
Module Handbook

M5 a58 Global Food, Nutrition and Health

Faculty of Life Sciences: Food, Nutrition and Health

University of Bayreuth

General Information and Reading Notes

A central component of the Bologna process is the modularisation of degree programmes which means a switch from the former course system to a modular system by grouping thematically related courses into course bundles – or modules.

This module handbook contains the description of all modules offered in the degree programme. The module handbook gives an overview and provides students, prospective students, and other interested persons with information on the content of the individual modules, their qualification goals, as well as qualitative and quantitative requirements.

Table of Contents and Index

The table of contents provides an overview of the module areas and modules of the degree programme. The information in brackets after the title of a module contains the date on which its description was last updated. Example of notation: 24W denotes the winter semester 2024/25, 25S denotes the following summer semester 2025.

The index at the end of the module handbook lists all modules of the degree programme in alphabetical order.

Module description

The description of a module includes its learning content, objectives, and assessment methods. For modules with multiple assessments, the weight of each assessment toward the final grade is specified. The *examination and study regulations* for each degree program define the scope and duration of assessments.

The QR code in the description links to the module's website. There, you can find the courses that belong to this module and see which other degree programs include this module.

Legal Disclaimer

Module descriptions provide students with detailed information regarding the content and the structure of the modules of a degree program. Only the relevant *examination and study regulations* are legally binding.

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Fak721259: Food and Society

Valid from: 01.10.2026

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 120
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Bartelmeß, Tina; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written exam or essay	1	5

Prerequisites

None

Learning objectives

This module explores the social and cultural aspects of food. The students acquire basic knowledge about social science theories of food and nutrition. Based on this knowledge, students are able to identify social structures and cultural norms that influence food habits in real life contexts. Furthermore, students are able to explain how food sociology can help to conceptualise the connections between individual food habits and wider social patterns. Finally, students are able to recognize the importance of food in the development of identities, cultures, group dynamics, symbolism, communication, and other sources of meaning in human life.

Learning contents

- Sociological Perspectives on Food & Nutrition
- Socio-ecological model of food behaviour
- Food & Identity
- Food & Migration
- Food in the Media & Digital Food Cultures
- Transforming Food Cultures

Type and scope of the courses

seminar (2 hours per week)

Literature:

Literature recommendations for preparation:

- Gibson, M. (2020). Food and Society. London: Elsevier.
- Murcott, A. (2019). Introducing the sociology of Food & Eating. London, New York: Bloomsbury Academic.

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Fak721260: Global Health Policy

Valid from: 01.10.2026

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 120
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Dorlach, Tim; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written exam or semester tasks	1	5

Prerequisites

None

Learning objectives

Students acquire a basic understanding of the political institutions and actors that shape global health outcomes. Based on this knowledge, they are able to analyze current developments in global health policy and to evaluate pertinent reform proposals.

Learning contents

The lecture "Global Health Policy" provides students with a broad overview of the actors and institutions that shape global health policy. Adopting a global policy perspective, we will learn about the global institutions that govern health systems and outcomes, and how this global health policy regime has developed over time. Institutions to be studied include the World Health Organization, the World Bank and the Gates Foundation. We will learn about the historical development, the potential, as well as the limits of these and other global health policy institutions through case studies of various concrete health policy issues, including vaccination, infant-formula marketing and tobacco control.

Type and scope of the courses

Lecture (2 hours per week)

Literature:

Clinton, C. & Sridhar, D. (2017). Governing global health: Who runs the world and why?. Oxford University Press.

Chorev, N. (2017). The World Health Organization between North and South. Cornell University Press.

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Fak322806: Medicine and Climate Change I

Valid from: 01.04.2022

Teaching language English	Duration one semester	Contact hours (in hours) 60	Self-study hours (in hours) 90
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Quentin, Wilm; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written exam	1	5

Prerequisites

None

Learning objectives

The students acquire fundamental knowledge about organ systems, their anatomical localizations, their physiological functions and climate change associated diseases and health-related consequences. In this context, students will develop a deeper understanding of the multiple interrelationships between climate changes and human health.

Learning contents

- Determinants of health
- Organ systems: anatomy and physiology
- Climate change-associated diseases

Type and scope of the courses

Lecture (2 hours per week)
Seminar (2 hours per week)

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Fak726835: Sustainable Food Production

Valid from: 01.04.2024

Teaching language English	Duration one semester	Contact hours (in hours) 60	Self-study hours (in hours) 90
Credit points (CP) 5	Frequency summer semester	Person responsible for the module Vlot-Schuster, Anna Cornelia; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written exam	3	3
Presentation	2	2

Prerequisites

None

Learning objectives

A sufficient supply of nutritious food is an essential prerequisite of health, while the continuous rise of the world population demands (more) sustainable ways of production. At the global scale, climate change poses a major threat to food security and planetary health, which includes human and environmental health aspects. An understanding of Global Food, Nutrition and Health therefore requires knowledge about (i) the ingredients of food and their health impacts, (ii) food systems and the production of plant and animal food products, and (iii) the influence of climate change on the physiology of food crops. Further, knowledge of modern breeding techniques and their influence on environmental and human health will be discussed as a prerequisite of change towards more sustainable production strategies.

Based on this interdisciplinary approach, the students will realize how food, nutrition, climate change, and health are interwoven at a global scale. They can develop strategies aiming at changes in food systems towards securing human and planetary health. They will be aware of the existing challenges and the need to advance technologies and their beneficial application to secure food for current and future generations.

Learning contents

Lectures will summarize the components of food and their connection to human health, give an overview of modern food production strategies of plant and animal food products, and will focus on the influence of climate change on plant physiology and how these play into plant breeding schemes for sustainable food production. In the Seminar, students will discuss current issues in the realm of sustainable food production, connecting sustainability to human health. For this purpose, students will prepare and share presentations on topics, including Food Production, Sustainability, Planetary Health Diet, One Health Concept, Modern Breeding Targets, and Smart Farming.

Type and scope of the courses

Lecture (2 hours per week)

Seminar (2 hours per week)

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Fak726836: Nutrition and Public Health

Valid from: 01.10.2026

Teaching language English	Duration one semester	Contact hours (in hours) 60	Self-study hours (in hours) 90
Credit points (CP) 5	Frequency winter semester	Person responsible for the module von Philipsborn, Peter; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written exam or semester tasks	1	5

Examination: Policy Brief (essay-style written assessment).

Entry requirement for examination: In preparation for the lectures, students will be expected to complete small tasks in elearning. A minimum of 70% of tasks must be submitted to be able to enter the examination.

Prerequisites

None

Learning objectives

This course provides an overview of the intersection between nutrition, health, and sustainability from a public health perspective. Nutrition is one of the most significant modifiable factors affecting human health. Despite progress in combating hunger and undernutrition, a substantial portion of the global population remains undernourished, malnourished, or overweight. In 2020, over 800 million people were chronically undernourished, while nearly one-third of the global population had overweight. Food production, including agriculture, is a major driver of global change processes such as climate change, biodiversity loss, land degradation, and deforestation—challenges that also affect global food security. Changing societal expectations and new scientific insights into the sentience of animals raise ethical questions about animal welfare. This course introduces key concepts, methods, relationships, and facts to help students understand and address these challenges.

By the end of the course, you will be able to:...

1. ... Explain the basics of human nutrition and its relevance to health
2. ... Assess the importance of nutrients, food groups, and dietary patterns for health
3. ... Evaluate the impact of undernutrition, malnutrition, and overnutrition on health
4. ... Describe key elements of current evidence-based dietary recommendations
5. ... Explain the drivers and consequences of the global nutrition transition
6. ... Describe and contextualize the relationship between nutrition and ecological sustainability
7. ... Understand the relevance of food environments and food systems
8. ... Assess the potential and limitations of policy measures for promoting healthy and sustainable diets
9. ... Understand basic research methods in Public Health Nutrition
10. ... Provide an overview of current topics and developments in national and international nutrition policy and research.
11. ... apply the life-course approach to maternal and child nutrition
12. ... describe global and national targets and trends in maternal and child nutrition.
13. ... explain key indicators in the field of maternal and child nutrition, extract them from relevant sources and summarize them.
14. ... identify and critically assess policy and programmatic approaches aimed at improving maternal and child nutrition.

Learning contents

Course topics:

1. The global food system, health, and sustainability: An overview
2. Basics of PHN I: Characterizing diets
3. Basics of PHN II: Definitions of healthy diets – features and evidence
4. Basics of PHN III: Definitions of healthy diets – food-based dietary guidelines
5. The global nutrition transition
6. Nutrition and sustainability
7. Policy measures to promote healthy and sustainable diets
8. Undernutrition and overnutrition in the Global South: The Double Burden of Malnutrition
9. Maternal and child nutrition
10. Insights into research: Current topics in Public Health Nutrition

Type and scope of the courses

Lecture and seminar (4 hours per week)

Literature:

The literature listed below can be used to prepare for and follow up on the course. The full texts of all sources mentioned can be downloaded via the e-learning platform.

Foundational texts:

- Tilman D, Clark M: Global diets link environmental sustainability and human health. *Nature* 2014; 515: 518-22.
- Mozaffarian D: Dietary and Policy Priorities for Cardiovascular Disease, Diabetes, and Obesity. *Circulation* 2016; 133: 187-225.
- FAO and WHO 2019: Sustainable healthy diets: Guiding principles. Online: www.fao.org/3/ca6640en/ca6640en.pdf [last accessed February 1, 2022]
- von Philipsborn P, Geffert K, Klinger C, Hebestreit A, Stratil J, Rehfuess EA: Nutrition policies in Germany: a systematic assessment with the Food Environment Policy Index. *Public Health Nutrition* 2021: 1-10.

Online Sources:

- Ritchie H, Rosado P, Roser M: Environmental Impacts of Food Production. Online: <https://ourworldindata.org/environmental-impacts-of-food>
- Hasell J, Roser M: Famines. Online: <https://ourworldindata.org/famines>
- Ritchie H, Rosado P, Roser M: Hunger and Undernourishment. Online: <https://ourworldindata.org/hunger-and-undernourishment>

Further reading:

- Mozaffarian D, Rosenberg I, Uauy R: History of modern nutrition science—implications for current research, dietary guidelines, and food policy. *BMJ* 2018, 361:k2392.
- Popkin BM, Corvalan C, Grummer-Strawn LM: Dynamics of the double burden of malnutrition and the changing nutrition reality. *The Lancet* 2020; 395: 65-74.
- Branca F, Lartey A, Oenema S, Aguayo V, Stordalen GA, Richardson R, Arvelo M, Afshin A: Transforming the food system to fight non-communicable diseases. *BMJ* 2019, 364:l296.
- Rutter H, Savona N, Glonti K, Bibby J, Cummins S, Finegood DT, Greaves F, Harper L, Hawe P, Moore L, et al: The need for a complex systems model of evidence for public health. *The Lancet* 2017, 390:2602-2604.
- Gluckman PD, Hanson M, Zimmet P, Forrester T: Losing the War Against Obesity: The Need for a Developmental Perspective. *Science Translational Medicine* 2011, 3:93cm19-93cm19.
- Godfray HCJ, Aveyard P, Garnett T, Hall JW, Key TJ, Lorimer J, Pierrehumbert RT, Scarborough P, Springmann M, Jebb SA: Meat consumption, health, and the environment. *Science* 2018, 361:eaam5324.
- Willett W, Rockström J, Loken B, et al.: Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems. *The Lancet* 2019; 393: 447-92.

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Fak721264: Global Political Economy of Food

Valid from: 01.10.2026

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 120
Credit points (CP) 5	Frequency summer semester	Person responsible for the module Dorlach, Tim; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written exam or semester tasks	1	5

Prerequisites

none

Learning objectives

Students acquire a basic understanding of the political and economic processes that shape the world food system and global food security. Based on this knowledge, students are able to analyze current developments in global food governance and evaluate pertinent reform proposals, which prepares them for positions in food policy-making and consulting and related fields.

Learning contents

The course "Global Political Economy of Food" provides students with a broad overview of the institutions that shape the world food system. It adopts a global political economy perspective to analyze the development of global food governance. We study intergovernmental institutions like the World Food Programme and the World Trade Organization as well as nongovernmental actors like the Rockefeller Foundation and La Vía Campesina. We explore the roles and limitations of these and other institutions through case studies of concrete global food governance issues, such as agricultural subsidies, international food aid and genetically modified crops.

Type and scope of the courses

Lecture (2 hours per week)

Literature:

Literature recommendations:

Paarlberg, R. (2023). Food Politics: What Everyone Needs to Know (3rd ed.). Oxford University Press. (ebook available via the library)

Clapp, J. (2020). Food (3rd ed.). Polity. (various physical copies available in the library)

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Fak721268: Research Strategies and Methods

Valid from: 01.04.2026

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 120
Credit points (CP) 5	Frequency summer semester	Person responsible for the module Bartelmeß, Tina; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written exam or essay	1	5

Prerequisites

Literature recommendations for preparation:
Flick, U. (2022). An Introduction to Qualitative Research. Sage.

Learning objectives

The students acquire detailed and differentiated knowledge about the research process in the social sciences with a specific focus on qualitative research methods. Based on this knowledge, they can choose the appropriate data collection method for various research questions. Furthermore, they can develop designs for qualitative studies on food, nutrition, and health by defining suitable approaches for data collection and conducting their research. Finally, students acquire a basic understanding of qualitative data analysis. Based on this knowledge, they can perform basic data analysis tasks.

Learning contents

- Research paradigms and designs in social sciences
- Qualitative research methods (interviews, focus groups, participant observation, document analysis)
- Analysing and reporting qualitative data

Type and scope of the courses

seminar (2 SWS)

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Fak723347: Food, Health and Climate Communication

Valid from: 01.04.2026

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 120
Credit points (CP) 5	Frequency summer semester	Person responsible for the module Bartelmeß, Tina; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Semester tasks	1	5

Prerequisites

basic knowledge on the linkages of food, nutrition, health, and climate change

Learning objectives

Climate change affects our food system and our food system has a fundamental impact on the climate. Raising awareness of these connections and promoting transformations is currently a significant challenge for food studies. In this module, students acquire detailed and differentiated knowledge of theories, strategies, and methods of climate change communication. Furthermore, they know successful strategies of public engagement for food and health-related challenges of climate change and are able to develop their own creative communication approaches.

Learning contents

- Climate change communication research: theories, strategies, approaches
- factors that influence public understanding of climate change
- food, nutrition, and health in the context of climate change
- innovative climate change communication approaches and strategies

Type and scope of the courses

Seminar (2 SWS)

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Fak726837: European and International Food and Health Law

Valid from: 01.04.2026

Teaching language English	Duration one semester	Contact hours (in hours) 45	Self-study hours (in hours) 105
Credit points (CP) 5	Frequency summer semester	Person responsible for the module Grosche, Nils; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written exam or semester tasks	1	5

Prerequisites

None

Learning objectives

Students acquire basic knowledge about the legal principles and framework underlying health protection and food safety in European Union and International Law. Based on this knowledge, they are able to analyze and evaluate the impact of legal principles underlying health protection and food safety in the European Union in the context of global changes.

Learning contents

This course focuses on the practical application of European and international food and health law by examining specific case studies. Through in-depth analysis of real-world legal disputes, regulatory challenges, and compliance issues, students will explore key topics such as food safety, labeling, consumer protection, and international trade regulations. The seminar encourages critical discussion on the interaction between European Union law, international treaties, and national regulations.

Type and scope of the courses

Seminar (3 hours per week)

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Fak720426: Introduction to Law and Food Law

Valid from: 01.04.2020

Teaching language English	Duration one semester	Contact hours (in hours) 60	Self-study hours (in hours) 90
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Purnhagen, Kai; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written exam	1	5

Prerequisites

None

Learning objectives

At the end of the course students are expected to

- Describe legal families, understanding their differences and analyze their interactions through examples
- Distinguish between different branches of a legal systems and analyze their interactions through examples
- Distinguish between national, international and supranational legal systems and analyze their interactions,
- Distinguish between different sources of international law
- Describe the main features of the TBT and the SPS agreement
- Describe the features of the peaceful settlement of disputes under the WTO
- Know the main aspects of International Human Rights Law
- Describe the role and the characteristics of private standards
- Describe the roles and functions of EU institutions, as well as the basis of their historical development
- Be able to assess whether a competence is within the sphere of the EU or of the Member States
- Be able to describe the ordinary legislative procedure in the EU
- Understand the 'four fundamental freedoms' and the functioning of the internal market
- Describe the "Brussel effect"
- Describe the principles at the base of EU Food Law and know its main provisions
- Describe the main provisions of selected pieces of EU food legislation (e.g. labelling law, novel food regulation, GMO directive, hygiene package)
- Identify the main features of the CAP
- Develop legal thinking skills
- Be able to recall legal information (laws, interpretations, cases) from the major EU law databases,
- Bring theory and practice together, applying the legal perspective acquired in the lectures to real-life examples

Learning contents

The purpose of the course is to provide students with a well-rounded introduction to law, with a specific focus on EU Law, International Law, and EU food law. The course is divided into three thematic blocks, starting with a general introduction to law and legal thinking, followed by an introduction into International Law and institutions and by an overview on the European Union law and Food Law specifically.

Type and scope of the courses

Lecture (2 hours per week)

Tutorial (2 hours per week)

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Fak721267: International Nutrition Politics

Valid from: 01.10.2026

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 120
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Dorlach, Tim; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Semester tasks	1	5

Prerequisites

None

Learning objectives

Students acquire a basic understanding of international nutrition politics, in the Global North as well as in the Global South. This knowledge enables them to analyze current developments in nutrition politics, to identify reform needs, and to evaluate relevant reform proposals.

Learning contents

The seminar "International Nutrition Politics" covers a broad range of topics related to the politics of nutrition. Adopting an internationally comparative perspective, we will explore the design of effective nutrition policies and the political conditions for their introduction. Empirical examples will include policies related to school feeding, micronutrient supplementation, soda taxation and nutrition labeling. Through regular writing assignments and interactive discussions, students will acquire a deep understanding of the political nature of nutrition policy.

Type and scope of the courses

Seminar (2 hours per week)

Literature:

Sidaner, E., Balaban, D., & Burlandy, L. (2013). The Brazilian school feeding programme: An example of an integrated programme in support of food and nutrition security. *Public Health Nutrition*, 16(6), 989-994.

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Fak726838: Food Supply and Quality Management

Valid from: 01.04.2026

Teaching language English	Duration one semester	Contact hours (in hours) 45	Self-study hours (in hours) 105	
Credit points (CP) 5	Frequency summer semester	Person responsible for the module Fikar, Christian; Prof. Dr.		
Assessments				
Title:			Weighting:	CP:
Written exam			3	3
Semester tasks			2	2
Prerequisites None				
Learning objectives After completion of the course, students will understand key concepts of supply chain management and are able to highlight the importance of quality management within the food industry. They will be able to investigate various supply chain structures and develop concepts on how to improve process quality, transparency and coordination within such systems.				
Learning contents The course tackles: - Introduction to food supply chains - Supply chain drivers and metrics - Risk management - Food quality management concepts - Supply chain coordination - Business process modelling				
Type and scope of the courses Lecture (2 hours per week) Seminar (1 hour per week)				

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Fak726335: Advanced Plant Breeding and Sustainable Food Production

Valid from: 01.04.2027

Teaching language English	Duration one semester	Contact hours (in hours) 60	Self-study hours (in hours) 90
Credit points (CP) 5	Frequency summer semester	Person responsible for the module Vlot-Schuster, Anna Cornelia; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written or oral exam	3	3
Essay or presentation	2	2

Written exam on lecture content (60%)

Presentation (40%)

Prerequisites

Basic knowledge of genetics.

Prior completion of the following modules is recommended:

Analytics in Life Sciences – from molecules to cells (for FSS students), Crop Plant and Animal Biology (for FQS students) or Sustainable Food Production (for GFNH students).

Learning objectives

The students acquire detailed and differentiated knowledge about plant breeding and its relevance for food production. They gain in-depth knowledge about hybridization, including F1-hybrid technology, and marker-assisted breeding. Furthermore, students acquire knowledge and practical experience using modern genomic techniques, including CRISPR-Cas genome editing. Finally, students become acquainted with sustainable crop production strategies as alternatives to conventional production methods.

After successful completion of the module, students become enabled to join plant breeding efforts, including research and development to support the production of food in a sustainable manner.

Learning contents

Lecture content will apply the principles of Mendelian genetics to analyse conventional and modern plant breeding methods, including hybridization and marker-assisted breeding. These will be reflected against advanced genomics and recombinant DNA technologies. Importantly, modern genomic techniques, including CRISPR-Cas genome editing and its derived applications (e.g. prime editing) will be discussed. The final third of the lecture connects plant breeding to climate change, focusing on the application of biologicals and sustainable crop protection strategies.

In the seminar, students will apply and deepen their knowledge acquired during the lectures in theoretical exercises, focusing on independent assortment of traits, marker-assisted breeding, genomics, and CRISPR-Cas experimental design. Students will further gain hands-on experience with a practical CRISPR-Cas exercise in the lab. Finally, students will present their experimental results and reflect on them in the context of dedicated articles from relevant plant breeding-related scientific literature, gaining insights into the state-of-the-art in plant breeding research.

Type and scope of the courses

Lecture (2 hours per week)

Seminar/ laboratory practical (2 hours per week)

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Fak220621: Biodiversity, Climate Change and Health

Valid from: 01.04.2020

Teaching language English	Duration one semester	Contact hours (in hours) 60	Self-study hours (in hours) 90
Credit points (CP) 5	Frequency summer semester	Person responsible for the module Thomas, Stephanie; Dr.	

Assessments

Title:	Weighting:	CP:
Written elaboration and contributions (ungraded)	2	2
Presentation (graded)	3	3

Prerequisites

None

Learning objectives

At the end of this course, the students will have acquired a good understanding of how drivers such as loss of biodiversity, land use change or climate change can impact on human and animal health.

Learning contents

Health implications of Global Change:

The lecture synthesizes information on the most important interlinkages between biodiversity, climate change and health. It covers the concepts of one health, and planetary health and includes an overview of related Sustainable Development Goals, CBD Aichi Targets, and the joint work program of CBD and WHO.

Current Research in Health implications of Global Change:

In the seminar we review and discuss current contributions which cover the biodiversity – climate change – health nexus especially for zoonotic infectious diseases, with a special focus on global change drivers such as biodiversity loss, land use change and climate change. This knowledge is used to articulate future research priorities.

Type and scope of the courses

V Health implications of Global Change (2 SWS, 2 CP) S Current Research in Health implications of Global Change (2SWS, 3CP)

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Fak285764: Changes in Agroecosystems

Valid from: 01.10.2026

Teaching language	Duration one semester	Contact hours (in hours) 60	Self-study hours (in hours) 90
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Diamantopoulos, Efstathios; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written examination Soil Structure and Soil Functions	1	2
Semester-long tasks in Global Change and Agroecosystems	0	3

Prerequisites

Basic knowledge in soil science is recommended.

Learning objectives

The module goal is to understand and evaluate how soil management and various (a)biotic drivers affect the structure of soils and herewith multiple soil functions at different temporal scales. The seminar aims to apply the acquired knowledge to the transfer and discussion of specific global challenges in agroecosystems.

Learning contents

Agroecosystem management alters soil structure and thus various soil functions. In addition, bioturbation and climatic conditions induce seasonal dynamics in the pore network and thus in the architecture of the soil. Quantifying these changes provides critical information about soil as a habitat and water as a key resource for plant production. In addition, soil structure plays a crucial role for water and matter fluxes in agroecosystems. In this module, we learn about soil structure as a dynamic soil state, methods to quantify structural indicators and how these structural changes modify soil functions. We will further discuss how management systems can be adapted in prospect of future scenarios.

The course provides a general overview of soil structure, how it is changing by various drivers (tillage, freezing/thawing, wetting/drying, bioturbation), as well as the feedback mechanisms for soil functions and implications for resource management in agroecosystems.

Type and scope of the courses

Lecture/Tutorial: Soil Structure and Soil Functions (2 SWS)

Seminar: Global Change and Agroecosystems (2 SWS)

Notes

Soil Physics, UBT

Agroecology, UBT

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Fak323553: Climate Change

Valid from: 01.04.2022

Teaching language English	Duration one semester	Contact hours (in hours) 60	Self-study hours (in hours) 90
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Quentin, Wilm; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Oral exam or report or presentation or term paper	1	5

Prerequisites

None

Learning objectives

This module is interdisciplinary. In the lecture, students acquire fundamental knowledge, wherefore global environmental changes can be described by the students. Multifaceted consequences will be reflected in the seminar.

Based on this knowledge, students are able to define transformation needs in different sectors and on all levels, whose implementation is necessary for a healthy life under consideration of the planetary boundaries.

Learning contents

Basic principles of the climate system; naturally-occurring climate, variability, climate change in the past; reconstruction of past climate; natural forcing-factors, circulation dynamics; human impact on the climate system; global warming; Greenhouse effect; land use change; aerosols; ozone depletion; global circulation models; forecasts; scenarios; fundamentals of energy and mass balance; modelling; sensitive parameters of global change

Type and scope of the courses

Lecture (2 hours per week)

Seminar (2 hour per week)

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Fak729192: Coding & Data Science with Python for All

Valid from: 01.04.2026

Teaching language English	Duration one semester	Contact hours (in hours) 45	Self-study hours (in hours) 105
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Faisal, Aldo; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Semester-long tasks	1	5

Prerequisites

This is an introductory course. There is no prerequisite knowledge. However, participants should be comfortable with mathematics and engineering.

Learning objectives

After the module students will have gained:

- LO1: a good understanding of, and ability to use Python Programming Language effectively;
- LO2: the ability to design and access procedural and object-orientated programming structure in Python
- LO3: a fundamental understanding of Python standards, Data Science and Deep Learning libraries and how to appropriately select and apply them to solve a given programming problem;
- LO4: the ability to create, combine and complete relevant data science pre-processing steps;
- LO5: the ability to use standard Machine Learning algorithms to interact with Big Data.

Learning contents

Computer Programming has become one of the core-desirable skills within both academic and industrial settings. The versatility of modern computer languages, the abundance of data and a high-powered computational device led to swift progress in many fields of research and industry, especially in healthcare where rapid digitalisation allows research to be accomplished using computer simulation and machine learning.

The module aims to teach students the fundamentals of Computer programming and Data Science through one of the most popular Programming languages to its readability and Flexibility: Python. In this module the students will learn:

- Fundamentals of Programming in Python
- Core design philosophies and their differences (Procedural and Object Orientated)
- Common design patterns in Python
- Introduction to standard libraries
- Introduction to popular Data Science, Machine Learning and Deep Learning Libraries

Type and scope of the courses

Lecture (2 hours per week)
Exercise (1 hours per week)

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Fak726841: Comparative Health Systems and Policies

Valid from: 01.04.2024

Teaching language English	Duration one semester	Contact hours (in hours) 60	Self-study hours (in hours) 90
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Quentin, Wilm; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written exam or semester tasks	1	5

Learning objectives

The aim of the course is to enable students to systematically understand, analyse and compare health systems in different countries of the world. The course will introduce key frameworks, concepts, and ideas about health systems and about measuring their performance. In addition, students will be expected to use and apply the theoretical concepts to analyse the functioning and the performance of a health system.

Learning contents

The course provides a structured overview of the main building blocks and goals of health systems, following the health systems framework of the World Health Organization (WHO). Following a general introduction, the first part of the course covers (1) health systems financing (briefly), (2) workforce, (3) service delivery, (4) medical Products, vaccines and technologies, and (5) leadership/ governance. The second part focuses on the goals of health systems, including intermediate goals (access/ coverage, quality/safety) and final goals (improved health, responsiveness, social and financial risk-protection, and improved efficiency). The course consists of lectures and exercises with group work, where students use the introduced concepts to analyse health systems in various countries.

Type and scope of the courses

Lecture (2 hours per week)

Seminar (2 hours per week)

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Fak726348: Current Issues in Food and Health Policy

Valid from: 01.10.2026

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 120
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Dorlach, Tim; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written exam or semester tasks	1	5

Current course in this module: "School Food Systems" (Prof. Dr. Tim Dorlach)

Prerequisites

Previous completion of the course "Global Political Economy of Food" is recommended.

Learning objectives

The course "School Food Systems" enables students to acquire a detailed understanding of the science, policies and politics of school food systems around the world. Based on this knowledge, students are able to analyze current developments in school food policy and formulate policy recommendations for strengthening school food systems, which prepares them for positions in school food policy-making and consulting and related fields.

Learning contents

The course "School Food Systems" examines school food systems from an international comparative perspective. School meal programs, which are at the center of most school food systems, can have significant multisectoral benefits, for instance by improving children's food security, incentivizing school enrollment and attendance, and supporting local agricultural development. Students will comprehensively explore the school food systems of Finland, Japan, Brazil, and Ghana, with a particular focus on issues such as universal provision, food education, and local procurement. Building on the analysis of these global models, students will conduct detailed case study research on other countries' school meal programs and wider school food systems.

Type and scope of the courses

Seminar (2 hours per week; blocked during first half of the semester)

Literature:

Literature recommendation:

Morgan, K., & Sonnino, R. (2013). The school food revolution: public food and the challenge of sustainable development. Routledge.

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Fak726839: Data Analysis and Statistics

Valid from: 01.10.2025

Teaching language English	Duration one semester	Contact hours (in hours) 60	Self-study hours (in hours) 90
Credit points (CP) 5	Frequency winter semester	Person responsible for the module von Philipsborn, Peter; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written exam	1	5

Prerequisites

None

Learning objectives

The students acquire basic knowledge about data types, descriptive and inferential statistics. Furthermore, they will learn about types of data visualisation and their advantages and disadvantages. They can use software to analyse and visualise data. Based on this knowledge they are able to choose the appropriate types of analysis and visualisation for a range of problems.

Learning contents

- Types of data
- Descriptive statistics
- Inferential statistics
- Data visualisation

Type and scope of the courses

Lecture (2 hours per week)
Seminar (2 hours per week)

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Fak729191: Digital Health for All

Valid from: 01.04.2025

Teaching language English	Duration one semester	Contact hours (in hours) 60	Self-study hours (in hours) 90
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Faisal, Aldo; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Semester-long tasks	1	5

Prerequisites

Students from all faculties with an interest in (digital) health

Learning objectives

Upon completion of the course, students should:

- Understand the fundamentals of the application of data-driven methods in medicine and health
- Gain a qualitative insight into the principles of artificial intelligence and how they serve as the cornerstone of digital health
- Gain a more detailed understanding of some concrete application examples in the field of digital health
- Be able to read and interpret scientific literature in this rapidly moving field.

Learning contents

This course provides students from any background with a fundamental understanding of digital healthcare, AI for medicine, and the literature in this field.

Topics covered include:

- Data Science & Data Engineering
- Wearables (Personal Digital Health)
- Telemedicine, eHealth, mHealth
- Electronic Health Record, Health Data and their use
- Integrated Care (Digital Public Health)
- Healthcare systems and their differences
- Design, Implementation, Evaluation of Digital Health, and Ethical Issues

Type and scope of the courses

Lecture (2 hours per week)

Exercise (2 hours per week)

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Fak323127: Environment and Economics

Valid from: 01.04.2024

Teaching language English	Duration one semester	Contact hours (in hours) 45	Self-study hours (in hours) 105
Credit points (CP) 5	Frequency summer semester	Person responsible for the module Stadelmann, David; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written or oral exam or report or term paper	1	5

Prerequisites

None

Learning objectives

In this module, students will first be acquainted with basic conceptual tools in economics. They will learn how economic analysis can help to understand and solve problems related to the environment, climate, and public health. Course participants will understand the importance of incentives, markets, market failure, and the interaction between markets and government. The module focuses on an economical way of thinking about real world problems. Special attention will be given to the health care sector. It is being taught, how the economic efficiency in health care can be measured and how economic evaluations can be performed.

Learning contents

- Analyze the importance of economic incentives
- Understand the relevance of market failure and solutions to market failure
- Evaluate link between economic performance and the environment
- Analyze economic consequences of climate change and costs/benefits of climate protection
- Perform economic evaluations related to health care sector
- Explore types of economic evaluations (cost-minimization analysis, cost-effectiveness analysis, cost-utility analysis)
- Programme budgeting and marginal analysis in health care sector

Type and scope of the courses

Lecture (3 hours per week)

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Fak726898: Food Trade Law

Valid from: 01.04.2024

Teaching language English	Duration one semester	Contact hours (in hours) 60	Self-study hours (in hours) 90
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Purnhagen, Kai; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Term paper	1	5

Prerequisites

Introduction to Law and Food Law

Learning objectives

At the end of the course students are expected to

- Understand relevant international instruments pertaining to the international trade law area
- Apply the fundamental principles of the WTO framework
- Utilize the rules of major trade agreements
- Understand the complexities between international trade law, environment, agriculture, public health and intellectual property rights
- Understand finance related aspects that influence foreign trade and investment

Learning contents

This course offers an overview of Global Economic Law, with an emphasis on the food aspects. It will introduce students to the treaty architecture of the World Trade Organization (WTO) and certain other regional trade arrangements. Topics will include the historical, legal and regulatory rationale as well as political economy of the international trade framework, the relationship between international and domestic law and regulation in particular in the light of state arbitration and compliance issues, the standard-setting and the WTO dispute resolution system. Particular attention will also be directed to the Agreement on Technical Barriers to Trade and the Agreement on the Application of Sanitary and Phytosanitary Measures.

Type and scope of the courses

Lecture (2 hours per week)

Tutorial (2 hours per week)

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Fak521281: Foundations of Sustainability

Valid from: 01.04.2024

Teaching language German	Duration one semester	Contact hours (in hours) 45	Self-study hours (in hours) 105
Credit points (CP) 5	Frequency every semester	Person responsible for the module Steinbauer, Manuel; Prof. Dr.	

Assessments		
Title:	Weighting:	CP:
Written exam or presentation or term paper	1	5

Prerequisites
None

Learning objectives
Die Studierenden erkennen die Relevanz der Nachhaltigkeit und können den Nachhaltigkeitsbegriff differenziert erläutern. Sie sind in der Lage, das Thema historisch einzuordnen und auf verschiedenen Ebenen (regional, national, international) zu reflektieren. Es besteht ein umfassendes Verständnis der Nachhaltigkeit aus der Perspektive verschiedener Fachrichtungen (Umweltnaturwissenschaft und Ökologie, Wirtschaft- und Sozialwissenschaft, Unternehmensethik, naturwissenschaftliche und technische Lösungsansätze). Auf der Basis von Beispielen können die Studierenden Nachhaltigkeitsstrategien aus verschiedenen Perspektiven kritisch beurteilen. Sie erkennen ferner Grenzen der Umsetzung und können neue Strategien eigenständig entwickeln.

Learning contents
Vorlesung:
- Nachhaltigkeit: Begriffsdefinition und deren Relevanz (Vom Bericht an den Club of Rome bis zur Agenda 2030 – Konjunkturen und Meilensteine des Nachhaltigkeitsdiskurses; Starke und schwache Nachhaltigkeit – Bedeutung und Wirkung unterschiedlicher Nachhaltigkeitskonzepte; Klimakrise und Artensterben – Hinweise zu aktuellen Handlungsbedarfen)
- Konzepte der Nachhaltigkeit und Ansätze einer "Großen Transformation" (Die Große Transformation und ein neuer Welt-Gesellschaftsvertrag – der Ansatz des Wissenschaftlichen Beirats Globale Umweltfragen; Wege zur Nachhaltigkeit – das Konzept des Transition Managements und Kritik; Die Transformation vor Ort gestalten – aktuelle Ansätze einer nachhaltigen Praxis)
- Ökologie und Umweltnaturwissenschaften (Raumzeitliche Einordnung des menschlichen Einflusses in ökologischen Systemen; Tragfähigkeit und Belastbarkeit von Ökosystemen, auch als Existenzgrundlage des Menschen; Menschlich verursachter Klimawandel, Extremereignisse und Naturkatastrophen; Natürliche Rohstoffe und Degradationsprozesse)
- Wirtschaft- und Sozialwissenschaft (Nachhaltigkeit und Generationengerechtigkeit aus ökonomischer Sicht; Externalitäten und Internalisierungsprobleme; Instrumente, Umsetzung, Anreize, polit-ökonomische Aspekte)
- Ethik (Güterabwägung zwischen Hinsichten der Nachhaltigkeit; Soziale Nachhaltigkeit und Gerechtigkeit; Management von Nachhaltigkeit: Werte- und Strategieentwicklung, Best practices; Umsetzung von Nachhaltigkeit: Handlungsfelder, Rankings und Ratings, Kennzahlen, Berichterstattung)
- Naturwissenschaftliche und technische Lösungsansätze (Erneuerbare Energien aus naturwissenschaftlicher und technischer Sicht, Energiewende und regenerative Energieträger; Nachhaltige Chemie, Substitution und Recycling kritischer Elemente)

Seminar:
Die Studierenden und Professorinnen und Professoren reflektieren gemeinsam zukunftsorientierte Lösungsansätze zur Bewältigung der dringendsten Herausforderungen. Die Diskussion wird durch aktuelle Beispiele aus der Nachhaltigkeitsforschung verschiedener Disziplinen angeregt.

Type and scope of the courses
Lecture (2 hours per week)
Seminar (1 hour per week)

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Fak726843: Global Careers in Food, Nutrition and Health

Valid from: 01.10.2025

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 30
Credit points (CP) 2	Frequency winter semester	Person responsible for the module	

Assessments

Title:	Weighting:	CP:
Contribution	1	2

Prerequisites

None

Learning objectives

Students will be exposed to different career pathways in Food, Nutrition and Health. They will gain knowledge on key competencies for each of the options presented in the course, strategies for success and practical aspects to be considered for each option. Based on this knowledge, students will be prompted to plan and align their studies according to their internship/ career options of interest.

Learning contents

- Key competencies and skills required for different career options in global food, nutrition and health
- Finding internship and career opportunities in global food, nutrition and health.
- Preparing effective application documents (motivation letter & CV).

Type and scope of the courses

Seminar (2 hours per week)

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Fak223346: Global Urban Health

Valid from: 01.04.2022

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 120
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Rothfuß, Eberhard; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written or oral exam or report or term paper	1	5

Prerequisites

None

Learning objectives

In the seminar, students acquire knowledge on the development of urban areas in a global perspective. They will learn how health can be/is influenced by demographic structure, labour and which (urban and regional) concepts and theories exist to reflect on societal health effects.

Learning contents

- Development of urban areas and associated health conditions in the Global North and South
- Interactions of society, demographic structure, labour and health
- Theories and concepts on cities, urbanity, sustainability and life quality

Type and scope of the courses

Seminar (2 hours per week)

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Fak311385: Health Policy

Valid from: 01.10.2015

Teaching language German	Duration one semester	Contact hours (in hours)	Self-study hours (in hours)
Credit points (CP) 6	Frequency summer semester	Person responsible for the module Quentin, Wilm; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Gesundheitspolitik	1	6

Benoteter Leistungsnachweis auf Basis einer einstündigen Klausur

Prerequisites

Grundlagen des Aufbaus von Gesundheitssystemen. Umfassende Grundkenntnisse zur Finanzierung und Leistungserbringung (öffentlicher und privater Sektor).

Learning objectives

Ziel dieser Veranstaltung ist es, die Grundlagen der Gesundheitspolitik im Hinblick auf Landes-, Bundes- und Europapolitik systematisch aufzuarbeiten. Priorität haben in der Veranstaltung deshalb Struktur, Prozesse und Akteure/Stakeholder, die für die Gesundheitspolitik in Deutschland relevant sind. An aktuellen Fallbeispielen, wie der politischen Diskussion der Zukunft der privaten Krankenvollversicherung werden entsprechende Inhalte in den Übungen diskutiert und vertieft.

Learning contents

- Grundbegriff zur Politik und Gesundheitspolitik
- Vorstellung der Stakeholder/Akteure, die in die Gesundheitspolitik involviert sind
- Gesundheitssystemgestaltung, Interventionstypen und -ebenen
- Gesetzgebungsverfahren Land, Bund, Europa
- Bundespolitik, Besuch der Parteifractionen (Exkursion Berlin)
- Landespolitik am Beispiel des Freistaates Bayern, Besuch der Parteifractionen (Exkursion München)
- Bedeutung der Europapolitik
- Interessenvertretungen und Lobbyismus
- Wissenschaftliche Zugänge zur Gesundheitspolitik

Type and scope of the courses

Vorlesung und Übung

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Fak310611: Healthcare Marketing

Valid from: 01.04.2015

Teaching language German	Duration one semester	Contact hours (in hours) 45	Self-study hours (in hours) 105
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Nagel, Eckhard; Prof. Dr. Dr.	
Assessments			
Title: Written exam		Weighting: 1	CP: 5
Prerequisites Es gibt keine formale Teilnahmevoraussetzung			
Learning objectives Ziel dieser Veranstaltung ist es, den Studierenden ein Grundverständnis des Marketingkonzepts bei der Anwendung im Gesundheitswesen zu vermitteln. Hierfür wird zunächst ein Überblick über die Grundlagen des Marketings geschaffen. In diesem Zusammenhang wird vor allem auf die Besonderheiten des Dienstleistungsmarketings eingegangen. Darauf aufbauend ist das zentrale Ziel der Transfer des Marketingkonzepts auf die unterschiedlichen Gesundheitseinrichtungen unter Berücksichtigung der jeweiligen Spezifika.			
Learning contents - Grundkonzepte des Marketings und des Marketingmanagements mit spezifischem Blick auf die Gesundheitswirtschaft - Besonderheiten des Dienstleistungsmanagements mit spezifischem Blick auf die Gesundheitswirtschaft - Marketingrelevante Rahmenbedingungen des Gesundheitswesens - Möglichkeiten der Gesundheitskommunikation - Zielgruppensegmentierung - Übertragung des Marketingkonzepts auf unterschiedliche Gesundheitseinrichtungen			
Type and scope of the courses Vorlesung (2 SWS) Übung (1 SWS)			

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Fak324906: Impact Entrepreneurship – Developing Social and Ecological Innovations

Valid from: 01.04.2024

Teaching language English	Duration one semester	Contact hours (in hours) 45	Self-study hours (in hours) 135
Credit points (CP) 6	Frequency every semester	Person responsible for the module Jakob, Eva; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Semester tasks	1	6

The module examination consists of a presentation and the submission of a written solution concept.

Prerequisites

None

Learning objectives

The aim is to connect interdisciplinary master's students from all faculties and to enable them to jointly develop solutions for social and/or ecological problems using innovative methods. Examples of these are acute and global challenges such as biodiversity loss, climate change, environmentally friendly production/additive manufacturing, nutrition and smart cities.

By taking the course, sustainable, impact-oriented action can be experienced and solutions to global problems are developed. Through this course, you will not only learn a range of methods to address global challenges, but also develop a deeper understanding of these challenges, which is especially enhanced through interdisciplinary collaboration.

Learning contents

You will learn advanced knowledge in the field of impact entrepreneurship (i.e., solving social and/or ecological problems through innovative methods). Furthermore, you will learn how to develop your own sustainable solutions for social and/or ecological challenges. In addition to obtaining a foundation of scientifically based content on impact entrepreneurship, you will learn the necessary tools and their application in practice-oriented workshops and will also be personally advised in a team by the interdisciplinary lecturers.

Schedule:

1. Kick-off event (topic/problem presentation)
2. Interactive workshops (development of ideas/solutions, business models)
3. Independent further development of the project
4. Personal coaching (individual team advice)
5. Final presentations
6. Submission of the concept

Type and scope of the courses

Lectures, interactive workshops and personal coaching (3 hours per week)

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Fak726840: International Human Rights Law and Health

Valid from: 01.04.2024

Teaching language English	Duration one semester	Contact hours (in hours)	Self-study hours (in hours)
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Grosche, Nils; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Semester tasks	1	5

Prerequisites

Prior completion of the courses "Introduction to Law and Food Law" and "International and European Food and Health Law" is useful but not a requirement.

Recommendes literature for preparation:

- Virginia A. Leary, "The Right to Health in International Human Rights Law" available at <https://www.jstor.org/stable/4065261>
- Michael Da Silva, "The International Right to Healthcare: A Legal and Moral Defence" available at <https://repository.law.umich.edu/mjil/vol39/iss3/3/>

Learning objectives

The overall objective of this course is to provide students with knowledge of the interrelationship between health and human rights, particularly the right to health under international human rights law. This course will provide an overview of the international human rights law system, such as treaties and general comments, governing the right to health as well as regional legal instruments with a focus on the European Union and African Union systems. It will evaluate the role of institutional actors, including the World Health Organization, UN Special Rapporteur on the Right to Health and public health professionals in promoting the right to health. It will also explore mechanisms for realizing the right to health, including international procedures, litigation and advocacy. Particular attention will be paid to emerging issues related to the right to health including climate change, migration and vulnerable groups.

Learning contents

By the end of the course, students should have solid knowledge of:

- Scope and content of the right to health.
- Interrelationship between the right to health and other human rights, such as the right to food.
- International human rights law and institutions regulating the right to health.
- State obligations and mechanisms for realizing the right to health.
- Protection of vulnerable groups in the context of health.
- Contemporary issues affecting the right to health.

Type and scope of the courses

Seminar (4 hours per week)

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Fak230000: Introduction to R – Basics and Data Handling

Valid from: 01.10.2026

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 30
Credit points (CP) 2	Frequency winter semester	Person responsible for the module Hülsmann, Lisa; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Semester-long tasks	0	2

Learning objectives

Students will learn to independently import, structure, analyse, visualize, and document environmental data using R. They will develop reproducible data workflows and apply modern data manipulation techniques.

Learning contents

The first part of the course introduces R syntax and workflows, objects and data structures, functions, data import and filtering, iteration using loops, data visualization with base R and ggplot2, and reproducible reporting. The second part builds on this foundation and covers more advanced data management steps, including filtering, aggregation, reshaping (wide/long), gap filling, and lagged calculations, using the tidyverse package. These steps are practiced using an applied example of time series data.

Type and scope of the courses

Lecture/Tutorial: Introduction to R (2 SWS)

Notes

Micrometeorology, UBT
Ecosystem Analysis and Simulation, UBT

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Fak726842: Maternal and Child Nutrition Policy

Valid from: 01.10.2025

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 120
Credit points (CP) 5	Frequency irregularly	Person responsible for the module Dorlach, Tim; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Semester tasks	1	5

Learning objectives

Students will learn about a selection of policies and programmes on maternal and child nutrition at both global and national levels. They will be able to identify the causal factors to their successes and/or failures encompassing political, social and structural aspects.

Learning contents

- The International Code of Marketing Breast-milk Substitutes
- The Innocenti Declaration
- The Baby Friendly Hospital Initiative (BFHI)
- School feeding

Type and scope of the courses

Seminar (2 hours per week)

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Fak721273: Migration and Health

Valid from: 01.04.2025

Teaching language English	Duration one semester	Contact hours (in hours) 45	Self-study hours (in hours) 105
Credit points (CP) 5	Frequency summer semester	Person responsible for the module Quentin, Wilm; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Module exam	1	5

Essay and presentation

Prerequisites

None

Learning objectives

The aim of the module is to learn how health and health care can be influenced by migration. Students will gain basic knowledge about interactions between migration, legal regulations, and climate change as well as between migration movements and social conditions.

Learning contents

- Intro to Migration and Health: social determinants, human rights, how to ensure equity and overcome migration blindness.
- Migration and Access to Healthcare: Background and Legal Frameworks.
- Migrants' Access to Healthcare in High-Income Countries: The Case of Germany
- Migration perspective from Latin America
- Climate Justice
- Causes and dimensions of migration
- Migration and Integration center visit

Type and scope of the courses

Seminar (3 hours per week)

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Fak312080: Nutritional Medicine

Valid from: 01.10.2015

Teaching language German	Duration one semester	Contact hours (in hours) 45	Self-study hours (in hours) 105
Credit points (CP) 6	Frequency winter semester	Person responsible for the module Nagel, Eckhard; Prof. Dr. Dr.	

Assessments

Title:	Weighting:	CP:
Written exam	1	6

Prerequisites

Für dieses Modul wird der erfolgreiche Abschluss folgender Module vorausgesetzt: Humanbiologie und Molekular-und Zellbiologie bzw. der Nachweis gleichwertiger Kompetenzen

Learning objectives

Studierende haben Kenntnisse zur Physiologie des Gastrointestinaltrakts und zur Verstoffwechselung von Mikro-und Makronährstoffen. Sie kennen den Nährstoffbedarf gesunder Erwachsener sowie den Bedarf in speziellen Lebensphasen. Studierende verfügen über Wissen zu Krankheitsursachen und Krankheitsverlauf ernährungsabhängiger Erkrankungen und können deren Ernährungstherapie herleiten.

Learning contents

Es werden physiologische und soweit erforderlich biochemische Grundlagen, wie beispielsweise der Nährstoffbedarf gesunder Erwachsener sowie der Bedarf in speziellen Lebensphasen und die Nährstoffaufnahme und-verstoffwechselung im menschlichen Körper thematisiert.

Anhand der Physiologie des Gastrointestinaltrakt wird weiterhin die Pathophysiologie ernährungsabhängiger Erkrankungen (u.a. Adipositas, Diabetes mellitus, Herz-Kreislauf-erkrankungen, Osteoporose, Karies) dargestellt und Therapieoptionen vorgestellt.

Type and scope of the courses

Vorlesung (2 SWS)

Übung (1 SWS)

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Fak726152: Nutritional Physiology – from Cells to Organisms

Valid from: 01.10.2026

Teaching language English	Duration one semester	Contact hours (in hours) 75	Self-study hours (in hours) 105
Credit points (CP) 6	Frequency winter semester	Person responsible for the module Holzapfel, Christina; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Written exam	1	3
Semester tasks	1	3

Prerequisites

none

Learning objectives

After completing this module, the students will have developed a comprehensive understanding of the intricate relationship between nutrition and physiology. They will know the reference values of energy, macronutrients and micronutrients and will be able to explore how nutrients impact the functioning of organs and the entire organism, and how nutrition contribute to the maintenance of health and the development of diseases. In addition, life cycle nutrition is also a key component of this module.

Through interdisciplinary approaches, the students will gain a comprehensive understanding of nutritional biochemistry, metabolism, genetics, and physiology. Furthermore, they will gain insights into the molecular and physiological mechanisms underlying nutrient utilization and metabolic regulation over the course of life. Students will be able to critically evaluate current scientific findings and will apply knowledge to nutrition-related questions in research and practice. The module provides a solid foundation for a career in nutrition research, health sciences or related fields.

Learning contents

The lecture will cover:

- Gastrointestinal tract anatomy
- Tissue- and organ-level physiology
- Metabolism and reference values of energy and macronutrients (protein, carbohydrates, fat)
- Metabolism and reference values of micronutrients (vitamins, trace elements, minerals)
- Nutritional epigenetics and genetics
- Life cycle nutrition: metabolism and reference values e.g. in pregnancy, lactation period, childhood and adolescents, older adults)

The seminar will cover:

- Standard operating procedures for lab work (experimental design, analytical techniques, lab-based results)
- Standard operating procedures for human intervention studies (e.g. study design, data collection, clinical results, ethics)

The practical work will include:

- Microscopy analysis
- Protein digestion/quantification methods
- Titration experiment

The module provides an in-depth introduction to the physiological and molecular principles of human nutrition. The overview of gastrointestinal tract anatomy also includes digestion, absorption and transport of nutrients. Principles of cellular nutrition and tissue- and organ-level physiology complement the lecture. In addition, dietary recommendations, key metabolic pathways and physiological regulation of nutrition metabolism over the course of life are introduced. Aspects of nutritional genetics and epigenetics will show the interactions between nutrients and the genetic background of a person and how these factors influence nutrient requirements and metabolic responses. Throughout the module, current research findings are integrated. The practical work includes standard operating procedures for lab work and human intervention studies as well as fundamental laboratory methods in nutritional physiology. Microscopy-based analyses of biological samples, techniques for the digestions and quantification of proteins will be performed. There will be also a gain of knowledge in collection, analysis and interpretation of laboratory data.

Type and scope of the courses

Lecture (2 hours per week)

Student-based assignments + Practical work in the lab (3 hours per week)

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Fak320210: Principles of Entrepreneurship

Valid from: 01.04.2020

Teaching language English	Duration one semester	Contact hours (in hours) 60	Self-study hours (in hours) 120
Credit points (CP) 6	Frequency every semester	Person responsible for the module Baum, Matthias; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Semester tasks	1	6

Evaluation of the exercises (presentations and elaborations of case studies). The final grade will be composed of the partial performances of the four exercises.

Prerequisites

Knowledge of the Bachelor courses Business Model Creation and Foundations of Entrepreneurship is helpful.

Learning objectives

Students learn about entrepreneurial processes and entrepreneurial decision-making as well as how to create innovative ideas and how to move from such ideas to an entrepreneurial firm. Moreover, students become acquainted with the basic principles of analyzing business opportunities, designing feasible business models and what it takes to develop innovative startup companies. Students further develop competencies in performing industry and competitor analyses, designing customer oriented value propositions and get to know the basics of corporate entrepreneurship.

Learning contents

In the lecture, students learn the basic principles of entrepreneurship, get acquainted with entrepreneurial processes, learn how to conduct feasibility analyses, how to design economically sustainable business models and how corporate entrepreneurship helps established organizations to stay innovative. In the exercises part, students have to apply their knowledge and solve small case studies.

Type and scope of the courses

Lecture (2 hours per week)

Tutorial (2 hours per week)

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Fak721985: Science Communication

Valid from: 01.04.2026

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 60
Credit points (CP) 3	Frequency summer semester	Person responsible for the module Bartelmeß, Tina; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Essay	1	3

Learning objectives

Students acquire knowledge of the theoretical foundations of communicating science to the public. They deal with specialized scientific literature and prepare it for specific target groups. They develop and practice various strategies to reach target groups effectively. In addition, students acquire skills in writing texts and designing visual representations to effectively communicate scientific findings to the public.

Learning contents

- Perspectives of research on scholarly and science communication
- Target groups and their characterisation
- Models, theories and approaches of science communication
- Texts, visuals, types, media, and practices of science communication

Type and scope of the courses

Seminar (2 SWS)

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Fak323526: Tools in Social Research

Valid from: 01.04.2022

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 120
Credit points (CP) 5	Frequency winter semester	Person responsible for the module Nagel, Eckhard; Prof. Dr. Dr.	

Assessments

Title:	Weighting:	CP:
Oral exam or report or presentation or term paper or essay	1	5

Prerequisites

None

Learning objectives

The students acquire detailed and differentiated knowledge about the research process in the social sciences with a specific focus on qualitative and quantitative research methods. Based on this knowledge, student are able to choose the appropriate method of data collection for a range of research questions. Furthermore, they are able to develop designs for qualitative and quantitative studies. Finally, students acquire a basic understanding of qualitative and descriptive quantitative data analysis.

Learning contents

Free choice of different elective subjects:

- Qualitative research methods (interviews, focus groups, participant observation, document analysis)
- Quantitative research methods (questionnaires, experimental approaches)
- Descriptively analysing and reporting quantitative and qualitative data

Type and scope of the courses

Seminar (2 hour per week)

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Fak730137: Topics in Global Food, Nutrition and Health I

Valid from: 01.10.2026

Teaching language English	Duration one semester	Contact hours (in hours) 14	Self-study hours (in hours) 45
Credit points (CP) 2	Frequency irregularly	Person responsible for the module Dorlach, Tim; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Semester-long tasks or contribution or essay or written examination	1	2

Prerequisites
none

Learning objectives
Courses taken in this specialization and skills module provide students with in-depth knowledge of current topics in global food, nutrition and health.

Learning contents
Depending on the chosen course.

Type and scope of the courses
Depending on the chosen course.

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Fak730138: Topics in Global Food, Nutrition and Health II

Valid from: 01.10.2026

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 60	
Credit points (CP) 3	Frequency irregularly	Person responsible for the module Dorlach, Tim; Prof. Dr.		
Assessments				
Title:			Weighting:	CP:
Semester-long tasks or contribution or essay or written examination			1	3
Prerequisites none				
Learning objectives Courses taken in this specialization and skills module provide students with in-depth knowledge of current topics in global food, nutrition and health.				
Learning contents Depending on the chosen course.				
Type and scope of the courses Depending on the chosen course.				
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Fak730139: Topics in Global Food, Nutrition and Health III

Valid from: 01.10.2026

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 90
Credit points (CP) 4	Frequency irregularly	Person responsible for the module Dorlach, Tim; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Semester-long tasks or contribution or essay or written examination	1	4

Prerequisites
none

Learning objectives
Courses taken in this specialization and skills module provide students with in-depth knowledge of current topics in global food, nutrition and health.

Learning contents
Depending on the chosen course.

Type and scope of the courses
Depending on the chosen course.

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Fak730140: Topics in Global Food, Nutrition and Health IV

Valid from: 01.10.2026

Teaching language English	Duration one semester	Contact hours (in hours) 30	Self-study hours (in hours) 120	
Credit points (CP) 5	Frequency irregularly	Person responsible for the module Dorlach, Tim; Prof. Dr.		
Assessments				
Title:			Weighting:	CP:
Semester-long tasks or contribution or essay or written examination			1	5
Prerequisites none				
Learning objectives Courses taken in this specialization and skills module provide students with in-depth knowledge of current topics in global food, nutrition and health.				
Learning contents Depending on the chosen course.				
Type and scope of the courses Depending on the chosen course.				
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Fak721278: Mandatory Internship (Praktikum)

Valid from: 01.10.2026

Teaching language German/English	Duration one semester	Contact hours (in hours) 0	Self-study hours (in hours) 300
Credit points (CP) 10	Frequency every semester	Person responsible for the module Dorlach, Tim; Prof. Dr.	

Assessments

Title:	Weighting:	CP:
Internship report	0	10

The module examination is not graded but assessed on a pass/fail basis.

Prerequisites

None

For more information, see the current version of the "Guidelines for the mandatory internship in the study programme "Global Food, Nutrition and Health" (M.Sc.)", which can be found in the e-Learning course "Study Service Faculty VII".

Learning objectives

Students gain practical experience related to their study programme and their professional career goals. They can apply their theoretical knowledge in practical activities or research and also improve their soft skills.

Learning contents

full-time internship of (at least) 8 weeks or equivalent part-time internship in a professionally relevant area

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Fak721239: Master's Thesis – Global Food, Nutrition and Health

Valid from: 01.10.2020

Teaching language German/English	Duration	Contact hours (in hours)	Self-study hours (in hours) 900
Credit points (CP) 30	Frequency every semester	Person responsible for the module All professors	

Assessments

Title:	Weighting:	CP:
Master Thesis	1	30

Prerequisites

It is recommended to have completed the modules from semesters 1-3

Learning objectives

Students acquire the ability to work independently on a comprehensive research question within a given period using scientific methods.

In addition to the technical competence required for this, students have further developed their methodological competence and self-competence in the process.

Learning contents

Formulating an adequate research question (topic identification), developing a concept, literature research, data collection and evaluation or literature and source analysis, writing a scientific thesis.

Type and scope of the courses

Independent research under supervision

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