COURSE LAYOUT

1. GENERAL

SCHOOL	Animal Biosciences		
DEPARTMENT	Animal Science		
STUDY LEVEL	*Undergraduate*		
COURSE CODE	375	**SEMESTER**	5rd
COURSE TITLE	Methods of Animal Breeding		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Theory	4	
Laboratory Practicals	2	6

COURSE TYPE (Foundation course, General knowledge, Scientific area, Developing skills)	**Scientific area**
PREREQUISITES	
LANGUAGE	Greek
IS THE COURSE OFFERED for ERASMUS STUDENTS?	Yes
COURSE WEB PAGE	https://mediasrv.aua.gr/eclass/courses/EZPY122/

2. LEARNING OUTCOMES

Learning Outcomes

Aim of the course is getting students acquainted with the various Methods of Animal Breeding. After course completion, the student is expected to have learned:

- About animal performance recording (methods and importance).
- Why and how phenotypic values of various (re)production traits can be adjusted for the systematic environmental effects.
- The concept and the methods of estimation of breeding values.
- The concept of artificial selection and how populations evolve as a result of application of directional selection.
- The concept of crossbreeding and the various systems of crossbreeding.
- The concept of inbreeding and its effects at genetic and phenotypic level.
- Principles of conservation Genetics in particular good practices associated with maintenance of maximum effective population size and minimum inbreeding

General Competences

- The 13 practicals combine individual and group working ability.
- Individual and group assignments are aimed to enhance students' skills development associated with ability to search, combine and present scientific information mined from references and the internet.
- Group assignments are presented in class and are followed by detailed analysis and discussion aiming to development of students' critical thinking.

3. COURSE CONTENT

- Methods of animal performance recording
- Methods for adjusting records for fixed effects
- Breeding values (BVs): definition, methods of estimation, accuracy of estimation of BVs

- Purebreeding: directional selection, selection differential, selection response, selection intensity, direct and indirect selection response, genomic selection
- Crossbreeding: heterosis, hybrid vigor, systems of crossbreeding (terminal and rotational)
- Inbreeding: coefficient of inbreeding, inbreeding depression, effective population size, methods of minimum inbreeding

4. TEACHING and LEARNING METHODS - Evaluation

TEACHING METHOD	in person Class teaching
USE OF INFORMATICS and COMMUNICATION TECHNOLOGIES	Use of e-class tools during practicals and communication with students
TEACHING ORGANISATION (Lectures, individual or group assignments, field trips, individual study et.c.)	

Activities	***Workload per semester***
lectures	52
Practicals in class groups	26
Group assignments (max 4 students)	15
Individual assignments	15
Individual study	42
Total contact hours and training	***150***

STUDENTS EVALUATION	• Evaluation is performed in Greek language. • The final theory grade is a weighted average of group assignment scores (25%) and final written exam scores (75%). Written exam is in form of multiple choice questions. • The final practicals grade is a weighted average of individual assignment scores (10%) and progress exams scores (90%) or 100% final written exams scores.

5. BIBLIOGRAPHY

- E. Rogdakis, 2006: Animal Breeding, Stamoulis, Edts.
- Banos, G, 2010. Basic Principles of Genetics and Heredity.
- Bourdon R. M. (2000): Understanding Animal Breeding (second edition), Prentice Hall.

-Journals:

- Journal of Animal Breeding & Genetics
- Journal of Animal Science
- Journal of Dairy Science
- Journal of Applied Genetics