

<b>Module Name</b>	<b>Module Code</b>
Dairy Cattle Breeding	AEF-ds005
<b>Module Coordinator</b>	
Prof. Dr. Georg Thaller	
<b>Organizer</b>	
Institute of Animal Breeding and Husbandry - Animal Breeding and Genetics	
<b>Faculty</b>	
Faculty of Agricultural and Nutritional Sciences	
<b>Examination Office</b>	
Faculty of Agricultural and Nutritional Sciences - Examination Office	

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

<b>Recommended Requirements</b>			
Fundamentals of domestication, physiology and reproduction as well as economic relevant traits in livestock species. Knowledge of breeds, their performance profile and their distribution across countries. Basics of statistics, population and quantitative genetics. Knowledge of performance testing, testing schemes and breeding evaluation.			
<b>Module Courses</b>			
<b>Course Type</b>	<b>Course Name</b>	<b>Compulsory/Optional</b>	<b>SWS</b>
Lecture	Dairy Cattle Breeding	Compulsory	2
Seminar	Dairy Cattle Breeding	Compulsory	2

<b>Examination(s)</b>				
<b>Examination Name</b>	<b>Type of Examination</b>	<b>Evaluation</b>	<b>Compulsory / Optional</b>	<b>Weighting</b>
Oral Examination: Dairy Cattle Breeding	Oral Examination	Graded	Compulsory	50
Presentation: Dairy Cattle Breeding	Seminar Paper	Graded	Compulsory	50
<b>Further Information on the Examination(s)</b>				
1.+2. period in winter semester 1. period in summer semester examiner: Prof. Dr. Thaller QIS: 300600 with examination 300610+300620				

<b>Course Content</b>
General aspects of breeding programs, breeding goals and derivation of economic weights, determinants of genetic gain, gene flow method, inbreeding and concepts to balanced breeding, heterosis and cross breeding, examples of rotational crosses, genomic selection and application in breeding programs, application of genomics on farm level, exploiting advances in biotechnology to enhance breeding progress. Conservation of animal genetic resources.
<b>Learning Outcome</b>
The students understand preconditions, major steps and implementation of breeding programs. They are able to judge and discuss alternative breeding goals also considering environmental impact of production. They evaluate short term and long term consequences of breeding strategies for dairy cattle populations. Critical judgement of benefits and risks when applying new biotechnology.
<b>Reading List</b>
The Genetics of Cattle (Fries and Ruvinsky); Understanding Animal Breeding (Bourdon), Practical animal Breeding (Willis)
<b>Additional Information</b>
Maximum number of participants: 25 - Up to 20 places will be allocated preferably to students in the Dairy Science master's program Enrollment within workdays Monday through Friday in the 1st week of the 2. audit period of the preceding semester. The following information has to be provided for enrollment: matriculation number last name first name striven 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. Notification will be sent to the stu-email address.

<b>Use</b>	<b>Compulsory / Optional</b>	<b>Semester</b>
Master, 1-subject, Agricultural Sciences, Agricultural Economics, (Version 2017)	Optional	1.
Master, 1-subject, Agricultural Sciences, Agricultural Economics, (Version 2013)	Optional	1.
Master, 1-subject, Agricultural Sciences, Agribusiness, (Version 2017)	Optional	1.
Master, 1-subject, Agricultural Sciences, Agribusiness, (Version 2013)	Optional	1.
Master, 1-subject, Agricultural Sciences, Crop Sciences, (Version 2017)	Optional	1.
Master, 1-subject, Agricultural Sciences, Crop Sciences, (Version 2013)	Optional	1.
Master, 1-subject, Agricultural Sciences, Animal Sciences, (Version 2017)	Optional	1.
Master, 1-subject, Agricultural Sciences, Animal Sciences, (Version 2013)	Optional	1.
Master, 1-subject, Agricultural Sciences, Environmental Sciences, (Version 2017)	Optional	1.
Master, 1-subject, Agricultural Sciences, Environmental Sciences, (Version 2013)	Optional	1.
Master, 1-subject, Dairy Science, (Version 2017)	Compulsory	1.
Master, 1-subject, Nutritional and Food Science, (Version 2013)	Optional	1.
Master, 1-subject, Nutritional and Consumer Economics, (Version 2017)	Optional	1.
Master, 1-subject, Nutritional and Consumer Economics, (Version 2013)	Optional	1.