

# Guidelines for the Master's Program in Infection Biology and Epidemiology of the Faculty of Natural Science at the University of Basel

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## 1. General Information

The admission requirements and description of the degree programs at the University of Basel are governed by regulations and guidelines that are available online at [www.unibas.ch](http://www.unibas.ch) under >Documents>Rechtserlasse (Laws and Ordinances).

The **Student Regulations of the University of Basel** govern inter alia: degree programs and the European Credit Transfer System (ECTS), general rights and obligations of students, and admission and registration, as well as matriculation and enrollment. Detailed information concerning admission procedures are available online at [www.unibas.ch](http://www.unibas.ch) under >Studying at Basel.

The **Undergraduate and Graduate Program Regulations (Framework)** govern the Bachelor's and Master's programs offered by the Science Department at the University of Basel, as well as the Doctorate program in general ([www.unibas.ch](http://www.unibas.ch) under >Documents>Rechtserlasse>Phil. Nat. Fakultät or [www.philnat.unibas.ch](http://www.philnat.unibas.ch)).

The **Master's Program Regulations in Infection Biology and Epidemiology of the Faculty of Natural Science at the University of Basel** of 13 February 2007 govern the

Master's program in Infection Biology and Epidemiology ([www.unibas.ch](http://www.unibas.ch) under >Documents>Rechtserlasse>Phil. Nat. Fakultät or [www.philnat.unibas.ch](http://www.philnat.unibas.ch)). These regulations are supplemented and explained by these **Guidelines for the Master's Program in Infection Biology and Epidemiology**. Study Regulations and Guidelines apply to all students commencing their studies on or after 1 August 2007 or who on the effective date of the Study Regulations were studying in accordance with the Master's Program Regulations in Infection Biology and Epidemiology of the Faculty of Natural Science at the University of Basel of 11 February 2003.

The governing body responsible for the Master's program in Infection Biology and Epidemiology is the Teaching Commission for Biology, the composition and duties of which are regulated in the **Master's Program Regulations in Infection Biology and Epidemiology**.

Upon successful completion of the Master's program the faculty confers the degree of "Master of Science in Infection Biology and Epidemiology."

The Master's degree program in Infection Biology and Epidemiology is offered by the Swiss Tropical Institute (STI).

## 2. Acceptance into the Program

Applicants with a Bachelor of Science in Biology from the University of Basel should submit a Motivation Letter and CV (Curriculum Vitae) to the Registrar's Office of the Swiss Tropical Institute. All other applicants should submit their applications to the Registrar's Office of the University of Basel, including a letter of application, the content of which should correspond to a Motivation Letter. All applicants are advised to complete in advance the course block "Infection Biology and Epidemiology." If this is not possible, the students should be capable of demonstrating equivalent knowledge in Infection Biology or Epidemiology. The number of available student placements is limited.

## 3. Program Objectives

### 3.1 Overall Objectives

This Master's degree program builds on the following five main learning objectives of the course block "Infection Biology and Epidemiology (IBE)" offered in the third year of the undergraduate biology program:

Graduates of the IBE course block in the undergraduate program:

- Understand the phenomena of infection from biological and epidemiological perspectives and are able to describe them from the molecular to the population level
- Recognize the significance of infections for individuals and society and are capable of interdisciplinary cooperation with medical and/or public health professionals
- Are able to analyse host-parasite relationships and propose control measures
- Receive an overview of molecular, cellular, and epidemiological methods for analysis of host-parasite relationships
- Understand research questions in the fields of Infection Biology and Epidemiology and are able to analyse, critically evaluate, and present research results.

The Master's level incorporates an in-depth exploration of the above learning objectives and independent studies, in particular with respect to the development of competence in the planning, independent execution, and written and oral presentation of research projects and results. Students who successfully complete the Master's program are qualified to undertake doctoral level work in the respective areas of specialization and sub-disciplines within the field and are capable of interdisciplinary dialogue between infection biologists and epidemiologists.

### 3.2 Technical and Methodological Competencies

At the beginning of the program, students select one of two options, or majors, in the Master's program, which share a common core of lectures and classes that promote the dialogue between laboratory science and epidemiological research.

The major in Infection Biology focuses on technical and methodological competencies relating to parasite-host relationships at the molecular and cellular levels and their interaction through specialized lectures and classes, and a Master's thesis that usually involves experimental work.

The major in Epidemiology concentrates on technical and methodological competencies in epidemiology, biostatistics, and healthcare relating to the analysis and comprehension of the occurrence and development of infectious diseases at the population level in various socio-ecological and socio-cultural environments.

### 3.3 Social Competencies

Students will develop a sense of responsibility with respect to their own scientific activities, as well as the ability to recognize ethical aspects of research and the

application of research results. The interdisciplinary questions require effective teamwork among specialists from many different disciplines, which is practiced in seminars and project work, and during completion of the Master's thesis.

### 3.4 Subsequent Areas of Activity

Students majoring in Infection Biology can expect to pursue careers primarily in research laboratories of institutes and industry; i.e., in areas in which immunological, molecular-genetic, microbiological, cellular biological, and parasitological knowledge and methods are required.

Students majoring in Epidemiology are likely to pursue careers mainly in institutes that perform fundamental epidemiological research, clinical trials, and public health research or that provide their services to industry or bi- and multilateral healthcare organizations.

## 4. Degree Program

The Master's degree program in Infection Biology and Epidemiology (90 credit points, CP) encompasses the Master's thesis (50 CP), the final examination (10 CP), and a specialized course of study (30 CP).

The program is typically completed in three semesters, based on full time study, or a commensurately longer period based on part-time study, and must be commenced in the fall semester.

The Master's degree can be completed in one of two majors:

For the major in Infection Biology, the research focuses on laboratory work, which is usually performed at STI under supervision of a lecturer from the University of Basel.

For the major in Epidemiology, the curriculum concentrates on epidemiological research, clinical trials, or the analysis of descriptive, analytical, and intervention studies, which is also performed under the supervision of a lecturer from the University of Basel or local specialists in the case of field projects.

All lectures and classes in the Master's Program are conducted in English.

### 4.1 Credit Point System

Student performance is evaluated based on course performance, performance in accordance with the Learning Contract, the Master's thesis, and the final examination. Credit points are assigned only for successfully completed courses. Courses in which a grade of at least 4 or "pass" is achieved are deemed successfully completed. Failed courses can be reevaluated. The number of credit points assigned for completed courses is based on the catalog in effect at the time the evaluation is performed.

## 4.2 Formal Responsibility to the Faculty

The tenured professors, associate professors, honorary professors, SNF professors, and lecturers at the Swiss Tropical Institute (hereinafter referred to as “Faculty”) are responsible for the Master’s Program in Infection Biology and Epidemiology at the University of Basel. The faculty advise the assigned students and assume responsibility for the Master’s thesis and the evaluation thereof, as well as for the final examination. The Faculty can delegate this responsibility to knowledgeable and expert lecturers from the University of Basel and/or to Thesis Advisors at the STI.

## 4.3 Master’s Thesis

The Master’s thesis (including preparation for the final examination) usually takes one year to complete. The topic of the thesis must be approved by a Faculty member.

Prior to commencement of work on the Master’s thesis, the front page (Part I) of the yellow form “Agreement on Master’s Thesis and Final Master’s Examination in Biology” must be completed in duplicate. The double-sided form can be obtained from the Registrar’s Office of the Swiss Tropical Institute. Both forms should be returned to the Registrar’s Office when completed. A version of the form is taken to the examination upon completion of the Master’s thesis.

Students can stop work on the thesis within the first two months. A later decision is considered a failure to complete the thesis, unless an extension was granted due to illness or accident.

Students create a written report covering the work done within the scope of the thesis. The thesis must be submitted at least four weeks before the verbal examination to the thesis advisor.

The thesis is evaluated and graded by the Faculty, and where applicable together with the thesis advisor. If the resulting grade is either a fail or a 6, an additional member of the faculty of the University of Basel who is not directly involved with the thesis must provide an independent expert assessment of the thesis.

The grade awarded for the Master’s thesis will be disclosed directly after the oral examination.

A printed version of the written Master’s thesis must be submitted to the Library of the Swiss Tropical Institute.

A Master’s thesis that has received a failing grade can be repeated once with a new topic. A second failure will lead to exclusion from the Master’s Program in Infection Biology and Epidemiology at the University of Basel.

#### 4.4 Examination

The final examination is a verbal test lasting 60 minutes, which is given after completion of the thesis. The examination covers the topic of the thesis, as well as the technical literature and the field of science related to the thesis.

The examination can be taken when the thesis has been accepted and 30 CP have been accumulated from the specialized study. The examination can be held at any time during the semester.

A written application must be submitted for the examination. The form “Application for Master’s Examination in Biology” can be found online at: [www.biozentrum.unibas.ch](http://www.biozentrum.unibas.ch), under >Education>Master.

Examiners are members of the Faculty or the thesis advisor and a second lecturer from STI. In agreement between the student and the Faculty, additional examiners can also be involved.

If the examination is not successfully completed, it can be repeated one time.

The title of the thesis, the grade awarded for the thesis, the grade for the examination and the overall grade will be disclosed immediately after the examination on the reverse side (Part II) of the yellow form “Agreement on Master’s Thesis and Final Master’s Examination in Biology.” The yellow form must be submitted to the Registrar’s Office at STI; subsequently the form will be forwarded via the Administrative Office of the Biology Department, together with a copy of the title page of the thesis, to the Examination Office of the Faculty of Natural Science.

#### 4.5 Specialized Study

For each semester, the lectures and classes with their respective maximum achievable credit points are listed in the catalog of the University of Basel. A chart showing the required and elective courses within the degree program is published online at:

[www.sti.ch](http://www.sti.ch), under >Teaching and Training>MSc Infection Biology & Epidemiology, Links.

The chart is updated every fall. For both majors, 18 of the required 30 CP must be taken from the Master’s curriculum in Infection Biology and Epidemiology at STI. The remaining CP can be earned in other courses but should be agreed upon with the thesis advisor. To achieve the goals of the Master’s degree and ensure interdisciplinarity, specific courses are already required within the undergraduate program in biology at the University of Basel. For students holding a Bachelor’s or Master’s degree from another institution, an individualized program will be created based on already completed studies. The content of the course block in Infection Biology and Epidemiology may need to be

repeated (through attending classes or independent completion of assignments using the appropriate learning software).

A Learning Contract must be completed together with the Faculty concerning the following requirements, which are outside of the regular course offerings:

Active participation in a conference with poster or presentation (1 CP per conference)

Participation in university-based independent study (max. 1 CP for the entire Master's program)

Tutorial activities (max. 4 CP for the entire Master's program)

The form "Learning Contract" is available online at:

<http://campus.unibas.ch>, under >Services>Students.

#### 4.6 Completion of the Master's Program / Overall Grade

The Master's program is successfully completed if the following credit points have been acquired:

a) 50 CP from the thesis

b) 10 CP from the examination

c) 30 CP from the specialized study, with at least 16 CP from required courses and 2 CP from electives for the major in Infection Biology and at least 18 CP from required courses for the major in Epidemiology (per chart, see Section 4.5).

The overall grade is calculated based on the grade for the examination (1/3) and the grade for the thesis (2/3). The resulting final grade is rounded to one decimal place. Half tenths are rounded up.

#### 5. Quality Assurance

The quality of the course offerings is evaluated through regular student surveys.

#### 6. Recognition of Course and Examination Credits

At the request of the Teaching Commission for Biology, the Examination Committee of the Science Department renders decisions regarding recognition of comparable coursework and examinations completed under a different degree program of the University of Basel or at another institution and credit points that were or will be acquired under a different degree program of the University of Basel or another institution.

Procedure: A written application containing a detailed listing of creditable academic achievements must be submitted to the Examination Office of the Faculty of natural

Science. All documentation substantiating the completed achievements, as well as a summary of the content of the courses and other events, should be enclosed with the application.

The recognition of coursework and examinations or credit points will be disclosed to the student in a disposition issued by the Examination Office of the Faculty.

## 7. Program Facilities and Academic Advising

### For questions concerning the major in Epidemiology

Dr. Marcel Tanner, Professor                      Director of the Swiss Tropical Institute  
Email: [marcel.tanner@unibas.ch](mailto:marcel.tanner@unibas.ch)

### For questions concerning the major in Infection Biology

Dr. Reto Brun, Professor                      Deputy Head of the Department of Medical  
Parasitology and Infection Biology, Master course  
Coordinator  
Email: [reto.brun@unibas.ch](mailto:reto.brun@unibas.ch)

### Registrar's Office of the Swiss Tropical Institute

Christine Mensch                      Phone: +41 61 284 82 89  
Swiss Tropical Institute                      Email: [Christine.mensch@unibas.ch](mailto:Christine.mensch@unibas.ch)  
Socinstrasse 57                      [www.sti.ch](http://www.sti.ch)  
4002 Basel

### Director of Studies for Biology (Chairman of the Teaching Commission for Biology)

Dr. Markus Affolter, Professor                      Email: [markus.affolter@unibas.ch](mailto:markus.affolter@unibas.ch)

### Academic Office of the Biology Department

Susan Kaderli                      Email: [susan.kaderli@unibas.ch](mailto:susan.kaderli@unibas.ch)  
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Klingelbergstrasse 50                      under >Education>Master  
4056 Basel

### Student Advising for Education Students (Senior Teacher, SLA II)

Dr. Thomas Boller, Professor                      Email: [Thomas.boller@unibas.ch](mailto:Thomas.boller@unibas.ch)  
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Approved by the Faculty of Natural Science of the University of Basel  
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