

Module Name	Module Code
Molecular Biology Approaches for Animal Nutrition and Physiology	agrarAEF861-01a
Module Coordinator	
Prof. Dr. Siegfried Wolfram	
Organizer	
Institute of Animal Nutrition and Physiology - Nutritional Physiology and Biochemistry	
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	German

Recommended Requirements			
Basic knowledge in molecular biology, cell biology including animal nutrition, biochemistry and physiology.			
Module Courses			
Course Type	Course Name	Compulsory/Optional	SWS
Lecture	Advanced Molecular Biology Approaches in research	Compulsory	2
Internship	Advanced Molecular Biology Techniques in research	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
Written Examination: Molecular Biology Approaches for Animal Nutrition and Physiology	Written Examination	Graded	Compulsory	100
Further Information on the Examination(s)				
1. +2. Period in winter semester 1. Period in summer semester The admission requirement for the examination is a proof of the passed internship protocol written examination 100% Examiner Dr. Burdeos/Prof Dr Wolffram QIS: 68700 mit PNR68710				

Course Content
This module provides the fundamental background to understand the significance of molecular and cell biology, biochemistry experimental techniques and approaches in animal nutrition and physiology. The following experimental techniques and its theories will be covered: Cell Biology (Mammalian cell culture preparation, cytotoxicity and proliferation assay) and Molecular biology (PCR system and technology, DNA and RNA analyses.). Biochemistry (Protein extraction, purification and quantification, electrophoresis technology, western blot technology and enzymatic activity.
Learning Outcome
On completion of the module, students will have gained an understanding of the fundamentals of animal molecular and cell biology, biochemistry, physiology and nutrition. Students will be able to describe the importance of molecular and cell biology including biochemistry experimental techniques in assessing the bioactivity and mechanism involve in a certain functional metabolites in animal nutrition. They will also be familiar with the structure of biomolecules and concepts of enzymology. Furthermore, students should be able to complete basic laboratory tasks relevant to animal nutrition and physiology. Additional outcomes: Students will learn how to assess and interpret scientific evidence.
Reading List
Reading List Copies of utilized scientific journal and lecture handouts including textbooks will be given at the commencement of the lecture period.
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 is necessary: matriculation number last name first name striven 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, 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, Dairy Science, (Version 2017)	Optional	-
Master, 1-Subject, Environmental Management, (Version 2013)	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	-