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Master of science (MSc) in medical biology

GENERAL OUTLINE

Objectives

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

This Master's programme 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 functioning of the most important systems in the organism. Another major focus of this training is on system dysfunction leading to pathology, going from mechanistic understanding to disease prevention and/or treatment.

Strong emphasis is put on applying the knowledge gained in the classroom to cutting-edge biomedical research, through two personal research projects.

Career prospects

This Master will provide high-level training in medical biology, analytical and critical thinking, written and oral communication abilities, as well as management of bibliographic resources, familiarisation with scientific literature and other transversal skills.

As such, this programme serves as a foundation for potential careers in:

- Academic research
- Pharmaceutical industry
- Biomedical industry
- Biotechnology firms
- Medical laboratories
- Hospital environment
- Toxicological analysis laboratories
- Teaching
- Regulatory offices (patents, grants, etc.)

Other examples of opportunities and alumni's profiles:

www.unil.ch/perspectives/unil-et-apres

How to prevent or treat human diseases?

GENERAL INFORMATION

Organiser

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

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
CH-1015 Lausanne
Tél. +41 (0)21 692 40 10
Fax +41 (0)21 692 40 05
biologie-etudiants@unil.ch

Additional information

www.unil.ch/eb-mb

EDUCATIONAL CONTENT

Description

The first semester provides an introduction to human biology in the broad sense. Topics range from basic cellular functions and signal transmissions to the function of organs, in physiology and pathology.

The second semester is dedicated to the specialisation in your topic of choice, by following one of the four different tracks available: Immunology & Cancer, Pharmacology & Toxicology, Neurosciences and Metabolism & Human Health. You can also obtain the animal experimentation certification or the good clinical practice certification. You will then perform a grant writing exercise on the topic of your Master research project, to prepare you with the experimental work that follows.

More than 100 different biomedical laboratories at UNIL and the CHUV hospital offer cutting-edge research projects and participate in your experimental training. This larger research work will allow you to specialise in a topic and acquire diverse techniques and skills.

The third semester is entirely dedicated to the completion of your Master research project. This includes the presentation of a research poster, the writing of your thesis, and an oral defence in front of experts.

Mobility

The Master research project can be conducted in a partner institution recognised by UNIL including a non-academic research laboratory, elsewhere in Switzerland or abroad.

SYLLABUS

1st semester - 30 ECTS

Common study programme

- Cell Biology
- Intracellular Signalling
- Medical Microbiology
- Cardiovascular System and Diseases
- Neurosciences and Brain Diseases
- Metabolism and Associated Diseases
- Immunology and Cancer
- Pharmacology and Toxicology
- Mouse Models
- Biostatistics
- Scientific Writing and Communication

First step research project

2nd semester - 30 ECTS

Choice of study track

Options:

- Immunology and Cancer
- Pharmacology and Toxicology
- Neurosciences
- Metabolism & Human Health

Optional modules

- Animal Experimentation Certificate
- or
- Good Clinical Practice Certificate

Start of personal Master research project

3rd semester - 30 ECTS

Continuation and conclusion of Master research project

PRACTICAL INFORMATION

Admission requirements

Candidates must be holders of a Bachelor of Science (BSc) in Biology or in a field considered to be equivalent awarded by a Swiss university. Other degrees awarded by a foreign university may be considered equivalent and grant access to the programme with or without further conditions.

Administrative information

Ms. Almudena Vazquez
biologie-etudiants@unil.ch

Director of the programme

Prof. Sanjiv Luther
Sanjiv.Luther@unil.ch

Enrolment and final dates

Applications must be submitted to the Admissions Office before April 30th:
www.unil.ch/immat

Candidates requiring a visa to study in Switzerland: February 28th.

Start of courses

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

Part-time Master's degree

Under 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.

For more details concerning the required conditions:
www.unil.ch/formations/master-temps-partiel

General information on studies, guidance

www.unil.ch/soc

Accommodation and financial assistance

www.unil.ch/sasme

International

www.unil.ch/international



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Faculté de biologie
et de médecine