

# Guidelines for the Study Program Master of Science in Molecular Biology at the Faculty of Science of the University of Basel

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## 1. General

The admission requirements and the descriptions of the degree programs at the University of Basel are set out in regulations, study programs and guidelines and are available on the Internet ([www.unibas.ch/en/Documents.html](http://www.unibas.ch/en/Documents.html)).

The Student Regulations of the University of Basel (in German: **Studierenden-Ordnung der Universität Basel**) regulates, amongst other things, the degree programs and grades, obtaining and recognition of credit points, change of personal data, email account, admission, matriculation, application and registration and general rights and obligations of students. Detailed information of the procedure for admission is available on the Internet ([www.unibas.ch/en/Documents.html](http://www.unibas.ch/en/Documents.html)).

The Regulation of the Faculty of Science for the Master studies (**Ordnung der Philosophisch-Naturwissenschaftlichen Fakultät der Universität Basel für das Masterstudium**; short: Rahmenordnung Master) determines the Master studies ([www.unibas.ch/en/Documents.html](http://www.unibas.ch/en/Documents.html) or [www.philnat.unibas.ch](http://www.philnat.unibas.ch)).

The Study program “Master of Science in Molecular Biology” (**Studienplan für den Masterstudiengang Molekularbiologie (Molecular Biology)**) (short: Studienplan Molekularbiologie) of 15 September 2020 regulates the Master degree in Molecular Biology ([www.unibas.ch/en/Documents.html](http://www.unibas.ch/en/Documents.html) or [www.philnat.unibas.ch](http://www.philnat.unibas.ch)). It is supplemented and explained by the present guidelines.

The Biology Teaching Committee is the responsible body for the Master Program in Molecular Biology. Its composition and duties are described in the Regulation of the Faculty of Science for the Master studies and in the Study program “Master of Science in Molecular Biology”, respectively.

Upon successful passing of the study program, the Faculty of Science awards the degree “Master of Science in Molecular Biology”.

The Master Program in Molecular Biology is offered by the Biozentrum of the University of Basel.

## 2. Admission to the Study Program

Students who have obtained the degree “Bachelor of Science in Biology, Major in Molecular Biology” or the degree “Bachelor of Science in Computational Sciences, Major in Computational Biology” from the University of Basel, are admitted without additional requirements/conditions to the study program “Master of Science in Molecular Biology”.

If the Bachelor degree program has been started before 1 August 2022, the following applies: Students with the acquired degree “Bachelor of Science in Biology, Major in Integrative Biology” are admitted without additional requirements/conditions to the Master Program, if they have passed one block course either of the Department of Environmental Sciences (Biology course) or the Swiss Tropical and Public Health Institute and three block courses of the Department Biozentrum, including the block courses “Structural Biology and Biophysics” and “Biochemistry”. It is possible to attend the block courses “Structural Biology and Biophysics” and “Biochemistry” during the Master study program, on condition that the module Physical Chemistry/Biophysical Chemistry (PC/BC) of the Bachelor program in Biology has been successfully completed (minimum grade 4).

If the Bachelor degree program has been started on 1 August 2022 or later, the following applies: Students with the acquired degree “Bachelor of Science in Biology, Major in Integrative Biology” are admitted without additional requirements/conditions to the Master program, if they have passed a block course of the Department of Environmental Sciences (Biology course) or the Swiss Tropical and Public Health Institute and the three block courses of the Department Biozentrum.

The admission of students from other universities is governed by the Regulation of the Faculty of Science for the Master studies and in the Study program “Master of Science in Molecular Biology”, respectively. It requires a Bachelor degree with 180 credit points which is equivalent to a “Bachelor of Science in Biology, Major in Molecular Biology” of the University of Basel.

English skills are a precondition.

## 3. Study Objectives

The Master degree provides an introduction to molecular biology research. The Biozentrum conducts research and teaching at the highest international level in a working atmosphere that promotes professional and personal development in equal measure.

Students can specialize in different areas (see **Section 4**). For the Master 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.

After successfully completing a Master degree in Molecular Biology the graduates can study further for a doctoral qualification or follow a profession in all fields of life sciences. The career opportunities include research and related activities in the fields of medicine, biotechnology and pharmaceutical industries. Furthermore, the graduates can follow a teaching career after completing the relevant studies required for this.

## 4. Study

The Master degree Molecular Biology (90 CP) includes the Master thesis (50 CP), the final examination (10 CP) and an in-depth specialist study (elective choice, 30 CP).

The Master Program usually takes 18 months (3 semesters). Since the experimental and/or theoretical research is at the forefront, the Master thesis usually lasts 1 year (full time). In the case of a part-time study, the study duration will be extended accordingly. The studies can start in the fall semester as well as in the spring semester. The timely distribution of the thesis (practical part, writing-up, preparation of the oral Master examination) is for the students to be organized in consultation with the responsible assessor of the thesis.

For the Master degree in Molecular Biology, the following special areas are possible:

Biochemistry	Developmental Biology	Microbiology
Biophysics	Genetics	Neurobiology
Cell Biology	Immunology	Structural Biology
Computational Biology	Infection Biology	

More details can be found on the following page of the Internet: [www.biozentrum.unibas.ch](http://www.biozentrum.unibas.ch)

## 4.1. Credit Point (CP) System

The review of student performance is done by course-accompanying examinations, through performance reviews according to the study contract for the Master thesis and the final examination. Credit points are granted only for adequate performance. This performance is considered sufficient when a minimum grade 4 or a “Pass” is given. A failed performance may be repeated. The number of granted credit points for the particular area itself depends on the time of completion as given in the current Course Catalogue of the University of Basel.

## 4.2. In-depth Specialist Study

Specialist studies (30 CP) are put together largely by students themselves, although at least 18 CP must come from selected courses of the Master Program Molecular Biology. The 18 CP are put together in consultation with the assessor of the thesis and should show in particular their specialization in the field of their special selected area of study. These courses are given in the course directory of the University of Basel in “Master’s Studies Molecular Biology” and consist of (i) courses of the Graduate Teaching Program of the Biozentrum (Cycles A-H), (ii) other courses, (iii) internal seminars of the individual research groups. The remaining 12 CP are to be chosen freely.

Student achievements can also be made outside of the regular courses on offer, e.g. by:

- Active participation in a meeting with a poster or presentation (1 CP per session)
- A literature study (up to 10 CP, depending on size) \*
- Participation in the University’s self-administration (up to 1 CP for the entire Master Program)
- tutoring activities (maximum 4 CP for the entire Master Program)

\* A literature study for e.g. 6 CP usually corresponds to about 20-30 A4 pages and a duration time of 4 weeks.

Registration for such an achievement is made by a **Learning Contract**, which is drawn up in consultation with the responsible lecturer in the [Online Services](#) (MOOnA) and approved by the student, the responsible lecturer and the chair of the Teaching Committee Biology before commencement.

## 4.3. Master Thesis

The Master thesis provides students with the opportunity to study independently on a problem in biological research. The work can be carried out in a team, but the students must be responsible for well-defined aspects of the research project. The Master thesis at the Biozentrum is undertaken with the supervision and responsibility of a professor (or professors) who is (are) working full-time at the Biozentrum (Assessor). A supervision is possible by a person external to the Biozentrum. However, in this case, a full-time professor of the Biozentrum must be responsible for the Master thesis (Second assessor). The second assessor of the Biozentrum is responsible, among other things, for ensuring that the Master thesis is carried out at a high level.

The list of potential supervisors as well as the procedure for Biozentrum external scientists who want to supervise for the first time a Master thesis in Molecular Biology (for this an explicit permission from the Group Leaders’ meeting (GLV) of the Biozentrum is required!) is available for download on the Internet: <https://bio.unibas.ch/en/studies/msc-molecular-biology>.

Before beginning the Master thesis, Part I: Agreement of the form “Learning Contract for Master’s Thesis” has to be completed in duplicate and signed by the student, the assessor and - if available - the second assessor

(Download at: <https://philnat.unibas.ch/de/studium/master>). The originals completed in Part I will then be handed in at the Studies Secretariat Biology. After the Head of the Teaching Committee Biology has signed both originals, one copy remains in the Studies Secretariat Biology, the second copy is returned to the student and must be taken to the oral Master examination.

The students must provide a written report as part of their Master thesis work. A completed and signed copy of the “Declaration on Scientific Integrity” must be enclosed in the Master thesis (download at: [www.philnat.unibas.ch/de/studium/master](http://www.philnat.unibas.ch/de/studium/master)). The Master thesis should be submitted to the responsible assessor together with the form “Expert Opinion on Master’s Thesis” at least four weeks before the oral examination (Download at: <https://bio.unibas.ch/en/examinations/master-thesis>).

The Master thesis will be reviewed and graded by the assessor named in Part I of the “Learning Contract for Master’s Thesis”. A further expert will be required in cases where an insufficient result or if grade 6 is given.

The final grade reached for a Master thesis is then communicated at the oral Master examination.

A print version of the written thesis must be delivered to the Studies Secretariat Biology.

Within the first two months, students can halt their Master thesis without consequences. A later termination is considered as a failed Master thesis.

For those Master students who fail, a second Master thesis with a new topic can be carried out. A second failure of a Master thesis leads to exclusion from the Master program Molecular Biology.

#### **4.4. Master Examination**

The Master examination takes place after completion of the Master thesis. The Master examination is an oral examination on the specialized selected topic and lasts 60 minutes. Topics examined include the theme of the Master project, the scientific literature as well as the area of work associated with it.

A written application needs to be handed in at the Studies Secretariat Biology four weeks before a Master examination (Download at <https://bio.unibas.ch/en/examinations/master-examination>).

A second form titled “Assessment Masters’s Examination” must also be brought to the oral Master examination (Download at: <https://philnat.unibas.ch/de/studium/master>).

The examiners during the Master examination are the professor of the Biozentrum responsible for the Master thesis (Assessor), a second professor of the Biozentrum and, if applicable, other lecturers who have supervised the Master thesis. If the Master thesis was supervised by a professor external to the Biozentrum, either from the Faculty of Science or from the Faculty of Medicine, the second professor of the Biozentrum is not required (see flowchart “Master Molecular Biology: Assessors, Second Assessors and Proctors” at [www.bio.unibas.ch/de/studium/msc-molecular-biology](http://www.bio.unibas.ch/de/studium/msc-molecular-biology)).

The oral Master examination is jointly graded by the examiners. For those Master students who fail, the examination can only be repeated one more time.

After the oral examination, the following documents must be delivered to the Studies Secretariat Biology:

- 1) “Learning Contract for Master's Thesis”, completed and signed in parts I and II
- 2) “Assessment Master's Examination”, completed and signed
- 3) “Expert Opinion on Master's Thesis”, completed and signed
- 4) Copy of the title page of the Master thesis
- 5) Printed version of the Thesis with enclosed form “Declaration on Scientific Integrity”

## **4.5. Qualification of the Master Program / Master Grade**

The Master study is successfully passed when the following credit points (CP) have been obtained:

- a) 50 CP from the Master thesis
- b) 10 CP from the Master examination
- c) 30 CP from the in-depth specialist study, of which at least 18 CP are from successfully completed, freely selected courses of the Master Program Molecular Biology.

The Master grade is calculated based on the average grade for the oral Master examination (weight 1/3) and the grade of the Master thesis (weight 2/3). This final grade will be rounded to one decimal place. Half a tenth will be rounded up.

## **5. Quality Assurance**

The quality of the courses offered will be continuously evaluated according to the requirements of the Faculty of Science of the University of Basel.

## **6. Recognition of Studies and Examinations**

The Examination Board of the Faculty of Science decides on the recognition of similar studies and course performances as well as credit points which have been or will be obtained in another degree program at the University of Basel or at another university upon application by the student. Equal or equivalent performances can only be recognized once. The extent of the recognized external course performances or credit points may not exceed half of the total required study performances. A Master thesis is not recognized.

Procedure: A written request with a detailed list of credit points and performance must be made to the Office of the Dean of Studies at the Faculty of Science, University of Basel. The application, a copy of all certificates of academic achievements together with a brief summary of the contents of the courses must be enclosed.

Applicants will be informed in writing of the recognition of their study and examination performance as well as additional credit points by the Office of the Dean of Studies of the Faculty of Science.

## **7. Validity**

The present guidelines apply to all students who commence the Master program in Molecular Biology on 1 August 2021 or later, or who are already matriculated in the Master program in Molecular Biology.

## 8. Relevant Course Facilities / Study Counseling

### Study Counselor for the Master Program Molecular Biology

Prof. Dr. Sebastian Hiller

E-Mail: [sebastian.hiller@unibas.ch](mailto:sebastian.hiller@unibas.ch)

### Dean of Studies in Biology / Chair of the Teaching Committee Biology

Prof. Dr. Walter Salzburger

E-Mail: [walter.salzburger@unibas.ch](mailto:walter.salzburger@unibas.ch)

### Studies Secretariat Biology

Susan Kaderli  
Bio-/Pharmazentrum  
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4056 Basel

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[www.bio.unibas.ch](http://www.bio.unibas.ch)  
[www.biozentrum.unibas.ch](http://www.biozentrum.unibas.ch)

### Office of the Dean of Studies of the Faculty of Science

Klingelbergstrasse 50  
4056 Basel

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### Student Administration Office of the University of Basel

Petersplatz 1  
4003 Basel

Enquiry: [www.unibas.ch/en/Student-Administration-Office-Enquiry.html](http://www.unibas.ch/en/Student-Administration-Office-Enquiry.html)  
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