

COURSE OUTLINE

(1) GENERAL

SCHOOL	NATURAL SCIENCES		
ACADEMIC UNIT	BIOLOGY		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	BIO_EY03	SEMESTER	5 th
COURSE TITLE	ANIMAL PHYSIOLOGY I		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>	WEEKLY TEACHING HOURS	CREDITS	
Lectures, Laboratory Exercises	3 (lec) + 3 (lab/ 2 nd week)	6	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Field of Science Skills Development		
PREREQUISITE COURSES:	NO		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	NO		
COURSE WEBSITE (URL)	https://eclass.upatras.gr/courses/BIO228/		

(2) LEARNING OUTCOMES

<p>Learning outcomes</p> <p><i>The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i>
<p>Understanding the basic principles of physiological functions of human and animals.</p> <p>At the end of this course the student will be able to address issues of the basic principles of homeostasis, the structure & function of nervous system, including neurotransmission, the basic principles of sensory, motor and autonomous nervous system.</p> <p>Additionally will understand the molecular mechanisms of muscle contraction and excitability</p>
General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology	Project planning and management
Adapting to new situations	Respect for difference and multiculturalism
Decision-making	Respect for the natural environment
Working independently	Showing social, professional and ethical responsibility and sensitivity to gender issues
Team work	Criticism and self-criticism
Working in an international environment	Production of free, creative and inductive thinking
Working in an interdisciplinary environment
Production of new research ideas	Others...

At the end of the course, the student will have developed the following skills/competences:

1. Understand the organization of the brain
2. Understand the basic principles of neural and muscle excitability
3. Differentiate between muscle cell types
4. Perform laboratory based experiments, to familiarize himself with basic laboratory equipment in order to measure physiological parameters e.g. osmosis, active Na⁺ transport, reflexes etc.
5. Observe microscopic slides of the nervous system (brain slices of cerebellum, cortex, spinal cord, ganglia etc) and muscular system (smooth, skeletal, and heart muscle, neuromuscular synapses)
6. Work as part of a team, capable of planning, execute and record experimental procedures/data

(3) SYLLABUS

1. Cellular membranes and transmembrane transport.
2. Resting membrane potentials. Action potentials.
3. Synaptic transmission.
4. Membrane receptors.
5. Signal transduction pathways.
6. Organization of the nervous system.
7. The general sensory, motor, autonomous nervous system.
8. Higher functions of the nervous system.
9. Types of muscle cells
10. Molecular basis of contraction

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face to face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Support of educational procedure with use of the e-class electronic platform	
TEACHING METHODS <i>The manner and methods of teaching are described in detail. Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i>	Activity	Semester workload
	Lectures (13 weeks x 3 hours per week)	39
	Laboratory exercises (5 weeks x 3 hours per week)	15
	Home study, reading bibliography	96

<p>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</p>	<p>Course total</p>	<p>150</p>
<p>STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i></p> <p><i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>1) Written exams (at the semester's end), in Course theory, accounting for the 80% of the Final Grade. 2) Laboratory exams (at the semester's end), accounting for the 20% of the Final Grade.</p> <p>Final Course Grade: Theory Grade x 0.8 + Laboratory Grade x 0.2</p> <p>Grading scale: 1-10. Passing grade: 5 Grading: 3 correspond to ECTS grade F. Grade 4 corresponds to ECTS grade FX. Passing grades correspond to ECTS grades as follows: 5=E, 6=D, 7=C, 8=B, 9=A.</p>	

(5) ATTACHED BIBLIOGRAPHY

<p>- Suggested bibliography: - Related academic journals:</p> <ol style="list-style-type: none"> 1. Vander, A., Sherman, J., Luciano, D. and Tsakopoulos M. « Human Physiology ». (in greek). Vol. I, Paschalidis Med. Publ., Athens, 2001. 2. Sherwood L. « Introduction to Human Physiology » (in greek) Acad. Publ. Basdra & so on, Alexandroupolis 2016. 3. Berne R.M. & Levy M.N.: « Principles of Physiology ». Vol I. (in greek). Publications of University of Crete, Crete 1999
