

<b>Module Name</b>		<b>Module Code</b>	
Biotechnology in Phytomedicine		agrigAEF013-01a	
<b>Module Coordinator</b>			
Prof. Dr. Daguang Cai			
<b>Organizer</b>			
Institute of Phytopathology - Molecular Phytopathology			
<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 summer semesters		
<b>Workload per ECTS Credit</b>	30 hours		
<b>Total Workload</b>	180 Stunden		
<b>Contact Time</b>	60 Stunden		
<b>Independent Study</b>	120 Stunden		
<b>Teaching Language</b>	English		
<b>Recommended Requirements</b>			
Basic knowledge of Phytopathology, genetics and molecular pytomedicine			
<b>Module Courses</b>			
<b>Course Type</b>	<b>Course Name</b>	<b>Compulsory/Optional</b>	<b>SWS</b>
Lecture	Biotechnology in Phytomedicine	Compulsory	2
Internship	Basic Gene Techniques for Phytomedicine	Compulsory	2

<b>Prerequisites for Admission to the Examination(s)</b>				
Regular participation in practical course. The grade of the protocol can be incorporated into the grade of the oral examination to improve the grade to 25%.				
<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: Biotechnology in Phytomedicine	Oral Examination	Graded	Compulsory	100
Protocol: Biotechnology in Phytomedicine	Protocol	Graded	Compulsory	Prerequisite for Admission to the Examination
<b>Further Information on the Examination(s)</b>				
1.+2. period in summer semester 1. period in winter semester  examiner: Prof. Dr. Cai / Dr. Wanzhi Ye QIS: xxxx with number of Examination xxxxxxxxxxxxxxx				
<b>Course Content</b>				
<ul style="list-style-type: none"> <li>• DNA/RNA techniques, cloning and sequence analysis</li> <li>• PCR, dPCR, qPCR and qRT-PCR</li> <li>• Expression of recombinant proteins in eukaryotic / prokaryotic systems</li> <li>• PCR-based molecular diagnostics</li> <li>• Genetic engineering of plant disease resistance</li> </ul>				
<b>Learning Outcome</b>				
<ul style="list-style-type: none"> <li>• Advanced understanding and knowledge of the principles of gene techniques and their application</li> <li>• Knowhows and skills for application of gene techniques in phytomedicine research</li> </ul>				
<b>Reading List</b>				
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.

<b>Use</b>	<b>Compulsory / Optional</b>	<b>Semester</b>
Master, 1-subject, Agricultural Sciences, Agricultural Economics, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Agribusiness, (Version 2017)	Optional	-
Master, 1-subject, Agricultural Sciences, Agribusiness, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Crop Sciences, (Version 2017)	Optional	-
Master, 1-subject, Agricultural Sciences, Crop Sciences, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Animal Sciences, (Version 2017)	Optional	-
Master, 1-subject, Agricultural Sciences, Animal Sciences, (Version 2013)	Optional	-
Master, 1-subject, Agricultural Sciences, Environmental Sciences, (Version 2017)	Optional	-
Master, 1-subject, Agricultural Sciences, Environmental Sciences, (Version 2013)	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	-