



Master of Science in Medical Biology / MD-PhD program: Propaedeutic studies

Please read the instructions below very carefully.

General Rules

1. A minimum of **35 ECTS credit points** must be gained in the framework of the **MD-PhD/MSc Medical Biology programs**. Questions regarding these 35 points must be discussed with the MD-PhD program coordinator.
2. MD-PhD students: For your chosen **PhD program** (ZNZ, ImMed, MLS, ...) you will have to gain **an additional 12 ECTS credit points**. Questions regarding these 12 points must be discussed with your supervisor, thesis committee, and/or the PhD program administrator.
3. **Approval of propaedeutic studies:** Once you have completed all courses, please complete the document "List of credit points" (to be downloaded from the MD-PhD website) and send it to the MD-PhD program coordinator. MSc students list their courses in the Learning Agreement.

Rules regarding courses and credit points

4. Wet lab courses

- All students must complete **18 ECTS credit points** worth of wet lab courses (hands-on block courses).
- A selection of possible courses is listed on page 3.
- **BIO260:** Please note that BIO260 is a course in basic molecular biology techniques. It is a great course for Track 1 students. However, if you have worked in a lab for some time, BIO260 will be too basic for you.
- **Please note that access to other block courses than the ones listed may be restricted to Biology Bachelor/Master students.**
- Students opting for the **Biomedical Imaging Track** must attend the summer/winter schools, plus two of the other mandatory block courses.

5. Research Ethics

BIO630 is mandatory for all MD-PhD students. If you have already completed a course in Research Ethics, or for some reason are unable to attend BIO630, please contact the program coordinator.

6. Additional courses



- The residual credit points may be acquired by attending suitable natural science/biology courses at the UZH or ETHZ.
- A list of recommended lectures and courses is provided on pages 4-5. You can choose freely from this selection of courses.
- You are encouraged to pick other courses taught at the UZH or ETHZ natural science departments if they suit your specific interest better. If you wish to attend courses that are not listed here, your choice must be approved by the MD-PhD committee. Please send your course list to the MD-PhD coordinator, including a brief explanation.

7. Statistics & data analysis

Feel free to attend the course that suits your needs best. For suggestions and links, see page 4.

8. Soft skill courses

- Students may account up to a maximum of **4 ECTS credit points** gained with soft skill courses towards the 35 points. If you wish to attend more soft skill courses, you may do so; however, they will not be counted towards the propaedeutic studies.
- Please note that BIO 630, which is mandatory, counts towards those 4 points.
- MD-PhD students: please note that you may also attend soft skill courses during your PhD studies and account them towards the 12 ECTS you have to acquire there. Several PhD schools offer specific soft skill courses that may be mandatory and of interest to you. Please check directly with your PhD School for details.

9. Lab Rotations:

Lab rotations are strongly recommended for students who have no or little lab experience, and for Track 1 students.

For rules and instructions, see page 7.

Please note that the number of credit points awarded for a course may change from one year to the other. We revise this document in regular intervals; however, in the case that the points listed here differ from the points listed in the *Course Catalogue (Vorlesungsverzeichnis VVZ)*, it is always the information given in the VVZ that is effectual.

Contacts: Module booking

- Questions about block course booking: kresimir.rados@biol.uzh.ch
- Questions about module booking (BIO modules): studienkoordination@biol.uzh.ch
- Technical support: <http://www.students.uzh.ch/en/support.html>



Wet lab courses (18 ECTS out of these courses have to be picked)

Please note that if you register for a block course, you need to attend it full-time and you thus have to plan ahead accordingly. There is no possibility to get leave for individual days during a block course even if this is for events linked to your PhD position (clinical duty, conference attendance). Non attendance to a course is rated as failed (see regulations in Block course booking tool ¹⁾). A doctor's certificate has to be presented if you take sick leave.

UZH/ETH	Module	Title	Duration (block courses)	ECTS
UZH	BIO 260	Molecular Biology Course (block course)	3 weeks	6
UZH	BCH 308/309	Experimentelle Biochemie (block course)	3 weeks	6
UZH	BIO 430	Immunology (block course)	3 weeks	6
UZH	BIO 628	Neuroscience (block course)	4 weeks	6
ETHZ/UZH	-	Biomedical Imaging Summer School ²⁾	2 weeks	4
		Microscopy Winter School ²⁾	1 week	2

Mandatory courses

UZH/ETH	Module/Nr	Title	ECTS
UZH	BIO 630	Research Ethics for Life Scientists ³⁾	3
		Participation in the MD-PhD/Master retreat ⁴⁾ (1x Master students, minimum 2x MD-PhD)	0
Subtotal ECTS : wet lab & mandatory courses			21

¹⁾ https://www.uzh.ch/zoolmed/ssl-dir/Blockkurse_UNIETH.php

²⁾ Details, dates and booking information: <http://www.excite.ethz.ch/education.html>
If you wish to attend the Microscopy Winter School, we strongly recommend that you attend BIO 416 beforehand.

³⁾ BIO630 counts towards the softskill courses. It is offered once a year (usually in the spring semester).

⁴⁾ Organized by the MD-PhD students. You will be informed of respective events once you have enrolled.

Participation in the organization of the retreat will be awarded 1 ECTS credit point, which is counted toward the softskill courses.



Recommendations for additional courses

General interest

UZH/ETH	Nr	Title	Duration (block courses)	ECTS
UZH	LTK1 ¹⁾	Introductory course in Laboratory Animal Science	1 week	2
UZH	BIO 627	FACS course	4 afternoons	1
UZH	BIO 639	Medical Immunology	1 week	2
UZH	BIO 416	Microscopy		2
UZH/ETHZ		Microscopy Winter School ²⁾	1 week	2
UZH/ETHZ		Microscopy Summer School ²⁾	2 weeks	4
UZH	BIO144	Data analysis in Biology		5
UZH	STA120	Introduction to Statistics		5
ETH	227-0969-00L	Methods & Models for fMRI Data Analysis		3

¹⁾ Students working with animal models must attend this course. The costs will be covered by the MD-PhD program (contact administrator).

Registration: <https://www.ltk.uzh.ch/en/teaching-and-training.html>

²⁾ See page 3.

Other **statistics courses** are offered by:

- IT Department of UZH: <http://www.id.uzh.ch/de/dl/kurse.html>
- Life Science Graduate School:
<http://www.lifescience-graduateschool.uzh.ch/en/courses/tsc.html>
- ETH Zürich, Seminar for Statistics: <https://www.math.ethz.ch/sfs/education.html>
- Epidemiology, Biostatistics and Prevention Institute:
<https://www.ebpi.uzh.ch/en/teaching/uzhprograms/faculties/teachingbiostats.html>



Lectures			
ETH	551-0317-00 V	Immunology I	3
ETH	551-0318-00 V	Immunology II	3
UZH	BIO254	Functional Genomics	3
UZH	BIO219	Biomedical Imaging and Scientific Visualization	2
UZH	BIO615	Principles of Molecular Biology, Pathogenesis, and Control of Human Viruses	2
UZH	BIO617	Principles of biosafety in medical and biological research	1
UZH	BIO390	Introduction to Bioinformatics	2
UZH	BIO241	Gene regulation	3
UZH	BIO342	Comparative Behavioural Neurosciences	3
UZH	BIO364	The Physics of life	2
UZH	BIO437	Human adaptation	2
UZH	BIO708	Viral vector-mediated gene therapy	2

For recommended **courses in Neuroscience**, please refer to the course list of the Neuroscience Master program:

<http://www.biologie.uzh.ch/de/Studium/Masterstudium/MasterStudies/Neurosciences.html>



Lab Rotations

Students may include one or more lab rotations in their basic curriculum.

Rules:

1. All lab rotations must be approved by the MD-PhD steering committee.
2. Students will be granted 1 ECTS credit point per week (fulltime), up to a maximum of 16 ECTS.
3. Lab rotations can be performed in any lab affiliated to the Life Science Zurich Graduate School (LSZGS). Lab rotations in institutions outside LSZGS are subject to approval by the MD-PhD steering committee.
4. To request that a lab rotation can be included, the following information has to be submitted to the committee:
 - a. Invitation of the host lab, stating length of rotation and research topic
 - b. A one page description of the planned project that will be conducted during the lab rotation.
 - c. After finalisation of the lab rotation. A written report signed by the head of the host lab must be submitted to the MD-PhD committee and the appropriate ECTS granted.



Biomedical Imaging Track

UZH/ETH	Nr	Title	ECTS
ETH	227-0946-00L	Molecular Imaging	2
ETH	227-0948-00L	Magnetic Resonance Imaging	4
ETH	227-0390-00L	Elements of Microscopy	4
UZH	STA 404	Statistical Methods in Clinical Research	5
UZH	BIO 416	Microscopy/ Biomedical Imaging and Scientific Visualization	2
ETH	227-0967-00L	Computational Neuroimaging Clinic	3
ETH	227-0973-00L	Translational Neuromodeling	3
ETH	252-0840-01L	Anwendungsnahes Programmieren mit MATLAB	2
ETH	551-0434-00L	NMR Spectroscopy in Biology	6
ETH	551-1618-00L	Correlative Structural Biology - EM	4

→ The **Summer and Winter Schools** (see “wet lab courses”, page 2) are mandatory for all students opting for the Biomedical Imaging track.