

Molecular Mechanisms of Disease

Courses

Compulsory courses		
Concept courses		
Cell Biology in Health and Disease	551-0326-00L	6
Elective compulsory courses		
Concept courses (choose one)		
Bioinformatics	551-1299-00L	6
Cellular Biochemistry (Part I)/Cellular Biochemistry (Part II)	551-0319-00L/551-0320-00L	3
Concepts in Modern Genetics	551-0309-00L	6
Immunology I/Immunology II	551-0317-00L/551-0318-00L	6
Systems Biology	551-0324-00L	6
Master courses		
<i>Autumn semester</i>		
Biological Engineering and Biotechnology	636-0108-00L	4
Cellular Biochemistry of Health and Disease	551-1303-00L	4
Development of the Nervous System (University of Zurich)	376-1305-00L	3
Evolutionary Medicine for Infectious Diseases	701-1703-00L	3
From DNA to Diversity: The Evolution of Multicellular Organisms (University of Zurich)	551-0571-00L	2
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
Neural Systems for Sensory, Motor and Higher Brain Functions	376-1305-01L	3
RNA Biology Lecture Series I: Transcription & Processing & Translation	551-1407-00L	4
RNA Biology Lecture Series II: Non-Coding RNAs: Biology and Therapeutics	551-1409-00L	4
Systems Biology of Metabolism	551-1153-00L	4
Translational Science for Health and Medicine	376-0300-00L	3
<i>Spring semester</i>		
A Problem-Based Approach to Cellular Biochemistry	551-1310-00L	6
Advanced Proteomics	551-0224-00L	4
Allgemeine Virologie	551-1132-00L	2
Current Approaches in Single Cell Analysis (University of Zurich)	551-0338-00L	2
Epigenetics	551-0140-00L	4
Functional Genomics	551-0364-00L	3
Infectious Agents: From Molecular Biology to Disease	551-1100-00L	4
Introduction to Flow Cytometry	551-1700-00L	2
Mechanobiology: Implications for Development, Regeneration and Tissue Engineering	376-1392-00L	4
Microbial Biochemistry	551-1103-00L	4
Molecular Imaging - Basic Principles and Biomedical Applications	227-0946-00L	3
RNA and Proteins: Post-Translational Regulation of Gene Expression (University of Zurich)	551-1404-00L	3
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

The Master programme in Molecular Mechanisms of Disease focuses on the study of fundamental molecular mechanisms underlying cellular, tissue and organ functions in higher organisms in the context of health and disease.

The program exposes students to a variety of research subjects and different experimental approaches bridging basic biological research and translational biomedical sciences, with particular emphasis on the identification of novel preventive and therapeutic opportunities for complex human diseases. Participants will acquire hands-on skills and obtain a broad education in molecular cell biology and physiology, genetics and genomics, immunology, developmental biology, neurobiology, cancer biology, and molecular medicine. They will have the opportunity to select among a large variety of courses to shape their curriculum based on individual interests.

The successful completion of the Master programme in Molecular Mechanisms of Disease prepares the students for a professional career in biomedical research areas with emphasis on scientific research concerned with biological questions on the cellular and organismal level. It provides a solid scientific background for further academic education, but also provides the Master graduates with a scientific profile qualified for competitive positions in biomedical and pharmaceutical industry, bio- and health technology field, clinical research laboratories, and health organizations.

Study advisor



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