Module Name	Module Code
Molecular Plant Nutrition	AEF-agrig011
Module Coordinator	
Prof. Dr. Karl-Hermann Mühling	
Organizer	
Institut für Pflanzenernährung und Bodenkunde - Pflanzenernährung	
Faculty	
Faculty of Agricultural and Nutritional Sciences	
Examination Office	
Prüfungsamt Agrar- und Ernährungswissenschaftliche Fakultät	

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

Recommended Requirements
Advanced understanding of plant nutrition and physiology (according to modules „Biochemistry and Proteomics“(AEF-agric003) and „Introduction to Molecular Biology“ (AEF-agric001))

Module Courses

Course Type	Course Name	Compulsory/Optional	SWS
Lecture	Molecular Plant Nutrition	Compulsory	2
Seminar	Plant Stress Physiology	Compulsory	1
Exercise	Molecular Plant Nutrition	Compulsory	1

Examination(s)				
Examination Name	**Type of Examination**	**Evaluation**	**Compulsory / Optional**	**Weighting**
Oral Exam: Molecular Plant Nutrition	Oral Examination	Graded	Compulsory	75
Report: Molecular Plant Nutrition	Seminar Paper	Graded	Compulsory	25

Further Information on the Examination(s)

1.+2. period in summersemester
1. period in wintersemester

examiner: Oral exam: 75% Dr. Pitann
Seminar presentation: 25% Dr. Pitann
QIS: 91300 with number of Examination 91310 + 91320

Course Content

- biosynthesis and structure of nucleic acids transcription and RNA silencing translation and protein folding nutritional signal transduction ion transport by carriers and channels nutrient use efficiency-gene expression and proteomics under abiotic stress

Learning Outcome

The students gain an overview of the key nutritional and molecular signal pathways in plant metabolism. They have molecular knowledge of the function of carrier and channel proteins and their importance in nutrient acquisition and efficiency. They have practical experience in biochemical and molecular techniques in plant nutrition.

Reading List

to be announced at the beginning of the lecture

Additional Information

Maximum number of participants: 15
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, Agricultural Economics, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Agribusiness, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Crop Sciences, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Animal Sciences, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Environmental Sciences, (Version 2013)	Optional	-
Master, 1-subject, AgriGenomics, (Version 2010)	Optional	-
Master, 1-subject, Nutritional and Food Science, (Version 2013)	Optional	-
Master, 1-subject, Nutritional and Consumer Economics, (Version 2013)	Optional	-