

COURSE LAYOUT

1. GENERAL

SCHOOL	ANIMAL BIOSCIENCES		
DEPARTMENT	ANIMAL SCIENCE		
STUDY LEVEL	B.Sc. - CORE CURRICULUM COURSE		
COURSE CODE	0235	SEMESTER	4^o
COURSE TITLE	PHYSIOLOGY OF FARM ANIMALS		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	ECTS
Theory: Lectures		3	
Laboratory		3	
			6
COURSE TYPE	Field of Science - Scientific region		
PREREQUISITES	CELL AND MOLECULAR BIOLOGY, ANIMAL ANATOMY AND HISTOLOGY		
LANGUAGE	GREEK		
IS THE COURSE OFFERED for ERASMUS STUDENTS?	YES		
COURSE WEB PAGE (URL)	https://mediasrv.aua.gr/eclass/courses under construction		

2. LEARNING RESULTS

Learning Outcomes
<p>The course Physiology of Farm Animals describes the physiological mechanisms involved in body function. The course modules aims to present the biological principles involved in animal body functions at molecular, cellular, tissue, organ and system level. It aims to present and describe the physiological mechanisms of function, control and interactions involved in homeostasis.</p> <p>Upon completion of the course the student should be in a position to:</p> <ul style="list-style-type: none"> • Comprehend animal function. • Combine knowledge related to function derived from other courses, such as Physics, Biochemistry, Biology, Anatomy and Histology • Understand the complexity of body functions, the interactions between various systems and the control mechanisms involved in the preservation of homeostasis, animal health and production. • Identify and analyse physiology parameters and mechanisms. <p>According to Bloom a student should be in a position to:</p> <ol style="list-style-type: none"> 1. Describe animal physiology and recognize dysfunctions. [KNOWLEDGE] 2. Detect comparative functional implications for different animal species. [UNDERSTANDING] 3. Examine physiological mechanisms and attribute these in body systems and animal species. [APPLICATION] 4. Combine physiological parameters and literature and differentiate between organs and systems involved for each animal species. [ANALYSIS] 5. Describe and explain animal physiology. [SYNTHESIS] 6. Compare animal species function, evaluate and comprehend their structural and functional differences. [EVALUATION]

General Competence

- *Search, analysis and synthesis of data, using the required technologies*
- *Autonomous work*
- *Teamwork*
- *Promotion of free, constructive and inductive thinking*

3. COURSE CONTENT

- Cellular and molecular basis of physiology. Homeostatic mechanisms.
- Nervous system function. Sensory organs function.
- Autonomic nervous system function. Neurotransmitters and receptors.
- Endocrine system function. Hormone synthesis, secretion and mechanisms of actions.
- Muscle function. Muscle energy sources.
- Bone physiology. Osteogenesis and bone growth.
- Blood and lymph circulatory system physiology.
- Gastrointestinal system physiology: movement, secretion, digestion and absorption. Neuro-hormonal regulation of gastrointestinal function. Functional differences between ruminants and monogastric species. Liver and pancreas functions.
- Respiratory system physiology. Thermoregulation.
- Urinary system physiology. Acid-base balance.
- Male and female genital systems physiology.
- Skin and mammary gland physiology.
- Avian physiology.

4. TEACHING AND LEARNING METHODS - Evaluation

TEACHING METHOD	In class, face to face.	
USE OF INFORMATICS and COMMUNICATION TECHNOLOGIES	PowerPoint presentations, multimedia and world wide web. Laboratory practice using physiology simulation software. Student learning support by e-class. Communication with students via e-mail.	
TEACHING ORGANISATION	Activities	Work load per semester (hrs)
	Lectures	39
	Laboratory practice	36
	Literature search and analysis	25
	Self study	50
	Total Course (25 hours workload per credit unit)	150
STUDENTS EVALUATION	<p>Evaluation language: Greek</p> <p>Evaluation method: Written final examination</p> <p>I. Theory (T): 60% of the final exam with short and extensive answer and multiple choice questions.</p> <p>II. Laboratory (L): 40% of the final exam with short and extensive answer and multiple choice questions.</p> <p>Final score: (T)+(L) = 60+40=100% of the total final score.</p> <p>Erasmus students are examined orally and with written assignments in English.</p>	

5. BIBLIOGRAPHY

-Proposed Literature:

- Θεοδωρόπουλος Γ., Χαδιώ-Μάντζαρη Στ., Μπαλάσκας Χρ., Οικονομόπουλος Ι. Λειτουργική Ανατομική και Φυσιολογία των Ζώων. ISBN-13: 978-618-80647-8-2 Εκδόσεις Υτορία. Αθήνα, 2014.
Επιμέλεια- Μετάφραση του Functional Anatomy and Physiology of Domestic Animals, 4th edition, W.O. Reece, Wiley-Blackwell.
- Klein B.G. Cunningham's Textbook of Veterinary Physiology. 6th edition, Elsevier, 2019.
- Noakes D.E., Parkinson T.J., England G.C.W. Veterinary reproduction and obstetrics. 10th edition. Elsevier, 2019.
- Bowden S.J. Introduction to veterinary anatomy and physiology workbook. 2nd edition, Elsevier, 2009.

-Related Scientific journals (non-exhaustive list):

Cell
Nature
Nature-Cell Biology
Nature-Structural Biology
Journal of Comparative Physiology
Animal Physiology
Journal of Endocrinology
Animal Reproduction Science