Molecular Biology

Master’s degree program

Master of Science: MSc in Molecular Biology

Curriculum

This Master’s degree program is offered by the Biozentrum of the University of Basel. It provides direct access to modern molecular biology research. The Biozentrum Basel conducts research and teaching at the international top level in a working atmosphere which equally promotes professional and personal development. The core activity of the Master’s degree is a supervised practical research project of at least 12 months length. In parallel, the students attend lectures to strengthen their knowledge in their area of specialization. The possible areas of specialization are Biochemistry, Biophysics, Computational Biology, Developmental Biology, Genetics, Immunology, Infection Biology, Microbiology, Neurobiology, Pharmacology, Structural Biology and Cell Biology. The students reach their Master’s degree by demonstrating their capacity to conduct a scientific research project and by presenting the results of their work in both written and oral form.

Focal areas of teaching and research

Research at the Biozentrum Basel embraces a wide range of topics and techniques, following the overarching intent to understand the molecular organization of living organisms. The research is concerned with structure and function of macromolecules, the wiring of regulatory circuits, as well as identifying general principles underlying complex biological systems and their dynamic interactions. Research at the Biozentrum is structured along five focal areas of investigation: Growth & Development, Infection Biology, Neurobiology, Structural Biology & Biophysics and Computational & Systems Biology. These research areas share concepts and technologies and act in a synergic and collaborative manner. New relevant questions often arise at the interface between the research areas, while innovative solutions arise from the individual technical. The Master’s degree program has been designed to meet all requirements of modern biological research.

Course structure

Master studies

The Master degree program Molecular Biology is a postgraduate “mono-course” degree consisting of one core subject. It requires a successfully completed Bachelor’s degree and awards a total of 90 ECTS credits.
Curriculum master studies

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<th>Master’s degree program Molecular Biology</th>
<th>ECTS</th>
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<tr>
<td>Master’s thesis</td>
<td>50</td>
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<tr>
<td>Master’s examination</td>
<td>10</td>
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<tr>
<td>In-depth professional studies</td>
<td>30</td>
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<td><strong>Total</strong></td>
<td><strong>90</strong></td>
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One ECTS credit point corresponds to approximately 30 hours of study.

**Course language**
The language of instruction is English. The Master’s thesis is to be written in English.

**Exams**
Student performance is assessed through course-accompanying certificates, proof of course participation according to study contracts, a Master's thesis and through a Master's examination.

**Language stays / Internships**
No language stays or internships are required.

**Combination of subjects**
The degree programs at the Faculty of Science generally consist of an in-depth subject with the possible addition of a second elective subject. The Master’s degree program Molecular Biology is a “mono-course” and does not include an elective subject.

It is possible to study biology in combination with a second subject from the Faculty of Humanities or the sports sciences (see UNI INFO “Biologie - ausserfakultäres Fach”).

The professional exam for the teaching diploma for secondary schools requires a Master’s degree in one or two subjects (i.e. Biology). At least one of the two subjects has to be successfully completed at the Master’s level. For the second subject at least 90 ECTS credits have to be awarded in consultation with the University of Applied Sciences and Arts Northwestern Switzerland (FHNW) and the teaching commission of the respective subject. The mandatory courses in biology are stated in an information sheet which can be obtained from the Studies Secretariat Biology.

**Start of program**
The program is to be started preferably in fall but can also be started in the spring semester.

**Duration of study**
The Master’s program typically lasts three semesters. There are no restrictions on the duration of study.

**Further degrees**
Teaching diploma for secondary schools
The teaching diploma enables teaching within the general school system at the Secondary Level II and is based on the academic degree at Master’s level of a university in one or two subjects. In addition, two semesters of vocational training
at the school for teacher education at FHNW have to be completed. The diploma
does not require a Master's degree in a second subject; however, it is advisable due
to better career options later after graduation. Details are to be found in UNI INFO
«Lehrdiplom für Maturitätsschulen».
Also see: www.fhnw.ch/ph > Studium > Diplom Sekundarstufe II

Doctorate
A Master of Science in Biology qualifies for a doctorate in biochemistry,
biophysics, botany, computational biology, genetics, microbiology, molecular
biology, neurobiology, structural biology, cell biology or zoology. Trans-faculty
doctorates are possible in the fields of epidemiology, history of the sciences,
medical-biological research and pharmacology.
The doctoral studies last typically 3–4 years. The acceptance of the dissertation is
followed by an oral examination in the doctoral subject.

Career opportunities
Biology is often considered as this century's key science. After successfully
completing their Master’s degree the graduates can study further for a doctoral
qualification or follow a profession in all fields of life sciences. The subject
Biology covers many disciplines and the career opportunities include activities in
the fields of medicine, biotechnology and pharmaceutical industries. The practical
advantages of the subject are found in basic research and increasingly also in
business, society and politics. Numerous jobs are open within the university, in
private industry, government service, schools and organizations, be it as
researchers, communicators, teachers or advisors.

Admission
Master studies
The following degrees allow for direct admission to the Master's degree program
Molecular Biology: Bachelor of Science in Biology with a Major in Molecular
Biology or a Bachelor of Science in Computational Sciences with a Major in
Computational Biology from the University of Basel. Other Swiss or foreign
degrees from an education institution recognized by the University of Basel
require approval by the examination commission of the Faculty of Science.
Binding information under: http://www.unibas.ch/admission

Application
Application under http://www.unibas.ch/application; the application fee amounts
to CHF 100.-. Application deadlines are April 30 for the fall semester and
November 30 for the spring semester.

Enrollment
The letter of admission informs students on the procedure of enrollment. Students
with a Swiss educational background do not have to be present in person for
enrollment.

Tuition fees
Per semester:
Tuition fees (also for examination semesters) CHF 850.-
Individual costs of living etc. are not included.

Scholarships and student loans
Applications are to be sent to the responsible office of the canton in which the parents are eligible to pay tax.

**Mobility**  
Semesters abroad are possible and supported by scholarship programs. The mobility programs facilitate the stay at other Swiss universities or foreign universities.  
Further Information:  
Student Exchange, Petersplatz 1, 4003 Basel, T +41 61 207 30 28,  
mobility@unibas.ch

**Further information**  
**Guidelines and regulations**

- Ordnung für die Bachelor- und Masterstudiengänge an der Philosophisch-Naturwissenschaftlichen Fakultät der Universität Basel vom 05.12.2015
- Guidelines for the Study Program Master of Science in Molecular Biology at the Faculty of Science of the University of Basel from 24 Mai 2016 (nonofficial translation from the German original, only the German original is legally valid).
- Merkblatt zur Erlangung der fachwissenschaftlichen Anerkennung für das Lehdiplom für Maturitätsschulen in Biologie (Lehrpersonen für die Sekundarstufe II) von Mai 2016  
www.bio.unibas.ch/reglemente/

**Information about the University of Basel**

- The course directory can be found under:  
- A new edition of the “Basler Studienführer” was published in 2016:  
  www.studienberatung.unibas.ch
- Website: www.unibas.ch

**Student Advice**

Questions regarding the study of Molecular Biology can be discussed with the Study Counselor for the Master Program Molecular Biology.
Contacts

Study Counselor for the Master Program Molecular Biology
Biozentrum
Klingelbergstrasse 70, 4056 Basel, T +41 61 207 20 82
e-mail: sebastian.hiller@unibas.ch

Studies Secretariat Biology
Biozentrum, Klingelbergstrasse 70, 4056 Basel, T +41 61 207 14 35
www.bio.unibas.ch
e-mail: susan.kaderli@unibas.ch

Study Counseling Student Teaching (Head Teacher, Sek II)
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