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## Is our organism ours to control?

# 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.

#### Career prospects

University studies develop a great many transverse skills: 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, etc.

This panoply of skills, combined with specialist knowledge acquired in the course of studies, is an excellent preparation for positions in a wide range of economic sectors:

- Academic research
- Pharmaceutical industry
- Biomedical industry
- Biotechnology firms
- Medical laboratories
- Hospital environment
- Toxicological analysis laboratories

Example of opportunities and alumni's profiles:

[www.unil.ch/perspectives/biologie](http://www.unil.ch/perspectives/biologie)

### GENERAL INFORMATION

#### Organiser

School of Biology,  
Faculty of Biology and Medicine:  
[www.unil.ch/ecoledebiologie](http://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.

#### Contact

School of Biology  
Quartier UNIL-Sorge  
Amphipôle  
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[biologie-etudiants@unil.ch](mailto:biologie-etudiants@unil.ch)

#### Additional information

[www.unil.ch/eb-mb](http://www.unil.ch/eb-mb)

## 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.

The second semester is dedicated to specialisation and you choose a study path among the three options available: Immunology and Cancer, Neurosciences, and Pharmacology and Toxicology. You then begin your Master research project by a grant writing exercise. You may obtain the animal experimentation certification or the good clinical practice certification.

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

### Mobility

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

## SYLLABUS

### 1<sup>st</sup> semester - 30 ECTS credits

#### Common study programme

Courses, seminars and e-learning in:

- Cell Biology
- Intracellular Signalling
- Biostatistics
- Microbiology
- Cardiovascular Diseases
- Neurosciences and Brain Diseases
- Metabolic Diseases
- Immunology and Cancer
- Pharmacology and Toxicology
- Impact of a Patent on your Research
- Scientific Writing and Communication

#### Personal Research Work

Introduction

### 2<sup>nd</sup> semester - 30 ECTS credits

#### Choice of study path

Options:

- Immunology and Cancer
- Neurosciences
- Pharmacology and Toxicology

#### Optional Modules

- Animal Experimentation Certificate or
- Introduction to Clinical Research

#### Start of Personal Research Project

### 3<sup>rd</sup> semester - 30 ECTS credits

#### Personal Research Work

- Continuation and Conclusion of Research Work

## 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 awarded by a foreign university may be judged equivalent and give access to the Master's degree course, with or without further conditions.

### Administrative information

Ms Almudena Vazquez  
biologie-etudiants@unil.ch

### Enrolment and final dates

Applications must be submitted to the Admissions Service before 30<sup>th</sup> April:  
[www.unil.ch/immat](http://www.unil.ch/immat)

Candidates requiring a visa to study in Switzerland: 28<sup>th</sup> February.

### Start of courses

Mid-September. Academic calendar:  
[www.unil.ch/central/calendar](http://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/formations/master-temps-partiel](http://www.unil.ch/formations/master-temps-partiel)

### General information on studies, guidance

[www.unil.ch/soc](http://www.unil.ch/soc)

### Career prospects

[www.unil.ch/perspectives](http://www.unil.ch/perspectives)

### Accommodation and financial assistance

[www.unil.ch/sasme](http://www.unil.ch/sasme)

### International

[www.unil.ch/international](http://www.unil.ch/international)



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