

Winter Semester 2026/27

As of 18/08/2026

Module Directory

Faculty 09 - Agricultural Sciences, Nutritional Sciences and Environmental
Management

B.Sc. Global Food Systems

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

<https://www.uni-giessen.de/en/faculties/f09/studies/while-studying/study-schedule>

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BK-005 / BK-005-EN	BK-005 / BK-005-EN Mathematics and Statistics		6 CP
	Mathematik und Statistik		
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Pflanzenbau und Pflanzenzüchtung II		1./3. Sem.
	Offered for the first time: WS 2015/16		
	Intake capacity: nicht limitiert		
Frequency and Duration: WS, 1 Semester			
Module Coordinator: Biometrie und Populationsgenetik mit dem Schwerpunkt Bioinformatik			
Applies to the Study Programmes: Agrarwissenschaften, Bachelor (3.); Environmental Sciences, Bachelor (1.); Global Food Systems, Bachelor (1.); Nachwachsende Rohstoffe und Bioressourcen, Bachelor (3.); Ökotrophologie, Bachelor (3.); Umwelt und globaler Wandel, Bachelor (1.); BBB Agrarwirtschaft, Bachelor (1./3.); BBB Ernährung und Hauswirtschaft, Bachelor (1./3.);			
Prerequisites for Participation: None			
Learning Outcomes: The students – know mathematical foundations and basics of statistical methods; – are able to conduct statistical analyses in their fields of study; – know how to use statistical software for data analysis in their field of study; – are able to understand and interpret outputs of statistical software.			
Module Content: – Methods of descriptive statistics – Theory of statistical tests – Experimental design – Analysis of variance and multiple comparisons – Regression analysis – Matrices and vectors, linear equation systems			
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			

BK-101-EN	BK-101-EN Introduction to Biochemistry	6 CP
	Introduction to Biochemistry	
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Pflanzenbau und Pflanzenzüchtung I	1. Sem.
	Offered for the first time: WS 2026/27	
	Intake capacity: nicht limitiert	
Frequency and Duration: WS, 1 Semester		
Module Coordinator: Genetik der Nutzpflanzendiversität		
Applies to the Study Programmes: Environmental Sciences, Bachelor (1.); Global Food Systems, Bachelor (1.);		
Prerequisites for Participation: None		
Learning Outcomes: The students – have all the necessary chemical foundations to understand essential biochemical processes from a functional perspective (principles of chemical bonding, acid-base equilibrium, redox systems, thermodynamics); – know and understand the structure, biosynthesis, and function of essential biomolecules (carbohydrates, amino acids and proteins, nucleic acids, lipids, and membrane lipids); – are familiar with the basic regulatory principles of living cells; – have a deep understanding of metabolic processes, particularly photosynthesis and dissimilation in general and human metabolism in particular (essential nutrients, regulation, toxicology); – understand the cycles of the most important macronutrients (N, P, C) at the molecular level.		
Module Content: – Fundamentals of Chemistry (principles of chemical bonding, acid-base equilibrium, redox systems, thermodynamics) – Biomolecules (carbohydrates, amino acids and proteins, nucleic acids, lipids and membrane lipids) – Gene expression – Enzymes and enzyme kinetics – Membrane proteins (channels, transporters, pumps) – Receptors and signal transduction – Photosynthesis and dissimilation – Metabolic regulation – Biochemistry of human nutrition – Human toxicology – N, P, and C cycles		
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 – Components of final grade: Written examination (100 %) – Form of module retake examination: Written examination		
Language: Englisch		

BK-102-EN	BK-102-EN Biology	6 CP
	Biology	
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Insektenbiotechnologie	1. Sem.
	Offered for the first time: WS 2026/27	
	Intake capacity: nicht limitiert	
Frequency and Duration: WS, 1 Semester		
Module Coordinator: Insektenbiotechnologie im Pflanzenschutz		
Applies to the Study Programmes: Environmental Sciences, Bachelor (1.); Global Food Systems, Bachelor (1.);		
Prerequisites for Participation: None (recommended: upper secondary school level biology – basic course)		
Learning Outcomes: The students – have a solid understanding of the fundamentals of cell biology, botany, zoology, and microbiology, as well as basic chemical and biochemical principles of biology; – are able to classify and understand cell biological, botanical, zoological, microbiological, and biochemical issues that arise in their field.		
Module Content: – Cells as the smallest unit of life (procaryotic and eucaryotic, basics of cellular structures and their functions, cell-cell communication, specialization, cell division) – DNA as genetic material containing the code of life (genetic code, DNA replication, inheritance, mutation, recombination, meiosis) – Evolution as source of organism diversity (molecular and mechanistic basics of evolution, driving forces of evolution, origin of life hypothesis) – Plants (evolution and diversity, reproduction, structure and function, significance for life on earth) – Fungi (evolution and diversity, reproduction, role in ecosystems and influence on plants and animals) – Animals (evolution and diversity, development) – Microorganisms (eukaryotic versus procaryotic microorganisms, bacteria and archaea, significance for ecosystems and humans) – Energy sources of life and nutrition types (photosynthesis, aerobic and anaerobic respiration, fermentation) – Ecosystems (definition ecosystems, role of organisms in ecosystems, biogeochemical cycles and their importance for life, ecosystem services, human influence)		
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 – Components of final grade: Written examination (100 %) – Form of module retake examination: Written examination		
Language: Englisch		

BK-103	BK-103 Language Acquisition I	6 CP
	Language Acquisition I	
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Dekanat	1. Sem.
	Offered for the first time: WS 2026/27	
	Intake capacity: nicht limitiert	
Frequency and Duration: WS, 1 Semester		
Module Coordinator: Studiendekanat		
Applies to the Study Programmes: Environmental Sciences, Bachelor (1.); Global Food Systems, Bachelor (1.);		
Prerequisites for Participation: Deutschkenntnisse auf dem Niveau GER A2		
Learning Outcomes: Die Studierenden – erwerben grundlegende Sprachkenntnisse in Deutsch, bzw. bei nachgewiesenen Deutschkenntnissen auf mindestens Niveau C1 GER in einer Fremdsprache, die nicht ihre Erstsprache ist; – verfügen über Sprachkompetenzen, die eine einfache mündliche und schriftliche Kommunikation im Alltag und im universitären Umfeld ermöglichen; – verstehen grundlegende sprachliche Strukturen und kulturelle Kontexte der gewählten Sprache.		
Module Content: – Basisgrammatik und Wortschatz – Hörverstehen und Leseverstehen – Schreiben einfacher Texte – Alltagskommunikation – Studierende, die Deutschkenntnisse auf mindestens Niveau C1 GER nachweisen, wählen im Umfang von 6 CP eine oder mehrere andere Sprachen.		
Forms of Instruction:	Contact hours	Preparation and follow-up work
Lecture	90	90
Total:	180	
Prerequisites for Examination: Keine		
Module Examination: – Form(s) of assessment: Bearbeitung von Aufgaben (12-16 Stück) und mündliche Prüfung oder 2 Klausuren und mündliche Prüfung – Components of final grade: Bearbeitung von Aufgaben (50 %), mündliche Prüfung (50 %) oder Klausur (je 30 %), mündliche Prüfung (40 %) – Form of module retake examination: Klausur (60 %) und mündliche Prüfung (40 %)		
Language: Deutsch		

BK-104	BK-104 Language Acquisition II	6 CP
	Language Acquisition II	
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Dekanat	2. Sem.
	Offered for the first time: SS 2027	
	Intake capacity: nicht limitiert	
Frequency and Duration: SS, 1 Semester		
Module Coordinator: Studiendekanat		
Applies to the Study Programmes: Environmental Sciences, Bachelor (2.); Global Food Systems, Bachelor (2.);		
Prerequisites for Participation: Language Acquisition I (BK-103)		
Learning Outcomes: Die Studierenden – vertiefen ihre Sprachkenntnisse in Deutsch, bzw. bei nachgewiesenen Deutschkenntnissen auf mindestens Niveau C1 GER in einer Fremdsprache, die nicht ihre Erstsprache ist und erweitern ihren aktiven Wortschatz für akademische und berufsbezogene Situationen; – können sich in vertrauten Themenbereichen zusammenhängend und adressatengerecht mündlich und schriftlich äußern; – reflektieren kulturelle und kommunikative Unterschiede und wenden interkulturelle Kompetenzen sicher an.		
Module Content: – Aufbau der Grammatikkenntnisse – Hör- und Leseverstehen erweitern – Schreiben komplexerer Texte – Kommunikation im Studium – Studierende, die Deutschkenntnisse auf mindestens Niveau C1 GER nachweisen, wählen im Umfang von 6 CP eine oder mehrere andere Sprachen.		
Forms of Instruction:	Contact hours	Preparation and follow-up work
Lecture	90	90
Total:	180	
Prerequisites for Examination: Keine		
Module Examination: – Form(s) of assessment: Bearbeitung von Aufgaben (12-16 Stück) und mündliche Prüfung oder 2 Klausuren und mündliche Prüfung – Components of final grade: Bearbeitung von Aufgaben (50 %), mündliche Prüfung (50 %) oder Klausur (je 30 %), mündliche Prüfung (40 %) – Form of module retake examination: Klausur (60 %) und mündliche Prüfung (40 %)		
Language: Deutsch		

BK-105-EN	BK-105-EN Ecology and Biodiversity	6 CP
	Ecology and Biodiversity	
Core Module / Optional Module	Agrarwissenschaften, Ökotropologie und Umweltmanagement / Institut für Landschaftsökologie und Ressourcenmanagement	2. Sem.
	Offered for the first time: SS 2027	
	Intake capacity: nicht limitiert	
Frequency and Duration: SS, 1 Semester		
Module Coordinator: Landschaftsökologie und Landschaftsplanung		
Applies to the Study Programmes: Environmental Sciences, Bachelor (2.); Global Food Systems, Bachelor (2.);		
Prerequisites for Participation: None		
Learning Outcomes: The students – know fundamental concepts of ecology; – are familiar with key types of ecological studies and can differentiate between their approaches; – develop a basic understanding of ecological relationships; – understand the functioning of ecological systems and their scale dependency; – are able to analyze interactions between biotic and abiotic factors as well as human influences in ecological systems; – know the different components of biodiversity; – have knowledge of the importance of biodiversity for ecosystem functioning; – can describe and contextualize the impacts of global change on ecosystems and their biological diversity.		
Module Content: – Disciplines in ecology – Types of ecological studies – Principles of the structure of ecological systems – Biogeochemical cycles (nutrient cycles) – Population ecology, community ecology, landscape ecology – Biodiversity patterns – Metrics for quantifying biodiversity – Functional biodiversity – Relationship between biodiversity and ecosystem functions, including ecosystem services – Biodiversity and global change (land-use change, climate change, nitrogen deposition, invasive species)		
Forms of Instruction:	Contact hours	Preparation and follow-up work
Lecture	56	112
Excursion	4	8
Total:	180	
Prerequisites for Examination: None		
Module Examination: – Form(s) of assessment: Written examination – Components of final grade: Written examination (100 %) – Form of module retake examination: Written examination		
Language: Englisch		

BK-106-EN	BK-106-EN Agricultural Production and its Environmental Impacts	6 CP
	Agricultural Production and ist Environmental Impacts	
Core Module / Optional Module	Agrarwissenschaften, Ökotropologie und Umweltmanagement / Institut für Pflanzenernährung	2. Sem.
	Offered for the first time: SS 2027	
	Intake capacity: nicht limitiert	
Frequency and Duration: SS, 1 Semester		
Module Coordinator: Pflanzenernährung		
Applies to the Study Programmes: Environmental Sciences, Bachelor (2.); Global Food Systems, Bachelor (2.);		
Prerequisites for Participation: None		
Learning Outcomes: The students – know the main agricultural land use systems and can classify them systematically; – understand key cultivation practices of major crops and can explain their application; – know major livestock production systems and can describe their characteristics; – analyze and assess the environmental impacts of crop and animal production.		
Module Content: Agricultural Production: – Principles of crop production and yield formation – Soil fertility and soil cultivation – Crop plants as food and renewable resources – Husbandry of cattle, pigs, poultry, sheeps and goats – Animal husbandry systems Environmental Impacts: – Effects of climate change on agricultural production systems – Climate gas emissions from crop and animal production systems – Soil degradation and soil erosion – Nutrient emissions and eutrophication – Emission of plant protection agents – Loss of biodiversity – Water consumption and soil salinization – Deforestation		
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 – Components of final grade: Written examination (100 %) – Form of module retake examination: Written examination		
Language: Englisch		

BK-107-EN	BK-107-EN Land Use Systems	6 CP
	Land Use Systems	
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Landschaftsökologie und Ressourcenmanagement	3. Sem.
	Offered for the first time: WS 2027/28	
	Intake capacity: nicht limitiert	
Frequency and Duration: WS, 1 Semester		
Module Coordinator: Landnutzungssysteme mit dem Schwerpunkt Agroforst		
Applies to the Study Programmes: Environmental Sciences, Bachelor (3.); Global Food Systems, Bachelor (3.);		
Prerequisites for Participation: None		
Learning Outcomes: The students – are able to define and systematize land use systems and trace their historical and global development; – are familiar with the characteristics, benefits and trade-offs of a range of traditional and innovative land use systems; – are able to critically assess the ecological functions, resource flows, and socio economic outcomes of diverse land use systems; – can develop a robust experimental design to investigate specific effects of a land use system.		
Module Content: – Definition and classification of land use systems – In-depth discussion of selected traditional and innovative land use systems – Ecological processes and resource flows in land use systems – Socio-economic aspects of land use systems – Hypothesis formulation, experimental design and write-up		
Forms of Instruction:	Contact hours	Preparation and follow-up work
Lecture	40	80
Exercises	20	40
Total:	180	
Prerequisites for Examination: None		
Module Examination: – Form(s) of assessment: Written assignment (3-5 pages) and presentation (5-10 min.) – Components of final grade: Written assignment (50 %), presentation (50 %) – Form of module retake examination: Presentation (5-10 min., 50 %) and revision of the written assignment within four weeks (50 %)		
Language: Englisch		

BK-108-EN	BK-108-EN Climate Science		6 CP
	Climate Science		
Core Module / Optional Module	Extern / Extern		3. Sem.
	Offered for the first time: WS 2027/28		
	Intake capacity: nicht limitiert		
Frequency and Duration: WS, 1 Semester			
Module Coordinator: Extern			
Applies to the Study Programmes: Environmental Sciences, Bachelor (3.); Global Food Systems, Bachelor (3.);			
Prerequisites for Participation: None			
Learning Outcomes: The students – understand the physical processes that determine the Earth’s energy balance; – explain the sources and transformation processes of greenhouse gases; – analyze the drivers of past, present, and future climate change; – are able to explain and contextualize the impacts of climate change on nature and human well-being; – analyze climate scenarios in terms of their development, assumptions, and implications; – explain key milestones in climate change research and policy-making and can assess their relevance.			
Module Content: – Global energy budget – Greenhouse gases, sources and transformation processes – Past, current and future climate change, its drivers and impacts – Feedback loops and tipping points – Climate change scenarios – History of climate change research – Key legislation and policies related to climate change			
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 – Components of final grade: Written examination (100 %) – Form of module retake examination: Written examination			
Language: Englisch			

BK-109-EN	BK-109-EN Intercultural Communication		6 CP
	Intercultural Communication and Presentation		
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Ernährungswissenschaft		3. Sem.
	Offered for the first time: SS 2008		
	Intake capacity: nicht limitiert		
Frequency and Duration: SS, 1 Semester			
Module Coordinator: Internationale Ernährungssicherung			
Applies to the Study Programmes: Environmental Sciences, Bachelor (3.); Global Food Systems, Bachelor (3.);			
Prerequisites for Participation: None			
Learning Outcomes: The students – develop intercultural sensitivity and are able to apply it reflectively in international contexts; – present and discuss scientific content in a target-group-oriented manner; – collaborate effectively in international teams.			
Module Content: – Intercultural Communication – Presentation Techniques – Scientific Writing and Presentation – Group Work and Discussion			
Forms of Instruction:	Contact hours	Preparation and follow-up work	
Seminar	30	60	
Exercises	30	60	
Total:	180		
Prerequisites for Examination: None			
Module Examination: – Form(s) of assessment: Assignment set (4-6) and Presentation (5-10 min.) – Components of final grade: Assignment set (50 %), Presentation (50 %) – Form of module retake examination: Written assignment (8-10 pages)			
Language: Englisch			

BK-110-EN	BK-110-EN Fundamentals of Life Cycle Assessment		6 CP
	Fundamentals of Life Cycle Assessment		
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Landschaftsökologie und Ressourcenmanagement		4. Sem.
	Offered for the first time: SS 2008		
	Intake capacity: nicht limitiert		
Frequency and Duration: SS, 1 Semester			
Module Coordinator: Umweltbilanzierung			
Applies to the Study Programmes: Environmental Sciences, Bachelor (4.); Global Food Systems, Bachelor (4.);			
Prerequisites for Participation: None			
Learning Outcomes: Students are able to – explain the scope of an LCA and distinguish it from other environmental assessment methods; – explain the four phases of an LCA (ISO 14040/44) and describe their components; – define the scope and framework of the study, including the functional unit and system boundaries; – calculate simple life cycle inventories (LCI) and apply allocation methods; – explain the basic principles of impact assessment and describe selected impact categories (e.g., climate impact); – distinguish between and interpret analytical elements such as hotspot, contribution, or sensitivity analyses; – critically evaluate LCA results.			
Module Content: – Introduction to LCA: Motivation, fields of application, distinction from other methods – Overview of the four phases of LCA according to ISO 14040/44 – Scope and framework: functional unit, system boundaries – Life Cycle Inventory (LCI): process chains, input/output data, data types, calculations, allocation methods – Impact assessment (LCIA): Basic principles, midpoints and endpoints, selected impact categories – Analytical elements: Contribution and sensitivity analyses – Interpretation of results: Evaluation, uncertainties – Case studies on application.			
Forms of Instruction:		Contact hours	Preparation and follow-up work
Lecture		30	60
Exercises		30	60
Total:		180	
Prerequisites for Examination: None			
Module Examination: – Form(s) of assessment: Written examination – Components of final grade: Written examination (100 %) – Form of module retake examination: Written examination			
Language: Englisch			

BK-111-EN	BK-111-EN Thesis Lab: Scientific Writing and Communication		6 CP
	Thesis Lab: Scientific Writing and Communication		
Core Module / Optional Module			6. Sem.
	Offered for the first time: WS 2027/28		
	Intake capacity: nicht limitiert		
Frequency and Duration: WS, 1 Semester			
Module Coordinator:			
Applies to the Study Programmes: Environmental Sciences, Bachelor (6.); Global Food Systems, Bachelor (6.);			
Prerequisites for Participation: At least ten core modules and at least five elective (profile) modules must be successfully completed.			
Learning Outcomes: The students – use reference management software effectively for academic work; – critically, reflectively, and responsibly apply artificial intelligence in academic work; – create scientific graphics and graphical abstracts for scientific communication; – communicate scientific content in a target-group-oriented manner across different formats (social media, websites, press releases); – develop a clear, coherent, and feasible research concept.			
Module Content: – Use of reference software for specific academic content – Drafting an annotated outline of the thesis – Development and presentation of the thesis’ project concept and initial findings – Creation of a visual abstract, social media post and press release – How to handle copyright and dealing with plagiarism – Use of various AI models			
Forms of Instruction:	Contact hours	Preparation and follow-up work	
Lecture	20	40	
Seminar	40	80	
Total:	180		
Prerequisites for Examination: None			
Module Examination: – Form(s) of assessment: Presentation (15-30 min.) and written assignment (2-3 pages) – Components of final grade: Presentation (50 %), written assignment (50 %) – Form of module retake examination: Oral examination (50 %) and revision of the written assignment within four weeks (50 %)			
Language: Englisch			

BK-112-EN	BK-112-EN Introduction to Global Food Systems	6 CP
	Introduction to Global Food Systems	
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Ernährungswissenschaft	1. Sem.
	Offered for the first time: WS 2026/27	
	Intake capacity: nicht limitiert	
Frequency and Duration: WS, 1 Semester		
Module Coordinator: Internationale Ernährungssicherung		
Applies to the Study Programmes: Global Food Systems, Bachelor (1.);		
Prerequisites for Participation: None		
Learning Outcomes: The students – are familiar with the various components of food systems (e.g. food supply chains, food environments, nutrition and health outcomes); – know about the environmental, technological, political, economic, demographic and socio-cultural drivers of food systems; – are able to evaluate food systems on the basis of conceptual frameworks and identify relevant sustainability implications; – learn fundamental research techniques (literature search and structured research; creating and interpreting graphs; presenting scientific content).		
Module Content: – Key elements of the food system: pre-production, production, food loss and waste management, supply chains, consumer behaviour, food environment, consumption, nutritional health – Overarching contexts and influencing factors: the environment; technology, science and innovations; politics and geopolitics; socio-economics; socio-culture; demographics – The food system’s impact on food security, nutrition and health through biological, social and economic transmission channels – Sustainable Development Goals and the global food system – literature search and research – methods for determining the state of knowledge – creating and understanding scientific graphs – preparing a scientific poster – presentation and discussion as part of a final conference		
Forms of Instruction:	Contact hours	Preparation and follow-up work
Lecture	45	90
Seminar	15	30
Total:	180	
Prerequisites for Examination: Written assignment (poster)		
Module Examination: – Form(s) of assessment: Assignment set (3-5) or written examination – Components of final grade: Assignment set (100 %) or written examination (100 %) – Form of module retake examination: Revision of assignments or written examination or oral examination		

BK-113-EN	BK-113-EN Policy and Food Systems		6 CP
	Policy and Food Systems		
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Agrarpolitik und Marktforschung		2. Sem.
	Offered for the first time: SS 2027		
	Intake capacity: nicht limitiert		
Frequency and Duration: SS, 1 Semester			
Module Coordinator: Globaler Handel und Welternährung			
Applies to the Study Programmes: Environmental Sciences, Bachelor (2.); Global Food Systems, Bachelor (2.);			
Prerequisites for Participation: None			
Learning Outcomes: The Students – understand the concept of food systems and can explain key components and stakeholders along and alongside food value chains, as well as their roles, interactions, and governance structures; – can explain the fundamental economic relationships and political mechanisms within agricultural and food systems; – are able to analyse policy instruments using theoretical frameworks and can assess the impact of government intervention on various actors, as well as on the environment and society; – can identify and critically discuss conflicting goals between ecological, economic, and social objectives; – can identify market failures in the food sector and critically discuss appropriate economic policy solutions;			
Module Content: – The concept of "food systems" – Governance of food systems – Social and political dimensions within food systems – Microeconomic foundations – Market failure in the food sector – Policy instruments and their effects			
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 and presentation (15-30 Min.) or written exam – Components of final grade: Written examination (60 %), presentation (40 %) or written exam (100 %) – Form of module retake examination: Written examination (60 %) and presentation (video, 15-30 min.; 40 %) or written examination (100 %)			
Language: Englisch			

BK-114-EN	BK-114-EN Human Nutritional Physiology		6 CP
	Human Nutritional Physiology		
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: Tierernährung			
Applies to the Study Programmes: Global Food Systems, Bachelor (2.);			
Prerequisites for Participation: None			
Learning Outcomes: The students – understand the significance of major nutrients (proteins, fats, carbohydrates), their digestion, and intermediary metabolism; – understand the role of water and the regulation of the body’s water balance; – analyze the physiological effects of dietary fiber; – explain the principles of energy metabolism in the human body and the biochemical mechanisms underlying it; – assess the functions of fat- and water-soluble vitamins and the health consequences of insufficient intake; – assess the significance of minerals (macro- and trace elements) and the health consequences of insufficient intake; – recognize and contextualize the links between malnutrition and health outcomes in cases of deficiency, overnutrition, and undernutrition.			
Module Content: – General and methodological concepts of nutritional physiology – Carbohydrates, proteins, and lipids: digestion, influencing factors, absorption, metabolic utilization, physiological effects, nutritional physiological evaluation – Energy balance: methodology, determinants and influencing factors, stages and efficiency of food energy utilization, thermoregulation – Vitamins and minerals (macrominerals and trace elements): characteristics, occurrence in foods, biological activity, functions and deficiency, assessment of nutritional status			
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 – Components of final grade: Written examination (100 % – Form of module retake examination: Written examination			
Language:			

BK-115-EN	BK-115-EN Food Production: Animals		6 CP
	Food Production: Animals		
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Tierzucht und Haustiergenetik		3. Sem.
	Offered for the first time: WS 2027/28		
	Intake capacity: nicht limitiert		
Frequency and Duration: WS, 1 Semester			
Module Coordinator: Tierhaltung und Haltungsbiologie			
Applies to the Study Programmes: Global Food Systems, Bachelor (3.);			
Prerequisites for Participation: None			
Learning Outcomes: The students – know the major animal-derived food commodities worldwide and their uses; – understand basic animal production systems across different world regions and production standards; – are able to explain the relationship between animal raw materials, their composition, and their uses; – understand the role of animal production in global food systems; – have basic knowledge of sustainability and animal welfare aspects of animal husbandry.			
Module Content: – Production systems of major livestock species (e.g. scale, intensity) and their impacts on animal welfare and the environment – Feeding of conventional and novel livestock species (cattle, pigs, poultry, insects) – Factors influencing the nutritional quality of key animal products (meat, milk, eggs, insect biomass) – Legal and regulatory frameworks (e.g. animal welfare legislation, EU Organic Regulation, ITW, GLOBALG.A.P., Welfair)			
Forms of Instruction:	Contact hours	Preparation and follow-up work	
Lecture	52	120	
Seminar	8		
Total:	180		
Prerequisites for Examination: None			
Module Examination: – Form(s) of assessment: Written examination or written exam and written assignment (10-15 pages) – Components of final grade: Written examination (100 %) or written examination (50 %), written assignment (50 %) – Form of module retake examination: Written examination			
Language: Englisch			

BK-117-EN	BK-117-EN Food Production: Plants		6 CP
	Food Production: Plants		
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Pflanzenbau und Pflanzenzüchtung I		4. Sem.
	Offered for the first time: SS 2028		
	Intake capacity: nicht limitiert		
Frequency and Duration: SS, 1 Semester			
Module Coordinator: Nachwachsende Rohstoffe und Bioressourcen			
Applies to the Study Programmes: Global Food Systems, Bachelor (4.);			
Prerequisites for Participation: None			
Learning Outcomes: The students – know the major plant-based global food commodities; – understand basic production systems of key crops across different world regions; – are able to explain the valorisation of selected crops into food products, food ingredients and industrial co-products.			
Module Content: – Global production systems of major crop plants – Cultivation systems of selected crop plants in different world regions, including production intensity levels and production standards – Relationship between plant raw materials, their composition, and their use in nutrition and food processing – Influence of production practices, site conditions, and management on the quality of plant-based products – Legal and regulatory frameworks governing plant production standards			
Forms of Instruction:	Contact hours	Preparation and follow-up work	
Lecture	48	120	
Excursion	12		
Total:	180		
Prerequisites for Examination: None			
Module Examination: – Form(s) of assessment: Written examination or written exam and written assignment (10-15 pages) – Components of final grade: Written examination (100 %) or written exam (50 %), written assignment (50 %) – Form of module retake examination: Written examination			
Language: Englisch			

BK-118-EN	BK-118-EN Sustainability of Food		6 CP
	Sustainability of Food		
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Pflanzenbau und Pflanzenzüchtung II		4. Sem.
	Offered for the first time: SS 2028		
	Intake capacity: nicht limitiert		
Frequency and Duration: SS, 1 Semester			
Module Coordinator: Ökologischer Landbau mit dem Schwerpunkt nachhaltige Bodennutzung			
Applies to the Study Programmes: Global Food Systems, Bachelor (4.);			
Prerequisites for Participation: None			
Learning Outcomes: The students – explain key concepts and dimensions of sustainability in food systems; – analyze the environmental, social, and economic impacts of food production, considering key stakeholders; – evaluate food systems and food production using systems thinking; – develop strategies to improve sustainability in food systems by integrating different perspectives; – assess the sustainability of food systems, identify key challenges, and communicate possible solutions.			
Module Content: – Principles of sustainability in global food systems – Sustainability of production, processing, trade, and consumption – Environmental, social, and economic aspects of food systems – Global differences and examples of sustainable and unsustainable systems – Sustainability assessment and transformation approaches (e.g. indicators, strategies) – Excursions and case studies involving local and international stakeholders			
Forms of Instruction:	Contact hours	Preparation and follow-up work	
Lecture	30	60	
Excursion	30	60	
Total:	180		
Prerequisites for Examination: participation at the excursions (minimum 75 %)			
Module Examination: – Form(s) of assessment: Written assignment (8 pages) – Components of final grade: Written assignment (100 %) – Form of module retake examination: Revision of the written assignment within four weeks			
Language: Englisch			

BK-119-EN	BK-119-EN Food Economics		6 CP
	Food Economics		
Core Module / Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Agrarpolitik und Marktforschung		4. Sem.
	Offered for the first time: SS 2028		
	Intake capacity: nicht limitiert		
Frequency and Duration: SS, 1 Semester			
Module Coordinator: Marktlehre der Agrar- und Ernährungswirtschaft			
Applies to the Study Programmes: Global Food Systems, Bachelor (4.);			
Prerequisites for Participation: None			
Learning Outcomes: The students – apply key economic concepts (supply and demand, elasticity, market equilibrium, as well as producer and consumer surplus) in the context of food markets; – analyze how market structure, transaction costs, and institutional frameworks influence food value chains and prices; – use basic quantitative methods to interpret market data and price developments; – assess the economic impacts of trade, exchange rate movements, and agricultural policies on food availability, prices, and farm incomes; – critically reflect on and evaluate policy measures in the food sector, considering trade-offs and distributional effects.			
Module Content: – Introduction: economics for food systems – Supply and demand in food markets – Elasticities and price responsiveness – Market structure and coordination in food value chains – Price formation, storage, and seasonality – Trade and global food markets – Food policy, subsidies, and safety nets – Markets, nutrition, and consumer behaviour – Case studies			
Forms of Instruction:	Contact hours	Preparation and follow-up work	
Lecture	40	80	
Seminar	20	40	
Total:	180		
Prerequisites for Examination: None			
Module Examination: – Form(s) of assessment: Written examination or written exam an presentation (10-15 min.) – Components of final grade: Written examination (100 %) or written examination (60 %), presentation (40 %) – Form of module retake examination: Written examination			
Language: Englisch			

BP-008 / BK-116-EN	BP-008 / BK-116-EN Basics of International Food and Nutrition Security	6 CP
	Grundlagen der Internationalen Ernährungssicherung	
Optional Module	Agrarwissenschaften, Ökotrophologie und Umweltmanagement / Institut für Ernährungswissenschaft	3./5. Sem.
	Offered for the first time: WS 2015/16	
	Intake capacity: nicht limitiert	
Frequency and Duration: WS, 1 Semester		
Module Coordinator: Internationale Ernährungssicherung		
Applies to the Study Programmes: Profil, Bachelor (5.); Global Food Systems, Bachelor (3.);		
Prerequisites for Participation: XXX		
Learning Outcomes: – understand the fundamental concept of food and nutrition security and can situate it within the food system; – can identify the various determinants of food and nutrition security; possess a coherent understanding of the prevalence, diagnosis and management of global malnutrition conditions in different population groups (including underweight and overweight, stunting, wasting and micronutrient deficiencies); – can describe different indicators as well as anthropometric and other methods for diagnosing the various forms of malnutrition; – understand the determinants of sustainable nutrition and the role of nutrition in the global Sustainable Development Goals; – can identify ways to improve the nutritional situation in countries of the Global South.		
Module Content: – The concept of food security (UNICEF model) – The concept of food systems, the food environment and sustainable nutrition/ nutrition within planetary boundaries – The Sustainable Development Goals (SDGs) and nutrition security – Global Nutrition Transition – Methods of dietary assessment: anthropometric measurement methods, recall methods, determination of dietary diversity – Nutrition education, including through food-based approaches, integrated approaches such as ‘nutrition-sensitive agriculture extension’, school feeding programmes – Nutrition-sensitive agriculture and value chains, including the role of home gardens and the processing of local food – The role of the health sector in food security (including the One Health approach); WASH concept – Guidelines and challenges in food aid – Bilateral and multilateral development cooperation		
Forms of Instruction:	Contact hours	Preparation and follow-up work
Lecture	45	90
Seminar	15	30
Total:	180	
Prerequisites for Examination: None		
Module Examination: – Form(s) of assessment: Written examination and assignment set (2-4) or term paper (5 pages) and assignment set (2-4)		

- **Components of final grade:** Written examination (50 %) and assignment set (50 %) or term paper (50 %) and assignment set (50 %)
- **Form of module retake examination:** Written examination (50 %) and reflexion of the assignment set (50 %) or revision of the term paper (50 %) and reflexion of the assignment set (50 %)

Language: Deutsch und/oder Englisch