

Module Name	Module Code
Biotechnology in Phytomedicine	AEF-agrig013
Module Coordinator	
Prof. Dr. Daguang Cai	
Organizer	
Institute of Phytopathology - Molecular Phytopathology	
Faculty	
Faculty of Agricultural and Nutritional Sciences	
Examination Office	
Faculty of Agricultural and Nutritional Sciences - Examination Office	

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

Recommended Requirements			
Basic knowledge of Phytopathology, genetics and molecular pytomedicine			
Module Courses			
Course Type	Course Name	Compul- sory/Optional	SWS
Lecture	Biotechnology in Phytomedicine	Compulsory	2
Internship	Basic Gene Techniques for Phytomedicine	Compulsory	2
Prerequisites for Admission to the Examination(s)			
Regular visit of practical course are necessary.			

Examination(s)				
Examination Name	Type of Examination	Evaluation	Compulsory / Optional	Weighting
Oral Examination: Biotechnology in Phyto-medicine	Oral Examination	Graded	Compulsory	75
Protocol: Biotechnology in Phytomedicine	Protocol	Graded	Compulsory	25
Further Information on the Examination(s)				
1.+2. period in summer semester 1. period in winter semester examiner: Prof. Dr. Cai / Dr. Ye QIS: 91600 with number of Examination 91610 + 91620				

Course Content
<ul style="list-style-type: none"> • DNA/RNA techniques, cloning and sequence analysis • PCR, dPCR, qPCR and qRT-PCR • Expression of recombinant proteins in eukaryotic / prokaryotic systems • PCR-based molecular diagnostics • Genetic engineering of plant disease resistance
Learning Outcome
<ul style="list-style-type: none"> • Advanced understanding and knowledge of the principles of gene techniques and their application • Knowhows and skills for application of gene techniques in phytomedicine research
Reading List
Kadri (2019) "Polymerase Chain Reaction (PCR): Principle and Applications"; Biassoni (2014) "Quantitative Real-Time PCR: Methods and Protocols"; Sue Carson (2019): "Molecular Biology Techniques"; Abdin (2017): "Plant Biotechnology: Principles and Applications"; Buchanan (2015): "Biochemistry and Molecular Biology of Plants"; David B. Collinge (2016): "Plant Pathogen Resistance Biotechnology"; Wong (2018): "The ABCs of Gene Cloning"; Lecture contents and slides, scientific literatures, review articles and textbooks, internet links are online available, and will be introduced at the beginning of the course.
Additional Information
Maximum number of participants: 12 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.

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, Special. Agricultural Economics and Agribusiness # Specific Field of Study: Agricultural Economics, (Version 2008)	Optional	-
Master, 1-Subject, Agricultural Sciences, Special. Agricultural Economics and Agribusiness # Specific Field of Study: Agribusiness, (Version 2008)	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 Crop Sciences, (Version 2008)	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 Animal Sciences, (Version 2008)	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, Agricultural Sciences, Specialisation Environmental Sciences, (Version 2008)	Optional	-
Master, 1-Subject, AgriGenomics, (Version 2017)	Optional	-
Master, 1-Subject, AgriGenomics, (Version 2010)	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	-
Master, 1-Subject, Nutritional Sciences and Household Economics, Specialisation Nutritional and Consumer Economics, (Version 2008)	Optional	-
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Master, 1-Subject, Nutritional Sciences and Household Economics, Specialisation Nutritional Sciences, (Version 2008)	Optional	-

