implement physical exercise and fitness programmes, and conduct technical/scientific evaluations of them, based on scientific evidence, in different fields, contexts and activities for the entire population, with a focus on particular groups such as senior citizens (the elderly), schoolchildren, people with disabilities and people with diseases, health problems or similar conditions (diagnosed and/or prescribed by a physician), taking into account gender and diversity considerations.

COMP6. Develop the expertise to identify, communicate and apply anatomical, physiological and biomechanical scientific principles in order to develop and carry out appropriate procedures, strategies, initiatives, activities and guidance, as well as conduct technical/scientific evaluations of them; ultimately to prevent and/or minimise the health risks to which all groups of the population are exposed in the practice of physical activity and sport.

COMP11. Analyse, identify, assess, promote, adapt and evaluate strategies, initiatives and activities that prompt the public to adopt active lifestyles and engage in the regular and healthy practice of physical activities, sports and exercises in an appropriate, effective and safe way; in a bid to improve their overall health, well-being and quality of life, and with a focus on particular groups such as senior citizens (the elderly), schoolchildren, people with disabilities and people with diseases, health problems or similar conditions (diagnosed and/or prescribed by a physician), taking into account gender and diversity considerations.

COMP38. Digital competence. Use information and communication technologies to search for and analyze data, research, communicate and learn.

COMP40. Teamwork. Cooperate with others in shared academic or professional objectives, participating actively, empathically and exercising active listening and respect for all members.

COMP41. Critical analysis. Integrate analysis with critical thinking in a process of evaluating different ideas or professional possibilities and their potential for error, based on evidence and objective data that lead to effective and valid decision-making.

4. CONTENT

Topic 1. The cardiovascular system: the location, anatomical structure and functions of the heart, blood vessels and blood circulation.

Topic 2. The respiratory system and basic mechanism of respiration: the location, anatomical structure and functions of the airways and lungs.

Topic 3. The musculoskeletal system: a study of the macrostructure and microstructure of the skeletal muscle.

Topic 4. Nervous regulation of muscle contraction.

Topic 5. The digestive system: the location and anatomical structure of the organs used for swallowing and of the gastrointestinal tract, and the function of nutrition in humans

Topic 6. The urinary/excretory system: the location, anatomical structure and functions of the renal system

5. TEACHING-LEARNING METHODOLOGIES

The types of teaching-learning methodologies used are indicated below:

- Lecture
- Simulation
- Project-based learning

6. LEARNING ACTIVITIES

Listed below are the types of learning activities and the number of hours the student will spend on each one:

Campus-based mode:

Learning Activity	Number of hours
Master classes	10
practical application classes	20

Autonomous work	56
Debates and colloquiums	8
presential evaluation tests	2
Tutoring	12
Written reports	22
Activities in workshops and/or laboratories	20
TOTAL	**150**

Online mode:

Learning Activity	Number of hours
Synchronous virtual master classes	10
Synchronous virtual classes of practical application	20
Written reports	22
Activities in workshops and/or laboratories	20
Autonomous work	56
Synchronous virtual academic tutoring	12
Virtual forums	8
presential evaluation tests	2
TOTAL	**150**

7. ASSESSMENT

Listed below are the assessment systems used and the weight each one carries towards the final course grade:

Campus-based mode:

Assessment system	Weight
Presential evaluation tests	45%
Workshop-laboratory practice notebooks	50%
Reports and writings	5%

Online mode:

Assessment system	Weight
Presential evaluation tests	45%
Workshop-laboratory practice notebooks	50%
Reports and writings	5%

When you access the course on the *Campus Virtual*, you'll find a description of the assessment activities you have to complete, as well as the delivery deadline and assessment procedure for each one.

7.1. First exam period

To pass the course in the first exam period, you must obtain a final course grade of at least 5 out of 10 (weighted average).

In any case, you will need to obtain a grade of at 5.0 in the final exam in order for it to count towards the final grade along with all the grades corresponding to the other activities.

7.2. Second exam period

To pass the course in the second exam period, you must obtain a final grade of at least 5 out of 10 (weighted average).

In any case, you will need to obtain a grade of at 5.0 in the final exam in order for it to count towards the final grade along with all the grades corresponding to the other activities.

The student must deliver the activities not successfully completed in the first exam period after having received the corresponding corrections from the professor, or those that were not delivered in the first place.

8. SCHEDULE

This table shows the delivery deadline for each assessable activity in the course:

Assessable activities	Deadline
Activity 1. Cardiovascular system laboratory practice: Blood Pressure.	Week 3-4
Activity 2. Laboratory practice: Respiratory System. Spirometry	Week 5-7
Activity 3. Objective multiple-choice test	Week 8
Activity 4. Simulated laboratory (Labster): skeletal muscle.	Week 9-12

Activity 5. Digestive system work: digestion and absorption during physical activity.	Week 13-15
Activity 6. Renal function workshop	Week 18
Activity 7. Final test	Week 19

This schedule may be subject to changes for logistical reasons relating to the activities. The student will be notified of any change as and when appropriate.

9. BIBLIOGRAFÍA

The main reference work for this subject is:

- Tortora, G.J., Derrickson, B. (2022). Principles of Anatomy and Physiology. Madrid. Panamericana

The recommended Bibliography is:

- Berne y Levy.(2018) Physiology. Ed. Elsevier
- Drake, R.L. GRAY. 5ª ed. (2024). Anatomy for students. ELSEVIER
- Escuredo, B., Sánchez, J.M., Borrás, F.X., & Serrat, J. (2002). Estructura y función del cuerpo humano. McGraw-Hill Interamericana.
- Guyton-Hall (2016). Medical Physiology. Elsevier
- Marieb, E.N. (2008). Human Anatomy and Physiology. Pearson Education
- Patton, K. T., & Thibodeau, G. A. (2021). Anatomy and Physiology. Elsevier.
- Silverthorn (2014) Human Physiology: An Integrated Approach. Panamericana

10. EDUCATIONAL GUIDANCE AND DIVERSITY UNIT

From the Educational Guidance and Diversity Unit we offer support to our students throughout their university life to help them reach their academic achievements. Other main actions are the students inclusions with specific educational needs, universal accessibility on the different campuses of the university and equal opportunities.

From this unit we offer to our students:

1. Accompaniment and follow-up by means of counselling and personalized plans for students who need to improve their academic performance.
2. In terms of attention to diversity, non-significant curricular adjustments are made in terms of methodology and assessment for those students with specific educational needs, pursuing an equal opportunities for all students.
3. We offer students different extracurricular resources to develop different competences that will encourage their personal and professional development.

4. Vocational guidance through the provision of tools and counselling to students with vocational doubts or who believe they have made a mistake in their choice of degree.

Students in need of educational support can write to us at:

orientacioneducativa@universidadeuropea.es

11. ONLINE SURVEYS

Your opinion matters!

The Universidad Europea encourages you to participate in several surveys which help identify the strengths and areas we need to improve regarding professors, degree programs and the teaching-learning process.

The surveys will be made available in the “surveys” section in virtual campus or via e-mail.

Your assessment is necessary for us to improve.

Thank you very much for your participation.