Module Name	Module Code
Genomics in Research and Industry	agrigAEF005-01a

Module Coordinator
Prof. Dr. Georg Thaller

Organizer
Institute of Animal Breeding and Husbandry - Animal Breeding and Genetics
Institute of Plant Nutrition and Soil Science - Plant Nutrition
Institute of Crop Science and Plant Breeding - Plant Breeding
Institute of Phytopathology - Molecular Phytopathology

Faculty
Faculty of Agricultural and Nutritional Sciences

Examination Office
Faculty of Agricultural and Nutritional Sciences - Examination Office

ECTS Credits	7
Evaluation	Graded
Duration	one Semester
Frequency	Only takes place during summer semesters
Workload per ECTS Credit	30 hours
Total Workload	213,75 hours
Contact Time	71,25 hours
Independent Study	142,5 hours
Teaching Language	English

Recommended Requirements
Knowledge of the fundamentals of crop and animal breeding and applications of genomics in agriculture (according to the contents of the modules “Introduction to Crop and Animal Breeding” (agrig004) and “Applications of Genomics in Agriculture” (agrig007))

Module Courses

Course Type	Course Name	Compulsory/Optional	SWS
Seminar	Genomics in Research and Industry	Compulsory	2
Field excursion	Genomics in Research and Industry	Compulsory	2,75

Perequisits for Admission to the Examination(s)

Regular visit of field excursion are necessary.

Examination(s)

Examination Name	Type of Examination	Evaluation	Compulsory / Optional	Weighting
Seminar Paper with Assignment: Genomics in Research and Industry	Seminar Paper	Graded	Compulsory	100

Further Information on the Examination(s)

1.+2. period in summer semester
1. period in winter semester
Seminar Paper with Assignment= 100% Prof. Dr. Thaller or Dr. Melzer or Prof. Dr. Mühling or Prof. Dr. Cai
QIS: xxx with number of Examination xxxxx

Course Content

Seminar:
Actual developments and new insights in genomics, biotechnology and molecular biology in the field of plant pathology, plant physiology, plant and animal breeding. Insight in basic scientific research at the cutting-edge of the respective subjects and knowledge on practical application of such novel technology to inhance progress and production.
Excursion:
Major destinations are internationally operating research partners in academia and industry. Next to introductions to scientific and operational management concepts, high throughput techniques for genotyping and proteomics, industrial standards, application of techniques in animal and plant breeding are demonstrated. A focus is set on automated phenotyping system, the processing of data in the context of genomics, proteomics, and metabolomics and utilization in the field of agronomics. Visits and personnel contact provide a unique chance to gain insight into future job opportunities.

Learning Outcome

Students are able to grasp the complexity of high level research articels related to the course contents and to present it to an educated audience. They can judge the relevance of the findings in the respective area and gain a broader view of science and application. Group discussions across the subjects sharpen their ability to set research into the context of agronomics and to evaluate its importance for society considering the very cultural and political background.
The students learn and recognize how genomic information is generated at highly qualified research institutes on a large scale. They experience the application of genomic tools and techniques for enhancing novel breeding strategies on the industrial level that aim to improve crop and animal production. They are able to compare different approaches and to judge different procedures implemented in industry.

Reading List

Announced at beginning of seminar – topic specific articles will be distributed

Additional Information

Maximum number of participants: 20
Enrollment by **OLAT** within workdays Monday through Friday in the 1st 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.
Seminar: weekly during the semester
Excursion: block course during winter break
regular attendance required to pass as outlined on OLAT

Use	**Compulsory / Optional**	**Semester**
Master, 1-Subject, Agricultural Sciences, Specialisation Agricultural Economics, (Version 2017)	Optional	-
Master, 1-Subject, Agricultural Sciences, Specialisation Agribusiness, (Version 2017)	Optional	-
Master, 1-Subject, Agricultural Sciences, Specialisation Crop Sciences, (Version 2017)	Optional	-
Master, 1-Subject, Agricultural Sciences, Specialisation Animal Sciences, (Version 2017)	Optional	-
Master, 1-Subject, Agricultural Sciences, Specialisation Environmental Sciences, (Version 2017)	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	-