



UNIVERSITÄT  
BAYREUTH

INTERNATIONAL OFFICE

# General Overview of English-Taught Courses at the University of Bayreuth

Available during Summer Semester 2024

*An overview for Winter Semester 2024/25 is expected to be available as of 01.10.2024*



# Faculty of Life Sciences: Food, Nutrition and Health

Number	Course Title	Duration	Type	ECTS / Credits	Module Description
00109	Food Chemistry and Analysis	1	Tut	10	
70115	Food Sociology (Thesis Writers)	2	Coll		In this colloquium, students get the possibility to present and discuss their state of master's theses, e.g., their theoretical approaches, their chosen (empirical) methods, data, results as well as their depiction of results. In order to do so, students learn in advance how to give each other constructive feedback. In addition, depending on the students' needs, appropriate input by the docent is given to accompany in their projects. The topic of the inputs can be: - how to start research (research question, analysis of the state of research, planning the (empirical) phases of one's research), - how to carry out (data) collection, data processing and analysis (with software), - how to present data in a suitable and appropriate way, and/or - how to find and develop the own writing skills. After the colloquium, the students can receive a certificate for their regular participation.
70186	Global Political Economy of Food	2	Lec	6	This lecture introduces students to the global political economy of food and nutrition. We learn about the global actors and institutions that govern the world food system and thus shape the prospects of providing the entire planet with a secure and sustainable supply of safe and healthy food. We learn about the most important actors and institutions of global food governance, including international organisations such as the Food and Agricultural Organization (FAO), transnational agri-food corporations such as Monsanto, philanthrocapitalist charities such as the Gates Foundation, the World Trade Organization (WTO), as well as transnational social movements like <i>Vía Campesina</i> .
70193	Science Communication	2	Sem	3	- Scientists and the public - 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
70498	Food Security and Development	2	Sem	5	- The Political Economy of Development - Food Security Governance in the Global South
70643	Research Strategies and Methods: Qualitative Research Methods	2	Lec	5	Qualitative Research Methods - Research paradigms and designs in social sciences - Qualitative research methods (interviews, focus groups, participant observation, document analysis) - Analysing and reporting qualitative data
70648	Chemical Food Analysis	2	Lec	6	
70654	Practical course Chemical Food Analysis	4	Ins	6	
70658	Practical course Food Metabolome and Toxicology	3	Ins	6	
70660	Food Metabolome and Toxicology	1	Sem	6	
70663	Food, Health and Climate Communication	2	Sem	5	- 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
70699	Research Seminar for Digital Health & Data Science	2	Sem	3	This course is designed to provide students with an advanced understanding of digital health and data science research. The course will cover the latest research trends in digital health and data science, including wearable devices, mobile health applications, machine learning, and big data analytics. The course will cover the state-of-the-art methods in the field beyond code snippets and formal mathematical analysis, and expand the focus beyond learning of textbooks such as of journals and academic conferences. Students will learn how to critically evaluate and conduct research in digital health and data science by reviewing and discussing relevant research papers, presenting their own research ideas, and participating in group discussions. The course will also provide opportunities for students to interact with leading researchers and practitioners in the field.
70719	Food Metabolome and Toxicology	2	Lec	6	Profound knowledge in food chemistry, including macro and minor components, minerals, trace elements, vitamins and phytochemicals; Basic knowledge of residues and contaminants; Toxicological effects, critical values including supporting examples; Basic principles of the metabolism of xenobiotics (ADME - Absorption, Distribution, Metabolism and Elimination)

Number	Course Title	Duration	Type	ECTS / Credits	Module Description
70768	Human Interfacing and Healthcare Robotics	2	Lec	4	<p>Week 1: Introduction to human interfacing and healthcare robotics Overview of human interfacing and applications, Historical and current perspectives on healthcare robotics</p> <p>Week 2-3: Sensing and perceptions for healthcare robotics Biosensors and sensing modalities (Motion capture, IMU, EMG, EEG); Time series analysis and forecasting; Fourier analysis and digital signal processing</p> <p>Week 4: Filtering techniques for biosignals Time and Frequency domain of filters; Linear continuous-time filters, Wiener filter, Kalman filter</p> <p>Week 5-6: Human Anatomy and Physiology Anatomy and physiology of the human body; Sensorimotor control and motor learning; Neural interfaces and brain-computer interfaces</p> <p>Week 7-8: Kinematic Manipulations of surgical robots Kinematic Design and Modeling for Robotic Surgery (Minimally Invasive Surgery); Remote Centre-of-Motion Mechanism for Laparoscopic Surgery; Optimum Path Planning and Obstacle avoidance in robotic surgery</p> <p>Week 9: Control and vision of surgical robots Dynamic analysis and control for robotic surgery; Image segmentation, clustering, and classification techniques; Stereovision and 3D reconstruction</p> <p>Week 10: Kinematic and Dynamic analysis for Rehabilitation Robots Kinematic design of upper and lower limb rehabilitation robots; Dynamic Manipulations for upper and lower limb rehabilitation robots</p> <p>Week 11-12: Human-Robot Cooperative Control for Movement Restoration Gait trajectory tracking control; Human-in-the-loop impedance and admittance control</p> <p>Week 13: Robot Learning and Adaptation Introduction to robot learning and adaptation; Robot reinforcement learning; Robot imitation learning</p> <p>Week 14: Ethics and safety in human-robot interaction Overview of ethical considerations in human-robot interaction; Safety concerns and standards in human-robot interaction; Design considerations for ensuring safe and ethical human-robot interaction</p> <p>This lecture series will be complemented with hands-on lab sessions and project assignments to give students practical experience in designing and implementing human-robot interfaces.</p>
70783	2nd Year: Exercise re. Big Data (LV-No. 70394)	2	Tut		

**Key/Abbreviations:**

Coll Colloquium  
 ECTS Credit Points  
 Ins Internship  
 Lab Lab course

Lec Lecture  
 Sem Seminar  
 Tut Tutorial

**Please check availability of your chosen subject/course by contacting the respective faculty.**

You can find contact details at [www.uni-bayreuth.de/en/study](http://www.uni-bayreuth.de/en/study)



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