master of science (MSc) in medical biology

GENERAL OUTLINE

Objectives
The Master of Science in Medical Biology degree is intended for students who are interested in biological research in the medical field.

Teaching focuses on the acquisition of key areas of expertise necessary for the development of new pre-clinical and clinical medical applications. This training gives students an in-depth knowledge of basic cellular functions, systems that transmit signals inside and among cells, human biology, and the normal and pathological functioning of the most important systems of the human organism. Considerable attention is also paid to learning and applying techniques used in medical biology, as well as to personal research work.

Skills development and career prospects
University studies develop, in addition to specific academic skills, a great many transverse skills such as: oral and written communication, critical, analytical and summarising faculties, abilities in research, management of bibliographical resources and familiarisation with scientific literature relating to the field, the learning and transmission of knowledge, independence and the ability to make judgments in the field of specialisation and overlapping areas.

This panoply of skills, combined with specialist knowledge acquired in the course of studies, is excellent preparation for a wide range of employment opportunities and economic sectors such as:
- Academic research
- Pharmaceutical industry
- Biomedical industry
- Biotechnology firms
- Medical laboratories
- Hospital environment
- Toxicological analysis laboratories

GENERAL INFORMATION

Organiser
School of Biology, Faculty of Biology and Medicine: www.unil.ch/ecoledebiologie

Degree awarded
Master of Science (MSc) in Medical Biology

ECTS credits
90

Duration
3 semesters

Teaching language
English. Recommended level: C1.

Enrolment
Applications must be submitted on time to the Admissions Service: www.unil.ch/immat

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www.unil.ch/masters
EDUCATIONAL CONTENT

Description
The first semester provides an introduction to human biology in the broad sense. Teaching covers the basic cellular functions and the transmission systems of signals inside and among cells, as well as the normal and pathological functioning of the most important systems of the human organism. You may obtain animal experimentation certification or follow a clinical research module.

The second semester is dedicated to specialisation and you choose a study path from among the four options available: Immunology and Cancer, Metabolism, Neurosciences, and Pharmacology and Toxicology. You begin your personal research work in the chosen study path.

The third semester is dedicated to the completion of personal research work.

Examinations
Examinations are held once every semester. For subjects included in the common study programme of the first semester and courses of the second semester there are both written and oral examinations.

Examination questions are often comprehensive and refer to the subject matter of several courses. The successful completion of personal work carried out for the Master’s degree is worth 45 credits (of the 90 necessary to obtain the Master’s degree).

Mobility
The personal research project can be conducted in a partner institution recognised by UNIL.

SYLLABUS

1st semester
Common study programme
Courses, seminars and practical work in:
• Cell Biology
• Intracellular Signalling
• Microbiology
• Cardiovascular Diseases
• Neurological Diseases
• Metabolic Diseases
• Immunology and Cancer
• Impact of a Patent on your Research
• Scientific Writing

Optional Modules
• Animal Experimentation Certificate
• Clinical Research Module

Personal Research Work
Introduction
30 ECTS credits

2nd semester
Choice of study path
Courses and practical work in clinical medicine and biostatistics
Options:
• Immunology and Cancer
• Metabolism
• Neurosciences
• Pharmacology and Toxicology
In each study path, start of Personal Research Work
30 ECTS credits

3rd semester
Personal Research Work
• Continuation and Conclusion of Research Work
30 ECTS credits

PRACTICAL INFORMATION

Admission requirements
Candidates must be holders of a Bachelor of Science in Biology or in a field considered to be equivalent awarded by a Swiss university. Another degree or academic title may be judged equivalent and give access to the Master’s degree course, with or without further conditions.

Regulations and additional information concerning the course
www.unil.ch/eb-mb

Administrative information
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Head of studies
Prof. Olivier Staub
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Final enrolment date
30 April
Candidates requiring a visa to study in Switzerland: 28 February.

Start of courses
Mid-September
Academic calendar: www.unil.ch/central/calendar

Part-time Master’s degree
Subject to certain conditions, Master’s studies can be followed part-time. In this case they correspond to semi-continuous studies (50%) for the entire duration of the course: All theoretical teaching in the first and second semester and then all practical work (introduction to research and Master’s dissertation).
For more details concerning the requisite conditions:
www.unil.ch/enseignement/tempspartiel

General information on studies, guidance
www.unil.ch/soc

Career prospects
www.unil.ch/perspectives

Accommodation and financial assistance
www.unil.ch/sasme

International students
www.unil.ch/international

Study abroad possibilities
www.unil.ch/echanges