



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

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**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.

### **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 students who do not have a lot of lab experience. However, if you have worked in a lab for some time, BIO260 will very likely be too basic for you.
- If you would like to include a wet lab course not listed, please contact the program coordinator.
- 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 are provided on pages 4-7. 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:

For rules and instructions, see page 7.

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**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 *Vorlesungsverzeichnis*, it is always the information given in the *Vorlesungsverzeichnis* that is effectual.**

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## Contacts: Module booking

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



## Wet lab courses

### Instructions.

UZH/ETH	Module/Nr	Title	Lecturer	ECTS
UZH	BIO 260	Molecular Biology Course (block course)	Hemmi	6
UZH	BCH 309	Experimentelle Biochemie (block course)	Gloor	6
UZH	BIO 430	Medical Immunology (block course)	Becher	6
UZH	BIO 628	Neuroscience (block course)	Tyagarajan	6
UZH	BIO 322	Cell Biology of Viral Infections (Blockkurs)	Greber	6
UZH	BIO 372	Virology: Methods in Molecular Biology, Pathogenesis, and Control of Human Viruses (course)	Trkola	6
ETHZ/UZH	-	Biomedical Imaging Summer School*	Kozerke	4
		Microscopy Winter School*	Ziegler	2

## Mandatory courses

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

\* Details: <http://www.excite.ethz.ch/education.html>

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

\*\*\* 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	Lecturer	ECTS
UZH	LTK1*	Introductory course in Laboratory Animal Science	Bugnon	2
UZH	BIO 254	Functional Genomics	Von Mering	3
UZH	BIO 627	FACS course	Manz	1
UZH	BIO 416	Microscopy and biomedical imaging	Ziegler	2
UZH	**	Microscopy Winter School	Ziegler	2

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

Registration: [http://www.ltk.unizh.ch/de/dyn\\_output.html?content.void=142](http://www.ltk.unizh.ch/de/dyn_output.html?content.void=142)

\*\* 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.

### Statistics and data analysis

UZH/ETH	Nr	Title	Lecturer	ECTS
UZH	BIO 209	Discovering statistic using R	Isler, Willems	6
UZH	BIO 445	Quantitative Life Sciences: from Infectious Diseases to Ecosystems	Kouyos	6
ETH	227-0969-00L	Methods & Models for fMRI Data Analysis	Stephan	3

Other 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:  
<http://www.ebpi.uzh.ch/en/teaching/uzhprograms/faculties/teachingbiostats.html>



### Molecular Biology

UZH/ETH	Nr	Title	Lecturer	ECTS
ETH	535-0810-00L	Gentechnologie	Neri	2
ETH	551-0326-00L	Cell Biology	Werner	6
UZH	BIO 244	Signal transduction and cancer	Basler	6
ETH	376-1581-00L	Krebs: Grundlagen, Ursachen und Therapie ( <i>in German</i> )	Nägeli	2

### Neuroscience

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>

### Infection and Immunity

UZH/ETH	Nr	Title	Lecturer	ECTS
ETH	551-0317-00 V	Immunology I (Lecture)	Oxenius	3
ETH	551-0318-00 V	Immunology II (Lecture)	Kopf	3
UZH	BIO 219	Biomedical Imaging and Scientific Visualization	Zollikofer	2
UZH	BIO 615	Principles of Molecular Biology, Pathogenesis, and Control of Human Viruses (lecture)	Trkola	2
UZH	BIO 617	Principles of biosafety in medical and biological research	Trkola	1



### Biomedical Imaging Track

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

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



## Soft Skills: Scientific Writing

There are a number of courses in Scientific Writing on offer, by the Biology department and by the PhD programs. Any of these courses will be fine.

Please note that some courses are not open to Track 1 students; make sure to clarify this beforehand.

## 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 8 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 into the study plan, 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.