

## English Translation

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### **Academic Regulations and Procedures for Students of the Infection Biology Master Program at the Universität zu Lübeck awarding the Degree “Master of Science”**

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## **§ 1**

### **Area of Application**

These degree program regulations, in conjunction with the Examination Regulations (Statute) of the University of Lübeck for students on the bachelor and master degree programs, govern the Master degree program in Infection Biology at the University of Lübeck.

## **§ 2**

### **Program Objective**

(1) The Master program comprehensively prepares graduates for scientific and applied research in the field of human and animal pathogens. Worldwide, infections are the main causes of increased mortality and morbidity, confronting society with health policy challenges, which require the expertise of well-trained university graduates for research and practice in basic science, clinical and pharmaceutical research and development, in teaching and training as well as in diagnostics, epidemiology and health policy.

(2) The aim of the Master's programme in Infection Biology is to enable students to use their acquired competence and knowledge to research and combat infections and also to apply it in other biomedical fields of work through comprehensive teaching of scientific methods and models of pathogen-host interactions in infections as well as practising skills in infection biology. In addition to scientific and technical skills, students will also learn essential skills for scientific communication using the English language. Critical analyzation of published data and methods, the ability to document one's own data, being able to present scientific content in oral and written form as well as to formulate research proposals are all part of the learning, as is the development of skills for both independent

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scientific work and participation in interdisciplinary work groups and honing teamwork skills. Skills acquired through lectures and seminars will be applied in various internships (aka practicals/work placements) and participation in projects for the analysis of scientific problems and designing practical, feasible solutions for current scientific issues. This includes creating awareness of the ethical implications of biomedical research and imparting basic skills for social discourse on research. The independent selection of research topics by the students as well as the autonomous organization of research abroad or in industry, within the context of internships or the master thesis, is strongly encouraged. At the end of the degree program, students should be able to competently, independently and successfully use their knowledge and skills in academic or industrial environments.

(3) Upon successful completion of the Master's programme, the University of Lübeck awards the academic degree "Master of Science" (M.Sc.).

### **§ 3**

#### **Admission and Acceptance to the Degree Program**

(1) Admission requirements for the master degree program "Infection Biology", which the applicant must provide evidence of, are as follows:

1. A bachelor degree in biology, biochemistry, molecular life science or the second part of the medical examinations for human or veterinary medicine or a related field, for which the applicant must prove,

a) that she or he has earned a bachelor degree or the equivalent degree in biology, biochemistry molecular life science or the second part of the medical examinations for human or veterinary medicine or in a closely-related program of study at a German university or at a university that belongs to a country participating in the Bologna Process, or

b) that she or he has earned an equivalent degree in a closely-related program of study at a foreign university.

The equivalence of a foreign qualification will be determined in accordance with the assessment recommendations (aka Statement of Comparability) of The Standing Conference of the Ministers of Education and Cultural Affairs of the Länder (States) in the Federal Republic of Germany (<https://www.kmk.org/kmk/information-in-english.html>). The marks on the foreign proof of qualification are to be converted to the German marking system.

2. Proof of special qualifications, in which the first degree was completed with a grade of 2.7 or better.

3. Proof of sufficient knowledge of English in accordance with CEFR B2 (proven by submission of a German Abitur certificate showing courses in the language were taken for at least seven years, or through appropriate language tests (e.g. TOEFL, IELTS).

(2) The Examination Board makes all decisions concerning the evidence provided and the fulfillment of the application requirements stated in paragraph 1.

(3) If the qualifying program of study has not yet been completed at the time of application, but the bachelor thesis has already been begun, the submission of proof of examinations resulting in a minimum of 150 credit points and an average score of 2.7 minimum is sufficient for conditional admittance. In this case, evidence of the successful completion of the degree must be submitted within six months of beginning the studies. If this is not done, the conditional admission expires.

(4) Admission will be denied if the applicant has irrevocably failed an examination deemed necessary by the Examination Regulations of an Infection Biology degree program at a university of applied sciences in Germany or if the applicant is involved in a review process in said degree program.

(5) Admission into the degree program can only take place in the winter semester.

#### **§ 4**

#### **Curriculum**

The study programme is divided into the following sub-areas:

1. microbiology
2. immunology
3. cell biology
4. biochemistry
5. biophysics
6. clinic (pathogenesis, diagnostics, therapy, prophylaxis)
7. epidemiology of infectious diseases and their pathogens in basic and intensified form

#### **§ 5**

#### **Structure and Scope of the Degree Program**

(1) The degree program courses comprise a total of 120 credit points (KP) according to ECTS standards, with a prescribed period of study of two years. Credit points earned per teaching module:

- in the compulsory area of infection biology 42 CP (including block practical course of 16 CP)
- in the compulsory area of clinical aspects 17 KP
- in the compulsory area of microbiology 6 KP
- in the interdisciplinary area 25 KP

The master thesis, including the final colloquium, is worth 30 CP.

(2) Participation in further training modules offered by the university, which are beyond those specified in paragraph 1 of the module handbook, is possible and recommended. The results of such examinations can, upon request, be listed in the Diploma Supplement, provided they are included in one of the module handbooks of a degree program of the Universität zu Lübeck.

(3) The teaching modules of the individual sections and the optional courses are listed in the annex and described in detail in the module handbook. Mandatory as well as elective modules which are part of the of a prior bachelor degree program and have already been successfully completed cannot be chosen within the master degree program.

(4) Courses and examinations are conducted in English. By way of derogation from § 12 paragraph 2 and § 16 paragraph 4 of the PVO, examination tasks are, as a rule, completed in English.

## **§ 6**

### **Internships**

For the Master's examination, a module block internship with two different courses of a total of 22 weeks must be completed, whereby one course must last at least 12 weeks. The internships are for practical training and to prepare for future jobs. For this purpose, working in a business enterprise is just as suitable as that in non-university or university research institutions, provided that the activity conducted there has to do with ongoing research and development issues of the respective department and satisfies the demands made on a graduate of the master program in Infection Biology. The decision on this is made on an individual basis by the Examination Board.

## **§ 7**

### **Master Examination and Examination Prerequisites**

(1) The master examination consists of course-related subject examinations for the individual teaching modules and the master thesis with a final colloquium. Examinations in accordance with § 12 paragraph 1 in conjunction with §§ 13 ff. PVO are required for the modules of the categories A and B.

(2) The application for permission to do the master thesis is, in accordance with § 11 paragraph 8 PVO, to be made separately in writing to the chairperson of the Examination Board.

(3) In principle, admission to the course-related subject examinations occurs, in accordance with § 11 PVO, with the enrollment in the Infection Biology master program. For admission to a subject examination, according to § 11 paragraph 2 PVO, there could be specific prerequisites defined in the module handbook to be met before the module. Prerequisites must be completed and proof submitted before the time of the examination; they are not included in the module grade.

## **§ 8**

### **Prerequisites for the Master Thesis**

The authorization to commence work on the master thesis can only be granted if a student fulfills the prerequisites laid out in § 11 PVO, is at least in the third semester, and has submitted performance certificates from the degree program comprising at least 70 ECTS in accordance with § 5 paragraph 1. The block internship must have been completed; however module examination may still be pending.

# **Appendix 1 to Academic Regulations and Procedures for the Infection Biology Master Program of the Universität zu Lübeck**

## *The Module Catalog*

### **1. Preliminary remarks**

In the following tables, the teaching modules (LM) are listed for which performance certificates (LZF) must be earned in order to pass the master examination, divided into the various fields of study. For each teaching module the amount of average contact hours per week (SWS), the type – lecture (V), laboratory (Ü), internship (P) or seminar (S) – the number of credit points (KP) according to the European Credit Transfer System, and the type of performance certificate – category A or B – are indicated. Further details, such as learning objectives and content, the required coursework or the type of examination are described in the module handbook (MHB).

### **2. General instructions and rules for the selection of teaching modules**

Students have freedom of choice concerning the optional teaching modules, taking into account the examination requirements. The following rules must be observed:

- Courses cannot be counted more than once.
- Courses, which have already been specified in the examination certificate or Diploma Supplement of the qualifying bachelor degree program, cannot be selected.
- Further courses or module combinations may be accepted by the Examination Board if the request has been properly justified.
- Of the optional courses, only a limited number of teaching modules and only with sufficient demand will be offered in each academic year.

### **3. Compulsory teaching modules from the field of Infection Biology**

<b>Compulsory teaching modules</b>	<b>SWS</b>	<b>KP</b>	<b>Type LZF</b>
LS4015-KP06 Infection Biology 1	4V	6	A
LS4145-KP05 Infection Biology 2	2V+3P	5	A
MZ5111-KP06 Immunology	2V+2S	6	A
LS4165-KP09 Model Systems of Infection	3V+2S+2P	9	A
LS4115-KP16 Internship	24P	16	A
<b>Total</b>		<b>42</b>	

#### 4. Compulsory teaching modules from the field of Clinical Aspects

Compulsory teaching modules	SWS	KP	Type LZF
LS4045-KP05 Diagnostical Methods in Microbiology and Pathology consists of <ul style="list-style-type: none"> <li>– LS4045-L1 partial exam Diagnostical Methods in Microbiology and Pathology (graded exam, 2,5 KP)</li> <li>– LS4045-L2 partial exam Diagnostical Methods in Microbiology and Pathology practical course (graded practical course, 2,5 KP)</li> </ul>	2V+2P	5	A
LS4037-KP06 Clinical and Experimental Aspects of Host Pathogen Interaction consists of <ul style="list-style-type: none"> <li>– LS4025-L1 partial exam Clinical Aspects of Infection (graded exam, 4 KP)</li> <li>– LS4185-L1 partial exam Analysis of Host Pathogen Interaction (graded exam, 2 KP)</li> </ul>	2V+1S+1P	6	A
LS4155-KP06 Anti-microbial Therapy and Prophylaxis consists of <ul style="list-style-type: none"> <li>– LS4155-L1 partial exam Anti--microbial Therapy (graded exam, 4 KP)</li> <li>– LS4155-L2 partial exam Vaccination Strategies (graded seminar talk, 2 KP)</li> </ul>	2V+2S	6	A
<b>Total</b>		<b>17</b>	

#### 5. Compulsory teaching module from the field of Microbiology

Compulsory teaching module	SWS	KP	Type LZF
LS4175-KP06 Medical Microbiology	4S	6	A
<b>Total</b>		<b>6</b>	

#### 6. Interdisciplinary teaching modules

Interdisciplinary teaching modules	SWS	KP	Type LZF
LS4021-KP06 Structural Biology of Infection	4V	6	A

LS5205-KP06 Consolidation Courses	4S/P	6	B
PS4611-KP07 Ethics in Science / Scientific Writing consists of <ul style="list-style-type: none"> <li>– PS4621-L1 partial exam Ethics in Infection Biology and Public Health (ungraded exam, 4 KP)</li> <li>– PS4611-L1 partial exam Scientific Writing (ungraded exam, 3 KP)</li> </ul>	4S	7	B
MA1610-KP06 Applied Biostatistics and Epidemiology consists of <ul style="list-style-type: none"> <li>– MA1610-L1 partial exam Applied Biostatistics (graded exam, 4 KP)</li> <li>– MA1610-L2 partial exam Epidemiology (graded exam, 2 KP)</li> </ul>	5V+1Ü	6	A
<b>Total</b>		<b>25</b>	

## 7. Master Project

<b>Master thesis with colloquium</b>	<b>KP</b>
LS5995-KP30 Master Thesis in Infection Biology	30



## Appendix 2 to Academic Regulations and Procedures for the Infection Biology Master Program of the Universität zu Lübeck

The following table describes the recommended course of studies.

1. Semester (30 KP)	2. Semester (31 KP)	3. Semester (29 KP)	4. Semester (30 KP)
LS4015-KP06 Infection Biology 1 6 KP (4V)	LS4145-KP05 Infection Biology 2 5 KP (2V+3P)	LS4115-KP16 Internships 16 KP (24P)	LS5995-KP30 Masterthesis in Infection Biology 23 KP
MZ5111-KP06 Immunology 6KP (2V+2S)	LS4165-KP09 Model Systems of Infection 9 KP (3V+2S+2P)		
MA1610-KP06 Applied Biostatistics and Epidemiology 6 KP (5V+1Ü)			
LS4037-KP06 Clinical and Experimental Aspects of Infection 6 KP (2V + 2S/P)		LS5205-KP06 Consolidation Courses 6 KP (4S/P)	PS4611-KP07 Ethics in Science / Scientific Writing 7 KP (4S)
LS4045-KP05 Diagnostical Methods in Microbiology and Pathology 5 KP (2V+2P)	LS4155-KP06 Anti-microbial Therapy and Prophylaxis 6 KP (2V+2S)	LS5995-KP30 Begin Masterthesis in Infection Biology 7 KP	
LS4021-KP06 Structural Biology of Infection 6 KP (4V)	LS4175-KP06 Medical Microbiology 6 KP (2S)		
<b>6 Prüfungen</b>	<b>4 Prüfungen</b>	<b>4 Prüfungen</b>	<b>1 Prüfung</b>
Semesterwochenstunden: Vorlesung / Übung / Praktikum / Seminar			KP: Kredit- / ECTS-Punkte
<b>Pflichtmodul</b>	<b>Wahlpflicht</b>	<b>Pflichtmodul</b>	<b>Bereich</b>
Infektionsbiologie	Mikrobiologie	Klinische Aspekte	fächerübergreifend