

Academic subject: Animal breeding and ethnography			
Degree Class: L-38		Degree Course: Animal Science	
		Academic Year: 2020/2021	
		Kind of class: mandatory	
		Year: II	Period: I semester
		ECTS: 6 divided into ECTS lessons: 5 ECTS exe/lab/tutor: 1	
Time management, hours, in-class study hours, out-of-class study hours lesson: 50 exe/lab/tutor 25 in-class study: 0 out-of-class study: 75			
Language: Italian		Compulsory Attendance: yes	
Subject Teacher: Vincenzo Landi		Tel: +393519175572 e-mail: vincenzo.landi@uniba.it MSTEAMS	
		Office: Department of Veterinary Medicine Section of Zootechnics	
		Office days and hours: at any time with prior notice	
Prerequisites: ZOOLOGY, HISTOLOGY AND ANATOMY, MATHEMATICS AND PHYSICS			
Educational objectives: The course aims to provide the student with an adequate knowledge animal genetics, quantitative and population genetics. The main knowledges acquired will be: structure of the hereditary material; methods of transmission of characters in animals of zootechnical and veterinary interest; main modifications of the hereditary material. The student will also acquire theoretical and practical knowledge elements aimed at the development and management of genetic selection strategies in the company with particular attention to advanced methods for estimating the genetic value of reproducers. Finally, suitable tools will be provided to understand the different methods of conservation of animal genetic diversity.			
Expected learning outcomes (according to Dublin Descriptors)		<p>Knowledge and understanding: the student will have learned notions regarding general, mendelian and quantitative genetics with reference to farm animals and will have acquired knowledge of the genetic tools useful for managing small livestock populations.</p> <p>Applying knowledge and understanding ability to apply the main tools for the animal breeding and genetics studies of animal species.</p> <p>Making judgements: the course has the main objective of giving the student the ability to make managerial choices in carrying out the profession of zoonome.</p> <p>Understanding the genetic background of each type of animal is essential to know its biological response to changes in nutrition, management, and reproductive techniques</p> <p>Communication: The student should be able to communicate topics related to genetics and genetic improvement in different cultural fields. In particular, the specific topics will also be addressed by putting themselves in the guise of the possible final user (scientific audience, breeders, consumers)</p> <p>Lifelong learning skills: Animal breeding science is constantly evolving also due to the introduction of tools and informations derived from molecular biology. For this reason, the primary objective of the course is to allow the students understand the general mechanisms and the experimental and managerial design behind a animal breeding goal.</p>	
Course program: The animal breeding in livestock production. Mendelism and its extensions. Various types of dominance. Gene structure and mechanism. Inheritance of sex. Sex-linked inheritance. Genes and populations: gene and genotypic frequencies, Hardy-Weinberg equilibrium, causes of variation in gene frequencies. Similarity between individuals: kinship and imbreeding. The infinitesimal genetic model and the estimation of the correct phenotype, of the breeding value and of the gene combination value. Computation of single trait genetic indices, pedigrees, and hints of multiple trait indices. Notes on BLUP estimation and calculation of genetic progress. Genetic evaluation of breeding animals: performance and progeny test. Animal biodiversity: actual number, genetic drift, and conservation techniques. Applications of advanced genetic improvement: kinship analysis, cytogenetic analysis, evolutionary studies, identification of useful / deleterious characters for			

<p>livestock production, molecular traceability of foods of animal origin.</p> <p>The main Italian and foreign cattle breeds; the main Italian and foreign sheep and goat breeds; the main Italian and foreign pig breeds; the main Italian and foreign equine breeds and notes on Italian donkey breeds, Dogs and cats: Classification according to FCI groups, focus on some dog breeds (one for each FCI group). Breed classification according to the ANF and focus on some feline breeds</p>
<p>Teaching methods: presential lectures or webinars</p>
<p>Auxiliary teaching: gloves and lab coat</p>
<p>Assessment methods: oral examination</p>
<p>Bibliography:</p> <p>Slides and other material presented during the course</p> <p>P. J. Russell, GENETICA - UN APPROCCIO MOLECOLARE, IV Edizione Pearson.</p> <p>Russell, Hertz, Mc Millan, ELEMENTI DI GENETICA, II edizione, EdiSES.</p> <p>G. Pagnacco, GENETICA ANIMALE - applicazioni zootecniche e veterinarie II edizione, Casa Editrice A</p>