

Master of science in Biology

Modules taught in English

Winter semester (*Start: October 15; End: March 30*)

OM-01 Translational Biology (9 ECTS)

- Lecture: From fundamental research to application (4 ECTS)
 - *Daily lecture series in the first six weeks of the semester*
- Practical: Insight into application driven research (5 ECTS)
 - *1-week full-time practical*

OM-02 Genetics & Developmental Biology (9 ECTS)

- Lecture: Molecular genetics and development (4 ECTS)
 - *Daily lecture series in the first six weeks of the semester*
- Practical: Classical and molecular genetics (5 ECTS)
 - *1-week full-time practical*

OM-03 Introduction to Immunobiology (9 ECTS)

- Lecture: Basic concepts in immunobiology, medical microbiology and virology (4 ECTS)
 - *Daily lecture series in the first six weeks of the semester*
- Practical: Molecular and cellular immunobiology (5 ECTS)
 - *1-week full-time practical*

OM-04 Biochemistry & Microbiology (9 ECTS)

- Lecture: Biochemistry and microbiology (4 ECTS)
 - *Daily lecture series in the first six weeks of the semester*
- Practical: Exercises in Biochemistry and microbiology (5 ECTS)
 - *1-week full-time practical*

OM-05 Neuroscience – The Basics (9 ECTS)

- Lecture: From membranes to brains (4 ECTS)
 - *Daily lecture series in the first six weeks of the semester*
- Practical: Physiology, anatomy and behavior in neuronal systems (5 ECTS)
 - *2-week part-time practical*

EDS Experimental Design & Statistics (3 ECTS)

- Lecture and Exercise: Introduction to Experimental Design and Statistics (3 ECTS)
 - *3-week part-time course*

BLOCK 1: 6-WEEK FULL-TIME BLOCK BETWEEN EASTER AND PENTECOST

SP1-02 Genetics & Developmental Biology (12 ECTS)

- Lecture: Signalling in development and disease (3 ECTS)
- Practical: Animal models in the analysis of development and disease (7 ECTS)
- Seminar: Aberrant signaling in human diseases: From mechanisms to therapy (2 ECTS)

SP1-03 Advanced Immunobiology I (12 ECTS)

- Lecture: Advanced immunobiology (4 ECTS)
- Practical: Experimental immunobiology – B-, T- and innate cells (6 ECTS)
- Seminar: Advanced immunobiology (2 ECTS)

SP1-04 Microbiology and Systems Biochemistry (12 ECTS)

- Lecture: Microbial biochemistry (2 ECTS)
- Practical: Methods in microbial biochemistry (7 ECTS)
- Seminar: Current applied aspects of microbial biochemistry (2 ECTS)

SP1-05 From Sensation to Behavior (12 ECTS)

- Seminar: Neuroscience Research in Freiburg (3 ECTS)
 - Practical: From Sensation to Behavior (9 ECTS)
-

BLOCK 2: 4-WEEK FULL-TIME BLOCK AFTER PENTECOST

WM-04 Clinical Immunology (9 ECTS)

- Lecture, practical and seminar

WM-05 Cognitive Neurosciences (9 ECTS)

- Lecture, practical and seminar

WM-06 Current Topics in Immunobiology (9 ECTS)

- Lecture, practical and seminar

WM-07 Developmental Neuroscience (9 ECTS)

- Lecture, practical and seminar

WM-09 Mammalian and Plant Cell Technology (9 ECTS)

- Lecture, practical and seminar

WM-04 Clinical Immunology (9 ECTS)

- Lecture, practical and seminar

WM-11 Molecular Biology of Prokaryotes (9 ECTS)

- Lecture, practical and seminar

WM-17 Signalling in Tumour Cells – Functional Proteomic Studies (9 ECTS)

- Lecture, practical and seminar

WM-18 Molecular Signaling Mechanisms in Plants (9 ECTS)

- Lecture, practical and seminar

WM-19 Molecular Developmental Biology of Plants (9 ECTS)

- Lecture, practical and seminar

WM-21 The cell at high resolution (9 ECTS)

- Lecture, practical and seminar
-

BLOCK 3: 4-WEEK FULL-TIME BLOCK STARTING IN THE 5TH WEEK AFTER PENTECOST**WM-01 Bioinformatics (9 ECTS)**

- Lecture and practical

WM-12 Molecular Mechanisms of Animal Development (9 ECTS)

- Lecture and practical

WM-13 Neurobiology in genetic model organisms (9 ECTS)

- Lecture, practical and seminar

WM-16 Diversity and ecology of microorganism (9 ECTS)

- Lecture, practical and seminar

WM-23 Virology (9 ECTS)

- Lecture, practical and seminar

WM-27 Synthetic Immunobiology (9 ECTS)

- Lecture, practical and seminar

WM-28 RNA-Biology (9 ECTS)

- Lecture, practical and seminar

WM-29 Protein Chemical Biology (9 ECTS)

- Lecture, practical and seminar

WM-30 Neurophysiology and Behavior (9 ECTS)

- Practical

WM-31 Optophysiology (9 ECTS)

- Lecture, practical and seminar