

COURSE LAYOUT

1. GENERAL

SCHOOL	Animal Biosciences		
DEPARTMENT	Animal Science		
STUDY LEVEL	Bachelor		
COURSE CODE	125	SEMESTER	1 st and 3 rd
COURSE TITLE	Animal Breeding and Husbandry		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	ECTS
Theory		2	2
Laboratory Practicals		2	2
			4
COURSE TYPE	Field of Science		
PREREQUISITES	-		
LANGUAGE	Greek		
IS THE COURSE OFFERED for ERASMUS STUDENTS?	No		
COURSE WEB PAGE (URL)	https://mediasrv.aua.gr/eclass/courses/EZPY125/		
TEACHING STAFF	Theory: Charismiadou M., Koutsouli P., Karakatsouli N. Laboratory: Charismiadou M., Theodorou G., Goliomytis M., Laliotis G., Simitzis P., Hager A., Koutsouli P., Kominakis A.		

2. LEARNING OUTCOMES

Learning Outcomes

The course "Animal Breeding and Husbandry" aims to familiarize students, in theoretical and practical level, with the contemporary physiological aspects applied in husbandry of large, small ruminants and aquaculture principles.

In particular, lectures and practice focus on the understanding of:

- The necessary conditions for an efficient farming, the possibilities of development and the perspectives of dairy, beef, sheep and goat production through the estimation of the global livestock (live animals, meat and milk production).
- The characteristics of the most common breeds of cow, sheep and goat with the intention of their evaluation through the appropriate breeding systems.
- The factors that influence the conception rate, the duration of gestation and parturition but also the factors used for the estimation of the reproductive potential (prolificacy rate, viability rate, profitability rate).
- The factors that affect the process of milk production, the growth of mammary gland and the development of lactation in ruminants.
- The factors that influence carcass and meat production in ruminants.
- The productive systems of aquaculture.

General Competences

<ul style="list-style-type: none"> • Individual and group work • Producing new research ideas • Promotion of free, creative and inductive thinking

3. COURSE CONTENT

Cattle, sheep and goat farming: Origin. Breeds, meat productive, milk productive, dual purpose productive and indigenous breeds. Animal farming in Greece, Europe and Worldwide. Management of cattle, sheep and goat breeding.

Hardy – Weinberg principle. In-breeding. Genotypic, phenotypic and breeding value. Heritability. Response to selection. Heterosis. Cross breeding. Selection index. Progeny test.

Basics, estimation of growth. Muscle tissue and adipose tissue, myogenesis, texture, growth and affecting factors on muscle and adipose tissue growth and protein metabolism. Body composition. Fattening efficiency, growth rate, feed conversion. Meat quality. Chemical composition. Physical, chemical and organoleptic characteristics. Problems on meat quality.

Applied animal reproduction: basic elements of female and male reproductive system. Life cycle, spermatogenesis, ovogenesis, insemination. Differentiation of sexes. Hormones, control of estrous cycle, control of puberty and seasonality.

Structure of the udder. Morphology and texture of mammary gland. Milk composition. Growth and evolution of mammary gland. Hormonal regulation. Milk synthesis and secretion. Initiation and maintenance of lactation. Factors affecting lactation

The productive systems of aquaculture.

4. TEACHING and LEARNING METHODS - Evaluation

TEACHING METHOD	In class, face to face.	
USE OF INFORMATICS and COMMUNICATION TECHNOLOGIES	PowerPoint and video presentations. Communication with students via e-mail. Teaching support through access to the e-class platform, to on-line databases etc.	
TEACHING ORGANISATION	Activities	Work load per semester
	Lectures	26
	Laboratory practice	26
	Individual study of students	48
	Total work load (25 h work load per ECTS)	100
STUDENTS EVALUATION	<p>The evaluation on the course’s theory consists of:</p> <ol style="list-style-type: none"> 1. final written examination on the course’s theory (100%), consisting of: <ol style="list-style-type: none"> I. Evaluation of elements of the course’s theory II. Short-answer questions 	

	<p>III. Multiple choice questions</p> <p>2. Personal written essay and its presentation</p> <p>The evaluation on the course's laboratory practice is determined by the final written examination (100%) consists of:</p> <p>I. Evaluation of elements of the course's laboratory practice</p> <p>II. Short-answer questions</p> <p>III. Multiple choice questions</p>

5. BIBLIOGRAPHY

Proposed Literature:

- 1) Meat Science.
- 2) Journal of Animal Science (πχ F. N. Owens et al, (1993), Factors that alter the growth and development of ruminants, J. Anim. Sci. 71, 3138-3150).
- 3) Journal of Animal Physiology and Nutrition (πχ Y. A. Attia et al (2014), Growth performance, carcass quality, biochemical and haematological traits and immune response of growing rabbits as affected by different growth promoters, J. Anim. Phys. and Nutr. 98 (1) 128-139).
- 4) Víctor H., Parraguez et al, Reproductive Physiology-Endocrinology, Animal Reproduction in Livestock, Encyclopedia of Life Support Systems (EOLSS,2013).
- 5) Schmidt, G. H. , 1971, Cornell University, Biology of lactation.
- 6) Akers, R. M. 1990, Lactation Physiology: a ruminant animal perspective, Protoplasma 159, 96-111.
- 7) Bourdon R. M. (2000): Understanding Animal Breeding (second edition), Prentice Hall, Upper Saddle River, NJ 07458.
- 8) Journal of Animal Breeding & Genetics
- 9) Journal of Applied Genetics