Module Name	Module Code
Organization and Analysis of Eukaryotic Genomes	AEF-agrig002
Module Coordinator	
Prof. Dr. Christian Jung	
Organizer	
Institute of Crop Science and Plant Breeding - Plant Breeding	
Institute of Phytopathology - Molecular Phytopathology	
Institute of Animal Breeding and Husbandry - Animal Breeding and Genetics	
Faculty	
Faculty of Agricultural and Nutritional Sciences	
Examination Office	
Faculty of Agricultural and Nutritional Sciences - Examination Office	

ECTS Credits	6
Evaluation	Graded
Duration	one semester
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			
Fundamental knowledge in biology, molecular genetics and gene technology			
Module Courses			
Course Type	**Course Name**	**Compul-sory/Optional**	**SWS**
Lecture	Organization of the Eucaryotic Genome	Compulsory	1
Lecture	Genome Analysis I: Animals	Compulsory	1,5
Lecture	Genome Analysis II: Plants	Compulsory	1,5

Examination(s)				
Examination Name	**Type of Examination**	**Evaluation**	**Compulsory / Optional**	**Weighting**
Oral Examination: Organization and Analysis of Eukaryotic Genomes	Oral Examination	Graded	Compulsory	100

Further Information on the Examination(s)

1.+2. period in winter semester
1. period in summer semester

examiner: Prof. Dr. Thaller / Prof. Dr. Jung or Dr. Melzer
QIS: 90200 with number of Examination 90210

Course Content

Organization and function of the cell nucleus, eukaryotic genome structure, genome size variation and genome evolution, repetitive DNA, the concept of genes and their regulation, organelle genomes, genetic markers, genetic mapping of eukaryotic genomes, physical mapping of eukaryotic genomes, eukaryotic genome sequencing, dissecting simple and complex traits in livestock, multi-parallel transcript analysis, systematic gene inactivation, posttranslational gene regulation, gene identification from eukaryotic genomes, studying gene function.

Learning Outcome

The students understand the structure and evolution of plant and animal genomes. They know the major components of complex eukaryotic genomes. They understand how to sequence genomes and to analyze complex genomic sequences and learn the state of the art omics techniques for structural and functional analysis of plant and animal genomes.

Reading List

Textbooks, lecture notes, internet resources, questionnaire

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, Biochemistry and Molecular Biology, (Version 2016)	Optional	-
Master, 1-Subject, Biochemistry and Molecular Biology, (Version 2007)	Optional	-
Master, 1-Subject, Biology, (Version 2015)	Optional	-
Master, 1-Subject, Biology, (Version 2011)	Optional	-
Master, 1-Subject, Biology, (Version 2007)	Optional	-
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	-