

COURSE OUTLINE

(1) GENERAL

SCHOOL	PHYSICAL EDUCATION & SPORT SCIENCE		
DEPARTMENT	PHYSICAL EDUCATION & SPORT SCIENCE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	AB-102YΠ	SEMESTER	Spring
COURSE TITLE	Human Physiology		
TEACHING ACTIVITIES		TEACHING HOURS PER WEEK	ECTS
Lectures		3	6
Laboratory exercises		1	
COURSE TYPE	Compulsory		
PREREQUISITE COURSES:	-		
TEACHING AND EXAMS LANGUAGE:	Greek		
OFFERED TO ERASMUS STUDENTS	Yes – Directed Study		
WEBPAGE (URL)	https://eclass.uoa.gr/courses/PHED131/		

(2) LEARNING OUTCOMES

Learning outcomes
<p>The objective of the course is to provide the student knowledge on how human body functions, responds, and adapts to everyday challenges. The course focuses primarily on systemic physiological mechanisms in healthy conditions. It also introduces the function and integration of physiological systems as those affected by changes in the internal (e.g., disease), and external (e.g., exercise) environment.</p> <p>Upon the completion of the course, the student should be able to describe:</p> <ul style="list-style-type: none"> - The structure of the human body, and the principle of homeostasis - The function of neural, muscular, respiratory and cardiovascular systems - How different systems interact to maintain homeostasis
General skills
<ul style="list-style-type: none"> - Search, analysis, and synthesis of data and information, using the necessary technologies. - Critical thinking. - Digital literacy. - Generation of new research ideas. - Promotion of free, creative, and inductive thinking. - Respect for the natural environment and sustainability.

(3) COURSE CONTENT

<p>Teaching units:</p> <ol style="list-style-type: none"> 1. Introduction to physiology; the principle of homeostasis 2. Chemical composition of the body 3. The cell structure, and metabolism 4. Nerve cells and electrical signaling 5. Synaptic transmission and neural integration 6. Neurophysiology: central nervous system, sensory systems, and autonomic and motor systems

7. Muscle physiology: skeletal muscle structure, the mechanism of skeletal muscle contraction, skeletal muscle metabolism, and control of skeletal muscle activity
8. Cardiovascular physiology: heart, blood, blood flow and blood pressure
9. Respiratory physiology: pulmonary ventilation, and gas exchange and regulation of breathing
10. Regulation of energy metabolism and growth

(4) TEACHING AND LEARNING METHODS - EVALUATION

TEACHING METHODS	In person		
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	<ul style="list-style-type: none">- Support of the learning process through the e-class online platform.- Use of a projector for PowerPoint presentations in teaching.- Use of email for communication with students.- Information retrieval from international scientific databases (e.g., PubMed).		
TEACHING ORGANIZATION	Activity	Semester Load	
	Lectures	39	
	Laboratory exercise	13	
	Independent study	94	
	Written examination	2	
	Individual communication with the instructor	2	
	Course Total	150	
STUDENT EVALUATION	<p>The final grade is based on:</p> <ol style="list-style-type: none">1. Individual Project Work (20%): Each student, at the beginning of the course, is assigned by the teacher a topic on human physiology, and is requested to deliver a written assignment (2-3 pages maximum).2. Written Individual Examination (80%): It may include multiple-choice and short-essay questions. <p>The exam content, procedures, and evaluation criteria are communicated to students during lectures, outlined in the course syllabus, and announced through the e-class online learning platform.</p>		

(5) SUGGESTED REFERENCES

Suggested references:

1. Stanfield C. (2016). *Principles of Human Physiology* (6th edition). Pearson Inc.
2. Widmaier E.P., Raff H., Strang K.T. (2022). *Vander's Human Physiology: The Mechanisms of Body Function* (16th edition). McGraw Hill Inc.

Suggested Journals:

- The Journal of Physiology: <https://physoc.onlinelibrary.wiley.com/journal/14697793>.
- Experimental Physiology: <https://physoc.onlinelibrary.wiley.com/journal/1469445X>.
- American Journal of Physiology-Regulatory, Integrative & Comparative Physiology: <https://journals.physiology.org/journal/ajpregu>.
- Journal of Applied Physiology: <https://journals.physiology.org/journal/jappl>.
- European Journal of Applied Physiology: <https://link.springer.com/journal/421>.