Module Name	Module Code
Introduction to Crop and Animal Breeding	AEF-agrig004
Module Coordinator	
Prof. Dr. Georg Thaller	
Organizer	
Institute of Animal Breeding and Husbandry - Animal Breeding and Genetics	
Institute of Crop Science and Plant Breeding - Plant Breeding	
Faculty	
Faculty of Agricultural and Nutritional Sciences	
Examination Office	
Faculty of Agricultural and Nutritional Sciences - Examination Office	

ECTS Credits	6
Evaluation	Graded
Duration	one semster
Frequency	Only takes place during winter semesters
Workload per ECTS Credit	30 hours
Total Workload	180 hours
Contact Time	60 hours
Independent Study	120 hours
Teaching Language	English

Recommended Requirements
Knowledge of the fundamentals of crop and animal production (according to the mandatory modules of the BSc courses) and of statistics and population genetics (according to the module "Biometry and Population Genetics" (BSc module "Biometrie und Populationsgenetik"), basic knowledge in plant breeding (according to the module "Plant Breeding" (BSc module "Pflanzenzüchtung") and molecular biology

Module Courses

Course Type	Course Name	Compul-sory/Optional	SWS
Lecture	Introduction to Crop and Animal Breeding	Compulsory	4

Examination(s)				
Examination Name	**Type of Examination**	**Evaluation**	**Compulsory / Optional**	**Weighting**
Oral Examination: Introduction to Crop and Animal Breeding	Oral Examination	Graded	Compulsory	100
Further Information on the Examination(s)				
1.+2. period in winter semester 1. period in summer semester examiner: Dr. I. Blaj oder Prof. Dr. Thaller / Prof. Dr. Jung QIS: 90400 with number of Examination 90410				

Course Content
Domestication and specific properties of livestock and plant species, population genetic and genomic concepts applied to multiple loci, quantitative genetics with emphasis on gene substitution, heritability, breeding values,breeding evaluation using best linear unbiased prediction, concept of heterosis, crossbred designs, inbreeding and inbred lines, strategies of propagation, application of biotechnology, enlarging and exploiting genetic variation, mutation induction and transgenic technology, in vitro methods, process of selection, markers and QTL-mapping, genomic selection, legal frameworks
Learning Outcome
The students master population genetics, quantitative genetics and selection theory as well as methods for breeding and propagating agricultural crops and animals. They recognize the appropriate characteristics of different livestock and crop species and the consequences for successful breeding schemes. The sudents learn about genomic information and concepts to integrate this knowledge into breeding. They understand on how to determine genetic properties of individuals and populations and what are major determinants for purebred or crossbreeding. They are enabled to estimate and interpret the genetic disposition of crops and animals and how to develop new performance testing schemes and strategies for further improvement. Students strongly benefit in their biological and genetic understanding from comparisions of livestock and plant breeding systems.
Reading List
• Mrode: Linear Models for Predicion of Animal Breeding Values • Falconer: Quantitative Genetics • Lecture Notes Additional literature will be announced before the course starts
Additional Information
Maximum number of participants: 20 Enrollment by OLAT within workdays Monday through Friday in the 1nd week of the 2. audit period of the preceding semester. Following information are necessary: matriculation number last name first name degree study program stu-Email The allocation of the places takes place in the 2nd week of the 2. audit period of the preceding semester. Acceptance of the place by students only through participation at the first day of the course. Students without a place can get a place at the first day of the course by move-up procedure.

Use	Compulsory / Optional	Semester
Master, 1-Subject, Agricultural Sciences, Specialisation Agricultural Economics, (Version 2017)	Optional	-
Master, 1-Subject, Agricultural Sciences, Specialisation Agricultural Economics, (Version 2013)	Optional	-
Master, 1-Subject, Agricultural Sciences, Specialisation Agribusiness, (Version 2017)	Optional	-
Master, 1-Subject, Agricultural Sciences, Specialisation Agribusiness, (Version 2013)	Optional	-
Master, 1-Subject, Agricultural Sciences, Specialisation Crop Sciences, (Version 2017)	Optional	-
Master, 1-Subject, Agricultural Sciences, Specialisation Crop Sciences, (Version 2013)	Optional	-
Master, 1-Subject, Agricultural Sciences, Specialisation Animal Sciences, (Version 2017)	Optional	-
Master, 1-Subject, Agricultural Sciences, Specialisation Animal Sciences, (Version 2013)	Optional	-
Master, 1-Subject, Agricultural Sciences, Specialisation Environmental Sciences, (Version 2017)	Optional	-
Master, 1-Subject, Agricultural Sciences, Specialisation Environmental Sciences, (Version 2013)	Optional	-
Master, 1-Subject, AgriGenomics, (Version 2017)	Compulsory	-
Master, 1-Subject, AgriGenomics, (Version 2010)	Compulsory	-
Master, 1-Subject, Dairy Science, (Version 2017)	Optional	-
Master, 1-Subject, Nutritional and Food Science, (Version 2013)	Optional	-
Master, 1-Subject, Nutritional and Consumer Economics, (Version 2017)	Optional	-
Master, 1-Subject, Nutritional and Consumer Economics, (Version 2013)	Optional	-