Molecular Health Sciences

Courses

**Compulsory courses**

Concept courses

- 551-0326-00 Cell Biology 6

**Elective compulsory courses**

Concept courses (choose one)

- 551-1299-00 Bioinformatics 6
- 551-0319-00 Cellular Biochemistry I 3
- 551-0320-00 Cellular Biochemistry II 3
- 551-0309-00 Concepts in Modern Genetics 6
- 551-0317-00 Immunology I 6
- 551-0318-00 Immunology II 6
- 551-0324-00 Systems Biology 6

**Master courses**

Autumn semester

- 636-0108-00 Biological Engineering and Biotechnology 4
- 551-1303-00 Cellular Biochemistry of Health and Disease 4
- 376-1305-00 Development of the Nervous System 3
- 701-1703-00 Evolutionary Medicine for Infectious Diseases 3
- 551-0371-00 From DNA to Diversity (UZH) 2
- 551-0223-00 Immunology III 4
- 551-1171-00 Immunology: from Milestones to Current Topics 4
- 752-4009-00 Molecular Biology of Foodborne Pathogens 3
- 376-1305-01 Neural Systems for Sensory, Motor and Higher Brain Functions 3
- 551-1407-00 RNA Biology Lecture Series I: Transcription & Processing & Translation 4
- 551-1409-00 RNA Biology Lecture Series II: Non-coding RNAs: Biology and Therapeutics 4
- 551-1153-00 Systems Biology of Metabolism 4
- 376-0300-00 Translational Science for Health and Medicine 3

Spring semester

- 551-1310-00 A Problem-Based Approach to Cellular Biochemistry 6
- 551-0224-00 Advanced Proteomics 4
- 551-1132-00 Basic Virology (UZH) 2
- 551-0338-00 Current Approaches in Single Cell Analysis (UZH) 2
- 551-0140-00 Epigenetics 4
- 551-0364-00 Functional Genomics 3
- 551-1100-00 Infectious Agents: From Molecular Biology to Disease 4
- 551-1700-00 Introduction to Flow Cytometry 2
- 376-1392-00 Mechanobiology: Implications for Development, Regeneration and Tissue Engineering 3
- 551-1103-00 Microbial Biochemistry 4
- 227-0946-00 Molecular Imaging - Basic Principles and Biomedical Applications 2
- 551-1404-00 RNA and Proteins: Post-Transcriptional Regulation of Gene Expression (UZH) 3

**Elective courses (free choice)**

Master courses

According to agreement with study advisor

Elective courses in Humanities, Social or Political Sciences (min. 2 CP)

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**About this major**

The Master programme in Molecular Health Sciences 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 Health Sciences 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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