

Winter Semester 2026/27

As of 18/08/2026

Module Directory

Faculty 09 - Agricultural Sciences, Nutritional Sciences and Environmental
Management

Core Modules M.Sc. One Health

Please consult the timetable or current university calendar for information regarding dates and room numbers of the modules taught in the course:

<http://www.uni-giessen.de/cms/fbz/fb09/studium/msc/stpl>

Table of Contents

MK-036-EN Environmental Chemistry	3
MK-068-EN Empirical Research Methods	4
MK-077 / MK-077-EN Statistics and Epidemiology	5
MK-132-EN-DI Planetary Thinking	6
MK-137-EN Introduction to One Health	7
MK-138-EN Sociology of Health	8
MK-139-EN Public Health Nutrition and Non-Communicable Diseases	9
MK-140-EN Antibiotics: Past, Present and Future	10
MK-141-EN Sustainable Animal Nutrition and Husbandry	11
MK-142-EN Infectious Diseases in Animals.....	12

MK-036-EN	MK-036-EN Environmental Chemistry		6 CP
	Environmental Chemistry		
Core Module / Optional Module	Agrarwissenschaften, Ökotoxikologie und Umweltmanagement / Institut für Bodenkunde und Bodenerhaltung		1./2. Sem.
	Offered for the first time: WS 2015/16		
	Intake capacity: nicht limitiert		
Frequency and Duration: SS, 1 Semester			
Module Coordinator: Bodenressourcen und Bodenschutz			
Applies to the Study Programmes: One Health, Master (2.); Umweltwissenschaften, Master (1./2.);			
Prerequisites for Participation: Keine			
Learning Outcomes: The students: – have in-depth knowledge of the properties and pollution of the environmental compartments water, soil, and air; – are familiar with the properties and behaviour of environmentally relevant substances in these media; – are familiar with environmental legislation relating to substance-related environmental pollution.			
Module Content: Lecture: – Key aspects of substance-related environmental legislation – Environmental compartments water, soil, and air and their current status – Pollutants and pollutant classes: behaviour and fate in the environment Seminar: – Presentation and discussion of current international scientific literature			
Forms of Instruction:		Contact hours	Preparation and follow-up work
Lecture		45	90
Seminar		15	30
Total:		180	
Prerequisites for Examination: Keine			
Module Examination: – Form(s) of assessment: Written examination or oral exam – Components of final grade: Written examination (100 %) or oral exam (100 %) – Form of module retake examination: Written examination or oral exam			
Language: Englisch			

MK-068-EN	MK-068-EN Empirical Research Methods		6 CP
	Empirical Research Methods		
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Agrarpolitik und Marktforschung		1. Sem.
	Offered for the first time: WS 2015/16		
	Intake capacity: nicht limitiert		
Frequency and Duration: WS, 1 Semester			
Module Coordinator: Agrar-, Ernährungs- und Umweltpolitik			
Applies to the Study Programmes: One Health, Master (1.); Transition Management, Master (1.);			
Prerequisites for Participation: None			
Learning Outcomes: The students – have acquired knowledge of general principles of various qualitative and quantitative research methods as well as evaluation research – are able to understand the application of various methods with regard to research objectives			
Module Content: – Principles of applied statistics – Correlation and causality – Basic approach of econometrics – Basic introduction to simple and multiple regression analysis – Collecting and analysing panel data – Designing of surveys, interviews, questionnaires – Qualitative data collection techniques – Qualitative data analysis – Mixed methods			
Forms of Instruction:	Contact hours	Preparation and follow-up work	
Lecture	30	60	
Seminar	30	60	
Total:	180		
Prerequisites for Examination: None			
Module Examination: – Form(s) of assessment: Written examination or written examination, term paper (4-5 pages) and written assignment (poster) – Components of final grade: Written examination (100 %) or written examination (70 %), term paper (15 %), written assignment (15 %) – Form of module retake examination: Written examination			
Language: Englisch			

MK-077 / MK-077-EN	MK-077 / MK-077-EN Statistics and Epidemiology		6 CP
	Statistik und Epidemiologie		
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Pflanzenbau und Pflanzenzüchtung II		1./2. Sem.
	Offered for the first time: SS 2016		
	Intake capacity: nicht limitiert		
Frequency and Duration: SS, 1 Semester			
Module Coordinator: Biometrie und Populationsgenetik mit dem Schwerpunkt Bioinformatik			
Applies to the Study Programmes: Ökotrophologie, Master (1./2.); One Health, Master (1.);			
Prerequisites for Participation: None			
Learning Outcomes: The students – know methods of descriptive and inferential statistics; – know foundations and history of epidemiology; – are able to calculate and interpret measures of morbidity and mortality; – know and can distinguish between different experimental designs of epidemiological studies; – are able to conduct advanced statistical analyses of data from epidemiological studies with statistical software.			
Module Content: – Descriptive Statistics – Theory and application of statistical tests – Analysis of variance, mixed linear models for repeated measures and crossover designs – Linear contrasts and multiple comparisons – Multiple linear regression – Measures of morbidity and mortality, relative risk and odds ratio, experimental designs – Binomial logistic regression – Survival analysis			
Forms of Instruction:	Contact hours	Preparation and follow-up work	
Lecture	30	60	
Practical training	30	60	
Total:	180		
Prerequisites for Examination: None			
Module Examination: – Form(s) of assessment: Assignment set (4) or written examination – Components of final grade: Assignment set (100 %) or written examination (100 %) – Form of module retake examination: Written examination			
Language: Deutsch und/oder Englisch			

MK-132-EN-DI	MK-132-EN-DI Planetary Thinking	6 CP
	Planetary Thinking	
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Agrarpolitik und Marktforschung	2. Sem.
	Offered for the first time: SS 2025	
	Intake capacity: nicht limitiert	
Frequency and Duration: SS, 1 Semester		
Module Coordinator: Planetarer Wandel und Politik		
Applies to the Study Programmes: One Health, Master (2.); Sustainable Transition, Master (2.); Transition Management, Master (2.);		
Prerequisites for Participation: None		
Learning Outcomes: The students – are able to adopt a planetary perspective on challenges and critically reflect on their relevance; – can identify, explain, and evaluate key concepts, topics, and scenarios of planetary thinking in relation to Earth's habitability; – are capable of critically analyzing publications in this field and situating these contributions within the state of research; – can develop a well-informed opinion on conflicting positions and debates in planetary thinking and articulate these in discussions.		
Module Content: – Perspectives: The origins of planetary thinking are examined, and the development of key frameworks is traced – Concepts: Key concepts integral to planetary thinking are introduced, discussed, and interrelated – Constellations: The diverse phenomena interconnected through their planetary character are analyzed – Scenarios: Emerging scenarios on and beyond our home planet are explored		
Forms of Instruction:	Contact hours	Preparation and follow-up work
Lecture	12	24
Seminar	48	96
Total:	180	
Prerequisites for Examination: None		
Module Examination: – Form(s) of assessment: Written assignment (2000 words, time frame: 4 weeks) – Components of final grade: Written assignment (100 %) – Form of module retake examination: Revision of the written assignment within 4 weeks		
Language: Englisch		

MK-137-EN	MK-137-EN Introduction to One Health		6 CP
	Introduction to One Health		
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Agrarpolitik und Marktforschung		1. Sem.
	Offered for the first time: WS 26/27		
	Intake capacity: 40		
Frequency and Duration: WS, 1 Semester			
Module Coordinator: Planetarer Wandel und Politik			
Applies to the Study Programmes: One Health, Master (1.);			
Prerequisites for Participation: None			
Learning Outcomes: The students – analyze One Health as an integrative approach that makes challenges at the interfaces of human, animal, and environmental health visible and amenable to action; – systematically classify key concepts, stakeholder groups, and problem areas within One Health and reflect on their interrelations; – critically analyze and compare scientific and institutional sources and identify differences in evidence, uncertainty, and underlying logics of action.			
Module Content: – Foundations: Introduction to the emergence, objectives, and conceptual landscape of One Health; distinctions from and connections to Public Health, Global Health, and Planetary Health. – Case constellations: Interactions and interdependencies between humans, animals, and the environment. – Knowledge, data, and uncertainty: Overview of typical forms of observation, risk assessment, communication, and the limits of available data. – Institutions and implementation: Responsibilities, coordination, conflicts of objectives, and questions of legitimacy in the practical implementation of One Health strategies. – Synthesis and transfer: Criteria for success in One Health.			
Forms of Instruction:	Contact hours	Preparation and follow-up work	
Seminar	60	120	
Total:	180		
Prerequisites for Examination: None			
Module Examination: – Form(s) of assessment: Written assignment (2000 words), Time frame: 2 weeks – Components of final grade: Written assignment (100 %) – Form of module retake examination: Revision of the written assignment within 2 weeks			
Language: Englisch			

MK-138-EN	MK-138-EN Sociology of Health	6 CP
	Sociology of Health	
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Verbraucherforschung, Kommunikation und Ernährungssoziologie	1. Sem.
	Offered for the first time: WS 2026/27	
	Intake capacity: 40	
Frequency and Duration: WS, 1 Semester		
Module Coordinator: Ernährungssoziologie		
Applies to the Study Programmes: One Health, Master (1.);		
Prerequisites for Participation: None		
Learning Outcomes: The students – understand key critical sociological perspectives on health and illness and can situate them in relation to One Health and food systems; – analyse selected One Health problems as socially, politically, and economically structured phenomena that go beyond purely biomedical explanations; – explain and reflect on how food systems, environmental conditions, and social inequalities interact in the production of unequal health outcomes; – identify and critically assess different forms of knowledge and expertise involved in public and One Health decision-making, drawing on sociological and science and technology studies (STS) perspectives; – develop and communicate an independent critical case analysis of a One Health–related problem or policy and reflect on their own role as future professionals in the field.		
Module Content: – Health as a social and political phenomenon – Social inequalities and global power relations in shaping health risks and resources – Problem definition, evidence, and expertise in Public and One Health – Sociological analysis of selected One Health problems or policies		
Forms of Instruction:	Contact hours	Preparation and follow-up work
Lecture	20	40
Seminar	24	48
Exercises	16	32
Total:	180	
Prerequisites for Examination: None		
Module Examination: – Form(s) of assessment: Presentation (10-15 Min., poster presentation) and written assignment (2-3 pages) – Components of final grade: Presentation (80 %), written assignment (20 %) – Form of module retake examination: Oral examination (20 Min.)		
Language: Englisch		

MK-139-EN	MK-139-EN Public Health Nutrition and Non-Communicable Diseases		6 CP
	Public Health Nutrition and Non-Communicable Diseases		
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Ernährungswissenschaft		1. Sem.
	Offered for the first time: WS 2026/27		
	Intake capacity: 40		
Frequency and Duration: WS, 1 Semester			
Module Coordinator: Ernährung des Menschen			
Applies to the Study Programmes: One Health, Master (1.);			
Prerequisites for Participation: None			
Learning Outcomes: The students – critically analyze the key concepts of Public Health Nutrition and the prevention of non-communicable diseases (NCDs); – evaluate major NCDs and their central diet- and lifestyle-related risk factors using current scientific evidence; – analyze the interactions between nutrition, environmental factors, and NCDs from a One Health perspective and reflect on their implications for prevention strategies.			
Module Content: – Introduction to Public Health Nutrition – Non-communicable diseases (NCDs) and their risk factors – Behavioral and structural prevention, including policy measures – National and international dietary guidelines – Nutrition transition towards highly processed foods – Social inequality and health			
Forms of Instruction:	Contact hours	Preparation and follow-up work	
Lecture	40	80	
Seminar	20	40	
Total:	180		
Prerequisites for Examination: Keine			
Module Examination: – Form(s) of assessment: Written examination or oral examination or presentation (10 bis 20 min.) – Components of final grade: Written examination (100%) or oral examination (100 %) or presentation (100%) – Form of module retake examination: Written examination or oral examination or presentation (10 bis 20 min.)			
Language: Englisch			

MK-140-EN	MK-140-EN Antibiotics: Past, Present and Future	6 CP
	Antibiotics: Past, Present and Future	
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Insektenbiotechnologie	1. Sem.
	Offered for the first time: WS 2018/19	
	Intake capacity: 30	
Frequency and Duration: WS, 1 Semester		
Module Coordinator: Naturstoffforschung mit Schwerpunkt Insektenbiotechnologie		
Applies to the Study Programmes: One Health, Master (1.);		
Prerequisites for Participation: None		
Learning Outcomes: The students – study and critically reflect on the major chemical classes of antibiotics and their use, significance, and impacts in human medicine, veterinary medicine, agriculture, and the environment within the context of the One Health concept.		
Module Content: – Major chemical classes of antibiotics (β-lactams, tetracyclines, aminoglycosides, macrolides, peptide antibiotics, “hybrid” structures, etc.) used in human and veterinary medicine as well as in agricultural applications – Microbial secondary metabolism as the primary source of antibiotics, including the biosynthesis of major classes – Modes of action and molecular targets of key antibiotic classes – Historical development of antibiotic research – Overview of the major chemical classes of antibiotics – Microbial secondary metabolism as an ecological strategy (overview of biosynthetic mechanisms) – Optimization of antibiotics through chemical and biosynthetic innovation – Design and optimization of industrial fermentation processes, including environmental aspects of industrial production, antibiotic emissions, and resistance selection in production environments – Comparison of applications in human medicine, veterinary medicine, aquaculture, and agriculture – Environmental persistence, degradation, and ecological impacts of selected antibiotic classes – Strategies to overcome resistance (novel mechanisms of action and combination therapies) – Political, economic, and societal dimensions of antibiotic research		
Forms of Instruction:	Contact hours	Preparation and follow-up work
Lecture	48	96
Seminar	12	24
Total:	180	
Prerequisites for Examination: None		
Module Examination: – Form(s) of assessment: Written examination, presentation (10-15 min.) and multimedia assignment (video, 4-10 min.) or written exam, presentation (10-15 min.) and written assignment (1500-2000 words) – Components of final grade: Written examination (50%), presentation (30 %), multimedia assignment (20 %) or written exam (50 %), presentation (30 %), written assignment (20 %) – Form of module retake examination: Written examination or oral examination		
Language: Englisch		

MK-141-EN	MK-141-EN Sustainable Animal Nutrition and Husbandry	6 CP
	Sustainable Animal Nutrition and Husbandry	
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Tierernährung und Ernährungsphysiologie	2. Sem.
	Offered for the first time: SS 2027	
	Intake capacity: nicht limitiert	
Frequency and Duration: SS, 1 Semester		
Module Coordinator: Nachhaltige und Funktionelle Tierernährung		
Applies to the Study Programmes: One Health, Master (2.);		
Prerequisites for Participation: None		
Learning Outcomes: The students are able to – analyse and critically evaluate the environmental impacts of animal nutrition; – optimise nutrient transformation efficiency, assess competition for food between humans and animals, and identify possibilities and limitations for ist reduction; – analyse, evaluate, and apply feeding strategies (e.g., feed enzymes, alternative biomasses) to improve resource efficiency and reduce emissions; – compare different livestock production systems for major farm animal species and critically assess their environmental and animal welfare impacts; – analyse livestock production systems considering environmental, animal welfare, and working conditions, and provide a reflective, evidence-based assessment of the systems in complex contexts.		
Module Content: – Environmental impacts of animal nutrition – Principles of nutrient transformation in the production of animal-derived foods – Practical feeding of livestock – Feeding strategies to reduce resource consumption and emissions – Animal husbandry systems of the most important livestock species – Environmental and animal-welfare impacts of animal husbandry		
Forms of Instruction:	Contact hours	Preparation and follow-up work
Lecture	60	120
Total:	180	
Prerequisites for Examination: None		
Module Examination: – Form(s) of assessment: Written examination and written assignment (3-5 pages) – Components of final grade: Written examination (75 %), written assignment (25 %) – Form of module retake examination: Written examination (75 %) and revision of the written assignment (25 %)		
Language: Englisch		

MK-142-EN	MK-142-EN Infectious Diseases in Animals		6 CP
	Infectious Diseases in Animals		
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Tierzucht und Haustiergenetik		2. Sem.
	Offered for the first time: SS 2027		
	Intake capacity: nicht limitiert		
Frequency and Duration: SS, 1 Semester			
Module Coordinator: Haustier- und Pathogenetik			
Applies to the Study Programmes: One Health, Master (2.);			
Prerequisites for Participation: None			
Learning Outcomes: The students – analyze the significance of infectious diseases in animals for agriculture within the One Health context; – possess advanced knowledge of the characteristics, diagnostics, and control strategies of different pathogen groups (e.g., viruses, prions, bacteria, parasites); – analyze selected major animal diseases and zoonoses with regard to their impacts on human, animal, and environmental health, as well as differences in diagnostic and control approaches within the One Health context.			
Module Content: – Significance of infectious diseases in animals for agriculture and within the One Health context – General characteristics, diagnostics, and control of viruses, prions, bacteria, and ecto-/endoparasites in animals – Characterization of selected animal diseases and zoonoses			
Forms of Instruction:		Contact hours	Preparation and follow-up work
Lecture		60	120
Total:		180	
Prerequisites for Examination: None			
Module Examination: – Form(s) of assessment: Assignment set (6-12) – Components of final grade: Assignment set (100 %) – Form of module retake examination: Written examination			
Language: Englisch			