Molecular Biology

Master’s degree program

Master of Science: M Sc in Molecular Biology

Curriculum

This Master’s degree program is offered by the Biozentrum of the University of Basel and provides an introduction to molecular biology research. The Biozentrum has the aim to conduct research and teaching at the highest international level and to create a working atmosphere which equally promotes professional and personal development. The core activity of the program is a supervised practical work lasting one year. While students principally concentrate on their Master’s thesis they also attend lectures, particularly to increase their knowledge of their chosen specialist subjects which at the Biozentrum include Biochemistry, Biophysics, Computational Biology, Developmental Biology, Genetics, Immunology, Infection Biology, Microbiology, Neurobiology, Pharmacology, Structural Biology and Cell Biology. For the Master’s degree, the students must demonstrate their capacity to conduct their own research project and present the results following scientific criteria in a written and oral form.

Focal area of teaching and research

Research at the Biozentrum embraces a wide range of topics, however one main focus all the research groups share is a strong interest to understand the molecular organization of living organisms. The major areas of research are concerned with the structure and function of macromolecules, the wiring of regulatory circuits, and the general principles underlying complex biological systems and their dynamic interactions. Currently, the research groups of the Biozentrum are grouped into five major areas of investigation: Growth & Development, Infection Biology, Neurobiology, Structural Biology & Biophysics and Computational & Systems Biology. These research areas are not strictly separated from each but rather share concepts and technologies. Furthermore, new and relevant questions often arise at the overlap between the research areas, while innovative solutions can be found arising from the expertise of each respective area. The Biology degree programs are increasingly designed to meet the requirements of biological research.
The Master of Science degree is a postgraduate degree that requires a successfully completed Bachelor’s program. The program awards 90 ECTS credits in total. The Master’s degree program Molecular Biology is a so called mono-course consisting of only one core subject. Supervised practical work over the course of one year constitutes the core of the studies.

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<th>Curriculum master studies</th>
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<td><strong>Master’s degree program Molecular Biology</strong></td>
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<td>Master’s thesis</td>
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<td>Master’s examination</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 roughly equals 30 hours of studying.

**Course language**  
The language of instruction is English. The Master’s thesis is 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 master's examinations.

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

**Combination of subjects**  
The degree programs at the Faculty of Science are generally mono-courses with the possible addition of an in-depth subject and an elective subject. The Master’s degree program Molecular Biology does include an elective subject; however, no other subjects are required.

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 on a Master’s level. For the second subject at least 90 ECTS credits have to be awarded in consultation with the FHNW and the teaching commission of the respective subject. The mandatory courses in biology are stated in the appendix of the guidelines to the Bachelor studies in 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 lasts three (two) to four 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 can be found in UNI INFO «Lehrdiplom für Maturitätsschulen». Also see: http://www.fhnw.ch/ph/isek/Sekundarstufe_2

Doctorate

A Master of Science in Biology is the prerequisite for a doctorate in biochemistry, biophysics, botany, genetics, microbiology, neurobiology, structural biology, cell biology or zoology. Transfaculty doctorates are possible in the fields of epidemiology, history of the sciences, medical-biological research and pharmacology. The doctoral studies last roughly three years. After the acceptance of the dissertation follows an oral examination covering the postgraduate studies in the doctoral subject.

Career opportunities  After successfully completing their Master degree the graduates can study further for a doctoral qualification or follow a profession in all fields of life sciences. Biology is a subject that covers many disciplines and the career opportunities include research and related activities in the fields of medicine, biotechnology and pharmaceutical industries. The practical advantages of the subject are found not only in basic research but also, increasingly, in business, society and politics. Numerous jobs are on offer to biology graduates, within the university and also in private industry, government service, schools and organizations, be it as researchers, communicators, teachers or advisors. For these reasons, biology can rightly be considered as this century’s key science.

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 university degrees have to be approved by the respective teaching committee. Foreign degrees have to be approved by the examination commission of the Faculty of Science. Binding information under: http://www.unibas.ch/zulassung

Application  Application under http://www.unibas.ch/anmeldung: the application fee amounts to CHF 100.-. Application deadline for the fall semester is April 30, for the spring
Enrollment

The letter of admission also informs students on the procedure of enrollment. In general, 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 have to be send 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:

Mobility Office, Petersplatz 1, 4003 Basel, phone: +41 (0)61 267 30 28, mobility@unibas.ch

Further information

Guidelines and regulations

- Ordnung für die Bachelor- und Masterstudiengänge sowie die Doktoratsstudiengänge an der Philosophisch-Naturwissenschaftlichen Fakultät der Universität Basel vom 13.02.2007
- Ordnung für das Masterstudium Molekularbiologie an der Phil.-Nat. Fakultät der Universität Basel vom 13.02.2007 und Wegleitung vom 18.06.2013
- Merkblatt zur Erlangung der fachwissenschaftlichen Anerkennung für das Lehrdiplom für Maturitätsschulen (Lehrkraft für die Sekundarstufe II) in Biologie (Version Oktober 2010): siehe Anhang zur Wegleitung für das Bachelorstudium Biologie

Website: www.bio.unibas.ch/reglemente/

Information about the University of Basel

- The course directory can be found under: http://www.unibas.ch/vv
- A new edition of the “Basler Studienführer” was published in 2013: www.studienberatung.unibas.ch
- Website: www.unibas.ch

Student advising
Questions regarding the study of Biology can be discussed personally at the Student Office Biology (registration via email or phone)

**Contacts**

**Student Office Biology**
Bio-/Pharmazentrum, Klingelbergstrasse 50/70, 4056 Basel
Tel.: 061 267 14 35 oder 061 267 16 89
[www.bio.unibas.ch](http://www.bio.unibas.ch)
e-mail: susan.kaderli@unibas.ch / marianne.petrucci@unibas.ch

Questions concerning the teaching diploma for secondary schools
Departement Umweltwissenschaften, Bereich Botanik und Ökologie
Hebelstrasse 1, 4056 Basel, Tel.: 061 267 23 26
[www.duw.unibas.ch](http://www.duw.unibas.ch)
e-mail: juerg.oetiker@unibas.ch

**Dean's Office of the Faculty of Science**
Klingelbergstrasse 50, 4056 Basel, Tel.: 061 267 30 53
[www.philnat.unibas.ch](http://www.philnat.unibas.ch)
e-mail: marianne.hess@unibas.ch

**Examination Office of the Faculty of Science**
Klingelbergstrasse 50, 4056 Basel
Tel.: 061 267 30 54 / 061 267 14 96 / 061 267 15 88
[www.philnat.unibas.ch](http://www.philnat.unibas.ch)
e-mail: pruefungssek-philnat@unibas.ch

**Student Office of the University of Basel**
Petersplatz 1, 4003 Basel, Tel.: 061 267 30 23
[www.unibas.ch](http://www.unibas.ch)
Enquiries: [www.unibas.ch/studseksupport/?lng=en](http://www.unibas.ch/studseksupport/?lng=en)

**Student Advice Center Basel**
Steinengraben 5, 4051 Basel, Tel.: 061 267 29 29/30
[www.studienberatung.unibas.ch](http://www.studienberatung.unibas.ch)
e-mail: studienberatung@unibas.ch

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