

# **Rules and Requirements for Postgraduate (PhD) Studies and Examinations in structured doctoral programs of Hannover Biomedical Research School (HBRS), Hannover Medical School**

On December 15<sup>th</sup>, 2000 the Senate of the Hannover Medical School approved the following **Rules and Requirements for Postgraduate (PhD) Studies and Examinations in structured doctoral programs of Hannover Biomedical Research School (HBRS)** (alternatively Dr.rer.nat.). (*Modifications on June 4<sup>th</sup> 2002, February 11<sup>th</sup> 2004, April 21<sup>st</sup> 2005, March 14<sup>th</sup> 2007, April 15<sup>th</sup> 2009, November 9<sup>th</sup> 2011, November 14<sup>th</sup> 2012, June 18<sup>th</sup> 2014, May 11<sup>th</sup>, 2016, February 1<sup>st</sup>, 2017 and October 17<sup>th</sup>, 2018*)

## **§ 1**

### **Objective of PhD Studies**

Research studies at the Hannover Medical School (MHH) for the purpose of obtaining a PhD degree (hereinafter referred to as PhD studies) shall facilitate postgraduate training with a focus on specific research projects with a view to enabling the candidate to do in-depth scientific work on his or her own and to provide him or her with additional professional qualifications for future assignments in research or related areas of work. PhD studies shall foster the development of outstandingly gifted up-and-coming academics. The standard time allowed for completing PhD studies shall be three years. Once these PhD studies have been successfully completed, and the PhD examination has been passed, the MHH will award the degree of a Doctor of Philosophy (PhD) to medical students (including dentists), veterinarians, pharmacists, engineers, life scientists, and graduates with biomedical or health science related focus or Dr. rer. nat. to natural and life scientists and pharmacists (not to medical students).

## **§ 2**

### **Requirements for Access and Admission**

(1) Anybody having successfully completed university studies in medicine, veterinary medicine, engineering, pharmacy, natural sciences or biomedical/ health science focus (normally Master, Diploma or Staatsexamen) shall have access to PhD studies.

(2) Applicants are required to render evidence of above-average results obtained at university. The applicant's past career must reveal his or her particular qualification for and dedication to scientific work. Decision on whether or not a candidate qualifies for access to PhD studies is up to the PhD Program Committee (§ 4).

## **§ 3**

### **Admission to PhD Studies**

(1) The number of applicants that can be admitted to PhD studies is limited; the number depends on the respective program. The respective PhD Program Committee shall select the applicants to be admitted (§ 4). As a rule, the President of the MHH will give notice of the date of commencement of PhD studies once a year.

(2) Details of the as a rule three-step selection process (written application, written test in home countries or selection by program committee, interview) are regulated in the respective program 'rules of admission'.

(3) Application papers shall be submitted to the chairperson of the PhD Program Committee. Details of current application procedures are described on the website of HBRS.

(4) On the basis of the results of the selection process, the PhD Program Committee shall decide on admission to PhD studies.

(5) At MHH, candidates are enrolled as PhD students for the whole duration of their PhD work. Matriculation is done at the beginning of studies (usually winter semester).

## **§ 4**

### **PhD Program Committee**

(1) The respective PhD Program Committee shall be responsible for the conduct of PhD studies according to the Rules and Requirements for postgraduate studies and examinations to obtain a PhD (Dr.rer.nat.) degree. In the PhD program Infection Biology/ DEWIN the steering committee of the Centre for Infection Biology (ZIB) is acting as PhD program committee.

(2) As a rule, the PhD Program Committee shall be composed of four professors (or competent habilitated/senior scientists), a university scientist with a doctoral degree, and student representatives of every study year who have a joint vote. Students suggest on person from every batch to act as “class-speaker”. Members of the PhD Program Committee shall be appointed by the scientists of a respective program for a period of four years, or two years in case of student members. Re-election shall be possible. The respective PhD Program Committee shall be affirmed by the Research Committee of MHH. The PhD Program Committee is then constituted by the Dean of HBRS and shall elect a professor from among its ranks as chairman. The steering committee of ZIB is elected by its members. The steering committee then appoints a speaker among their ranks.

(3) The PhD Program Committee will meet regularly.

(4) The PhD Program Committee will evaluate proposed projects (open projects) according to quality (with external referees if necessary), financial support, guarantee of independence for PhD students.

(5) The PhD Program Committee shall appoint a team of co-supervisors (thesis advisory board) for each PhD student. Team members shall be habilitated or equally qualified. The team of co-supervisors shall be composed of the student’s personal supervisor at the MHH or partner institutes, and two further scientists qualified as university teachers whose professional activity shall be closely related to the subject of the project. Members of the thesis advisory board usually come from different departments/institutes. In case of several PhD students doing research in the same line, the respective co-supervisors’ teams can be composed of the same individuals.

## **§ 5**

### **Contents of Studies**

(1) The contents to be learned shall be conveyed to the students through their experimental or equivalent theoretical research work and through project-related as well as inter-disciplinary research-oriented courses and seminars. For that purpose, the PhD Program Committee shall prepare and submit, after consultation with the university institutions or partner institutes involved in these studies, a curriculum indicating compulsory and recommended courses or seminars for each discipline.

The courses and seminars shall be held by the teachers and professors of the MHH as well as partner institutes, including visiting professors. Teaching shall be in English. Lectures and seminars of different programs are mutually acknowledged. PhD students may also register for suitable courses or seminars offered by other scientific schools (Leibniz University, University of Veterinary Medicine, etc.). Students are encouraged to do active teaching themselves, e.g. by giving lectures at seminars or

postgraduate research training programs [Doktorandenkolleg]. PhD students independently maintain a study book, in which all training activities and presentations are documented. Each student's individual progress at PhD courses and seminars shall be monitored by the respective teachers (by signatures in study books).

(2) PhD students shall design, after consultation concert with their co-supervisors, their respective individual schedules pursuant to the curriculum established by the PhD Program Committee. Such individual schedule shall require approval by the respective co-supervisors' team. The student must complete a minimum of 300 hours at courses and seminars during his or her PhD studies; as a rule, at least 80% thereof must be taken at project-related courses and seminars and up to 20% may be spent on interdisciplinary learning (e.g. experimental techniques and bio-informatics, molecular biology, bio-statistics, scientific communication etc.).

During the first year of PhD studies, courses for physicians, dentists and veterinarians are intended to provide participants with a chance to consolidate their knowledge of the fundamental principles of natural sciences and courses for natural scientists are intended to consolidate their knowledge in medical aspects.

(3) PhD students could apply for a leave if justified (e.g. in case of pregnancy), but for no more than 12 months.

Short time stays abroad are very much appreciated and will be supported. If students take seminars and courses abroad, they could be acknowledged for the respective PhD program.

## **§ 6 Supervision**

(1) PhD students shall supervised by the members of their respective thesis advisory board (§ 4) appointed by the PhD Program Committee. The responsibilities of the team shall be:

- a) To act as co-supervisors and to give individual expert advice to PhD students all through their PhD studies.
- b) Within the scope of their research project, students have to work with appropriate methods on a clearly defined subject so that, with some realistic prospect of success, scientific knowledge can be expected to be incremented and the results of such research should be published in international peer-review journals. The co-supervisors shall make sure, and satisfy the PhD Program Committee to that effect, that students are not entrusted with any tasks unrelated to their PhD studies.
- c) To evaluate PhD students' progress during their studies by receiving their reports (annually) and conducting exams; and to assess their written final examination papers. The thesis advisory board meeting is conducted at least once a year. It is documented by a written protocol.
- d) Within a time of probation of 6 months from start of the PhD project, PhD students have to prove themselves and are evaluated mainly by the main supervisors. Within this time peroid, student status can be changed easily on both sides in agreement with the team of co-supervisors and PhD Program Committee. Upon request, the PhD Program Committee can decide about the termination of collaboration with the student.

The termination of collaboration after the time of probation requires first a moderated discussion by a member of the PhD Program Committee between the student and the respective thesis advisory board. A student member of the PhD Program Committee is allowed to join as well. Afterwards, the PhD Program Committee announces their recommendations.

(2) The co-supervisors shall be responsible for the financing of the respective research project and shall make efforts, during the standard period of PhD studies (three years), to raise the money needed for the PhD students they are in charge of. Any scholarships available at the MHH shall be awarded or distributed to the individual PhD programs by resolution of the HBRS Committee of MHH.

(3) Co-supervisors should assist PhD students in planning their further professional career.

(4) The responsibilities of co-supervisors for PhD students shall end upon the date when the latter pass their PhD examination (§ 10), which is normally three years but no later than five years after commencement of PhD studies. The duration of PhD could only be extended in exceptional cases for a maximum of one year. Reasons could be: a) intermittent medical training (specialization) by medical students during their PhD studies, b) prolonged parental leave or c) serious illness.

## **§ 7**

### **Scientific Colloquia (retreats)**

PhD students shall be invited annually by the PhD Program Committee to attend a public colloquium (retreat), giving them an opportunity to give an oral or poster presentation on the current status of their research (§5). The contents of such presentation, constituting an interim report, shall be submitted in writing by the PhD student to the PhD Program Committee.

The PhD Program Committee shall decide whether or not this progress report constitutes a sufficient step towards the successful completion of the student's research. If the Committee's comment is negative, such result shall be communicated in writing to the student and his or her co-supervisors' team, indicating the reasons.

Pursuant to a period of one month, the student shall submit a modified work plan for the next year of his research, giving due consideration to the recommendations made.

## **§ 8**

### **Intermediate Examination**

The oral intermediate examination shall be held no later than 18 months after commencement of PhD studies. By way of exception, which must be well-founded, the intermediate examination can be taken at a later date. If a student wishes such exception, he shall apply in writing to the PhD Program Committee adding a comment prepared by his co-supervisors' team.

The dates for intermediate examinations shall be determined by the PhD Program Committee. The intermediate examination shall be held by an expert in the special field and an additional member of the HBRS faculty (chairman). These two examiners are elected by the PhD Program committee. The exam shall cover topics from the student's research project and from the courses and seminars the student has registered for. The examination usually is held in English.

The following grades are given: excellent / very good / good / sufficient/ failed

If the student fails the intermediate examination he shall be allowed to retake it once, pursuant to a period of at least three and no more than six months as the examiners may decide. If the student fails again, he or she shall be deemed to have finally and absolutely failed. Following such final and absolute failure the student shall be taken off the register.

The "chairman" shall report the result of the intermediate examination to the PhD Program Committee. The result of the exam will account for 20% of the final grade (PhD or Dr.rer.nat.).

## § 9 Requirements for Signing up for PhD Examination

After completion of PhD studies, which is normally at the end of the third year, the PhD examination shall be held. The PhD student shall submit the following documents when signing up for the PhD examination:

1. Certificate of regular attendance at and completion of courses and seminars according to the curriculum, i.e. a total of at least 300 hours, and of three colloquia pursuant to § 7;
2. Certificate of attendance of a course on “good scientific practise”,
3. Certificate of intermediate examination;
4. A scientific thesis (dissertation) prepared as a Monograph in English or German by the PhD student on the research project the student worked on during his or her PhD studies, with introduction, materials and methods, results, discussion and summary. The thesis shall constitute an essential original scientific contribution to the discipline the student’s research project pertains to;
5. Alternatively (instead of a Monograph), usually two first author publications in internationally peer reviewed science journals (published or accepted) as a cumulative thesis. Shared first authorships are allowed. The PhD student’s personal contribution to such publications shall be clearly identified as well as the contribution of the other authors. In that context, “accepted” shall be deemed equivalent to “published”. As for this publication requirement, exceptions are possible with reasons to be given by the supervisor.  
The publications must be in one scientific context, and shall be supplemented by a newly composed, detailed description under a joint title in English or German of the research subject, including an overall summary and a discussion of results. Hereby, current literature shall be considered.
6. A written agreement to a potential screening of the thesis with plagiarism detection software (appendix 2).

The final version of the dissertation should be submitted in six printed copies as well as a digital version (appendix 1).

Before evaluation by the internal/external examiners, the dissertation can be checked for the agreement with the MHH guidelines on “good scientific practice“. This includes the screening of primary data as well as screening for plagiarism. In case of suspicion of scientific fraud, the dissertation is passed on to an ombudsman, who can initiate proceedings according to the guidelines on „good scientific practice“. During the ombudsman proceedings, the PhD process is paused.

The registration for the PhD examination (the submission of the PhD thesis) can be withheld after the PhD student had announced this to the PhD committee in written form. The PhD program committee informs the office of president.

To assess the thesis, the PhD Program Committee shall procure at least two independent expert opinions. Usually there is one external expert’s opinion, as well as one internal expert’s opinion. Experts are experienced researchers with a habilitation (or equivalent qualification). The external expert shall not be a member of MHH or HBRS faculty. The internal expert is not a member of the thesis advisory board. To be on the safe side, one expert shall be nominated as substitute in case of unforeseen drop outs. For the Dr. rer. nat., at least one of the experts (internal or external) has to have a natural scientist qualification. In addition, the co-supervisors’ team shall prepare an expert report on the dissertation, and such report together with the external and internal expert’s opinion shall serve to make the final assessment. The following grades can be given in the reports:  
excellent / very good / good / sufficient / failed

or  
ausgezeichnet / summa cum laude,  
sehr gut / magna cum laude,  
gut / cum laude,  
genügend / rite,  
nicht bestanden / non sufficit

All three reports are considered equally for the final assessment, together 60% for the final mark.

If one of the expert reports detects any shortcomings in the dissertation, the PhD Program Committee can be requested to have such shortcomings eliminated or remedied as a precondition for acceptance of the thesis. The chairperson can allow a reasonable period for the PhD candidate to remedy the shortcomings and recommend that he or she submit the thesis anew. In that respect, the chairperson of the PhD Program Committee can extend this period once only. The experts or the thesis advisory board shall assess the thesis again once the shortcomings have been remedied.

If, based on such second experts' vote, the PhD Program Committee declines to accept the thesis, the candidate shall be deemed to have failed the PhD examination finally and absolutely. In that case, the PhD student shall be taken off the register.

## **§ 10 PhD Examination**

The PhD examination consists of a public presentation (usually 15-20 min, in English) held by the PhD student at the Hannover Medical School on the subject of his research, a subsequent public disputation of the project of at least 30 minutes of duration to assess the knowledge acquired by the student on the subject of his specific area of research as well as on interdisciplinary subjects. The interview also serves to assess whether the candidate has acquired, and is able to apply, any knowledge and skills relating to the scientific environment of the subject of his research.

The examination is taken by an examination board: the external and internal examiner as well as a member of the PhD Program Committee (with PhD degree) who acts as chairman.

The final grade results from: the intermediate exam (20%), the written reports of dissertation by thesis advisory board/ the two experts' opinions (60%), the oral examination (20%). In justified exceptional cases, the examination committee may deviate from the latter rule.

The oral examination shall be taken on record in abridged form and shall indicate:

- A short summary of the examination content
- the grade earned for the intermediate examination
- the grade earned for the thesis (three independent written reports),
- the grade earned for the oral examination,
- the overall grade average earned for the PhD examination.

It shall be signed by the chairman of the board of examiners.

The following grades can be awarded:

Excellent/ very good/ good / satisfactory  
(Failed)

Equivalent to  
excellent / summa cum laude,  
very good / magna cum laude,  
good / cum laude,  
passed / rite.

The overall grade „excellent – summa cum laude“ is usually awarded only if at least one first-author manuscript is accepted for publication. Shared first-authorships are considered equally.

If the candidate fails the final examination, he or she shall be allowed to retake it once with the same board of examiners, pursuant to a period of at least three and no more than six months as the thesis advisory board may decide. Should the student then fail again, he or she shall be deemed to have finally and absolutely failed the PhD examination. Following such final and absolute failure the student shall be taken off the register.

The result of the PhD examination shall be communicated to the PhD Program Committee and the President's office (in case of failure with reasons and instructions about a person's available legal remedies) as well as to all German universities.

## **§ 11 and § 12**

### **Publication and Award of the Academic Degree of a Doctor of Philosophy (PhD)**

PhD students are obliged to publish their dissertation.

Once the student has passed the PhD examination and has distributed six copies of the dissertation (plus one electronic version) as well as a declaration that all documentation, electronic data, lab books and materials had been handed over in the respective department/institute, he or she shall be awarded the academic degree of a Doctor of Philosophy (PhD) or a Dr. rer. nat. degree by the MHH (latest one year after the PhD exam). Formatting has to be done according to the rules of MHH library. The publication in form of a monograph is allowed if it is clearly indicated that the dissertation has been published by MHH.

The PhD student together with the supervisor can apply at the 'Forschungsdekanat' for a so called 'Hold of the dissertation for publication' in order to protect intellectual property or patent issues. This application form needs to be handed in at the library together with the copies of the dissertation. In case of discordance of student and supervisor, the president of MHH or a designated person will decide on granting a 'Hold'. All information concerning the hold needs to be protected from unwanted distribution by a written agreement on confidentiality, for example in an application process. The PhD office can certify that the obligatory copies of the dissertation had been handed in and that the electronic version matches the printed version.

In consequence, there is a delay in making the dissertation publicly available. The "Hold" can be applied for one year. It can be extended twice for another year upon request.

At the end of the „Hold“, the library is automatically publishing the dissertation if there is no further application for extension.

A document as shown in Appendix 3 and 4 shall be issued to him or her in evidence of such award. The award shall authorize the candidate to use the academic title of a PhD or Dr. rer. nat..

## **§ 13**

### **Abrogation of PhD**

If by error requirements for PhD registration have been taken for granted or if the candidate has strongly violated the rules of "good scientific practise", the senate of MHH can abrogate the PhD title after at first evaluation of the MHH "Committee for Good Scientific Practise" and then after consultation of the respective PhD Program Committee.

## **§ 14**

### **Revocation of PhD title**

The PhD title is revoked by the senate of MHH (after consultation of the respective PhD program committee) in cases of criminal conviction or strong violation against the rules of “good scientific practise” in the PhD thesis. The decision is to be delivered to the aggrieved party.

## **§ 15**

### **Coming into Effect**

The Rules and Requirements for Postgraduate Studies and Examinations in structured doctoral programs of Hannover Biomedical Research School (HBRS) to obtain a PhD degree (or Dr. rer. nat.), as approved by the senate of MHH, are hereby published within the Hannover Medical School and are coming into effect.

Hannover,

The President  
Professor Dr. Christopher Baum

Appendix 1. Front pages of thesis (example)

Title

Logo of PhD Program

A thesis submitted for the degree of  
Doctor of Philosophy (PhD) [or Doctor of Natural Sciences (Dr.rer.nat.)]  
in the subject of XXX  
by  
First name Last name, Degree (e.g. Master)  
Month Year

Hannover Medical School  
International PhD program “XXX”  
in Hannover Biomedical Research School (HBRS)  
Department of XXX

2<sup>nd</sup> page

Acknowledged by the PhD committee and head of Hannover Medical School

President: Prof. Dr. Christopher Baum

Supervisor:

Cosupervisors:

External expert:

Internal expert:

Day of final exam/public defense:

## Appendix 2 Declaration

### Declaration

Herewith, I confirm that I have written the present PhD thesis myself and independently, in compliance with “the policy of Hannover Medical School on the safeguarding of good scientific practice and procedural rules for dealing with scientific misconduct” and that I have not submitted it at any other university worldwide.

Herewith, I agree that MHH can check my thesis by plagiarism detection software as well as randomly check the primary data. I am aware that in case of suspicion, ombudsman proceedings according to § 9 of MHH 'Guidelines of Hannover Medical School to guarantee good scientific practice and dealing with scientific fraud' will be initiated. During such proceedings, the PhD process is paused.

Hannover, (Month Year)

## Example of PhD certificate (According to § 11)

### Appendix 3

(MHH Logo)

Die Medizinische Hochschule Hannover unter der Präsidentschaft der Professorin/des Professors

Name Vorname verleiht

Frau/Herrn .Name Vorname

geboren am TT. Monat JJJJ in Stadt, Land

den Grad einer/s

Doktorin/Doktors der Naturwissenschaften (Dr. rer. nat.)

bzw. Doctor of Philosophy (PhD)

nachdem sie/er im Rahmen der Hannover Biomedical Research School unter Teilnahme am PhD Programm

XXXX durch ihre/seine Dissertation

TITEL

angefertigt in der Abteilung, Institut, Einrichtung,

sowie der öffentlichen Disputation der Arbeit ihre/seine Befähigung zu vertiefter selbstständiger wissenschaftlicher

Arbeit nachgewiesen und dabei das Gesamturteil

Summa Cum Laude (exzellent)/Magna Cum Laude (sehr gut)/Cum Laude (gut)/Rite (genügend) erhalten hat.

Hannover, den TT. Monat JJJJ

(Siegel)

Unterschrift

Programmsprecher/in

Unterschrift

Präsident/in der Medizinischen Hochschule Hannover

### Appendix 4

(MHH Logo)

Hannover Medical School under its President Professor Firstname Lastname confers upon

Firstname Lastname

Born on DD Month YYYY in town, country

the degree of

Doctor rerum naturalium (Dr. rer. nat.) / Doctor of Philosophy (PhD)

having participated in the PhD Program xxx within Hannover Biomedical Research School and having demonstrated the ability to undertake advanced independent research in his/her thesis

TITEL,

completed at the Institute of xx, Hannover Medical School, and a public defense of this thesis, which has been awarded the overall grade of

excellent (summa cum laude) / very good (magna cum laude) / good (cum laude) / sufficient (rite)

Hannover, DD Month YYYY

Signature

Chairman/woman PhD Program

Signature

President