

Microbiology and Immunology

Courses

Compulsory courses		
Concept courses		
Immunology I/Immunology II	551-0317-00L/551-0318-00L	6
Microbiology (Part I)/Microbiology (Part II)	551-0313-00L/551-0314-00L	6
Elective compulsory courses		
Master courses		
<i>Autumn semester</i>		
Cellular Biochemistry of Health and Disease	551-1303-00L	4
Computational Biology	636-0017-00L	6
Current Topics in Molecular and Cellular Neurobiology	551-0512-00L	2
Cutting Edge Topics: Immunology and Infection Biology	551-1117-00L	2
Evolutionary Medicine for Infectious Diseases	701-1703-00L	3
Functional Microorganisms in Foods	752-5103-00L	3
Immunology III	551-0223-00L	4
Immunology: From Milestones to Current Topics	551-1171-00L	4
Molecular Biology of Foodborne Pathogens	752-4009-00L	3
Plant Pathology I	751-4504-00L	2
Systems Biology of Metabolism	551-1153-00L	4
<i>Spring semester</i>		
Allgemeine Virologie	551-1132-00L	2
Cutting Edge Topics: Immunology and Infection Biology II	551-1118-00L	2
Elements of Microscopy	227-0390-00L	4
Environmental Microbiology	701-1310-00L	3
Epigenetics	551-0140-00L	4
Infectious Agents: From Molecular Biology to Disease	551-1100-00L	4
Infectious Disease Dynamics	701-1708-00L	4
Introduction to Flow Cytometry	551-1700-00L	2
Microbial Biochemistry	551-1103-00L	4
Microbial Pest Control	751-4904-00L	2
Mykologischer Feldkurs	551-0216-00L	3
Nanoscale Molecular Imaging	529-0059-00L	3
Plant Pathology II	751-4505-00L	2
Recent Advances in Biocommunication	751-4805-00L	3
Selected Topics in Mycology	551-1130-00L	4
Technologies in Molecular Microbiology	551-1126-00L	4
Elective courses (free choice)		
Concept courses		
Bioinformatics	551-1299-00L	6
Cell Biology in Health and Disease	551-0326-00L	6
Cellular Biochemistry (Part I)/Cellular Biochemistry (Part II)	551-0319-00L/551-0320-00L	6
Concepts in Modern Genetics	551-0309-00L	6
Evolutionary Genetics	701-2413-00L	6
Lebensmittel-Mikrobiologie I/Lebensmittel-Mikrobiologie II	752-4005-00L/752-4006-00L	6
Molecular and Structural Biology I: Protein Structure and Function/Molecular and Structural Biology II: Molecular Machines and Cellular Assemblies	551-0307-00L/551-0307-01L	6
Molecular Life of Plants	551-0311-00L	6
Nucleic Acids and Carbohydrates	529-0731-00L	6
Proteins and Lipids	529-0732-00L	6
Systems Biology	551-0324-00L	6
Master courses		
Advanced Proteomics	551-0224-00L	4
Current Topics in Molecular and Cellular Neurobiology	551-0512-00L	2
Recommended Master courses		
Scientific Writing for Life Sciences and Chemistry	529-0079-00L	1
Writing Scientific Reports for MSc Biology	551-0575-00L	2
Master courses		
According to agreement with study advisor		
Elective courses in Humanities, Social or Political Sciences		
(min. 2 CP)		

About this major

Microbiology deals with microorganisms, a large and heterogeneous group of usually microscopically small prokaryotic and eukaryotic organisms, i.e. bacteria and archaea, protozoa, algae and fungi, but also viruses. Microorganisms are characterized by a high metabolic diversity allowing them to explore a wide variety of habitats. They are used in food production and in biotechnology including the production of pharmaceuticals and value-added chemical substances. As pathogens and commensals, they are of central importance for the health of host organisms including humans and represent the major target of our immune system. Immunology centers on the questions how such pathogens are recognized and how they are eliminated from the organism.

The elective major „Microbiology and Immunology“ offers courses and research opportunities in areas such as microbial biochemistry, cell biology, medical microbiology, virology, immunology, food microbiology, microbial ecology, plant pathology, mycology, parasitology.

The successful completion of the Master programme in Microbiology and Immunology prepares the student for a professional career in scientific research areas concerned with microorganisms and their impact on other organisms, including humans. It provides a solid scientific background for further academic studies towards a PhD followed by postdoctoral training, but also provides the Master graduates with a scientific profile desired for competitive positions in the fields of biomedicine and biotechnology, as well as in health organizations.

Study advisor



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