

Guidelines for PhD- students' training at the HZB

A successful PhD thesis requires both well-defined objectives and structures which permit a satisfactory completion of the doctoral studies under the best possible conditions within a reasonable period of time. These guidelines were developed with this aim in mind and constitute the framework for training doctoral candidates at the HZB to ensure a successful completion of their doctorates within three years.

The guidelines set the framework for the rights and duties of both PhD students and their supervisors.

They are primarily intended for PhD students with a HZB contract; however, they should also apply to PhD students from cooperation partners if a major part of their PhD thesis work is done at the HZB. The official doctoral degree can only be awarded by a university.

The focus of PhD student training at HZB is the development of scientific skills which will enable graduates to pursue career opportunities in scientific research.

1. Aim of the PhD- student training

The HZB PhD program aims to impart the following abilities to graduates: an ability for independent research as well as management skills that allow them to lead a working group, to take control of their research activities, and the ability to communicate their results to a specific target group.

During their PhD the students will have gained their professional qualifications by attending seminars and lectures, and by presenting their (excellent) research results at conferences and in publications. They have learned to adhere to good scientific practice, and have gained insight into getting external funding and managing laboratories.

The HZB promotes the development of social skills by offering participation in doctoral students' networks and in events organised by public relations as well as compulsory and voluntary training schemes.

To enhance their overall qualifications, doctoral students are encouraged to undertake some limited additional tasks in teaching and in running scientific facilities at HZB that are not directly related to their research project. However, the extensive use of PhD students to compensate for a lack of personnel resources is in conflict with the intention of these guidelines.

2. Selection of doctoral students

For all students not following a structured doctoral student program, a bachelor's or master's degree is basic requirement for admission to a PhD position at the HZB. The final selection is left to the advertising organizational unit.

The most important selection criteria for applicants are their motivation to work on a specific topic as well as their professional and methodological abilities.

3. Supervision of doctoral students

In their scientific work the doctoral students must be supervised by qualified university lecturers or professors. A list of HZB supervisors with the right to confer doctorates is regularly updated and published.

Lecturers at foreign universities will be reviewed in advance by the scientific management.

Optimal supervision should be provided by a scientific supervisor with adequate time resources and social skills, who should not change during the doctorate.

4. Doctorate's committee

The doctorate's committee provides the best possible conditions for a successful completion of the doctoral thesis in accordance with these guidelines. Members of the committee are: the PhD student, the scientific supervisor, the supervisor with the right to confer a degree, and at least one expert close to the subject. The latter may be a member of the same institute, but should not be a member of the work group in charge of the PhD student. This backup supervisor may take part in the doctorate's committee as an observer.

Another expert on the subject or mentor may also be suggested by the PhD student.

Exception: if the scientific supervisor in a small group also has the right to confer a degree, another experienced scientist with a PhD must be appointed to the doctorate's committee.

The PhD student reports to the committee in regular meetings on the progress of the thesis. These sessions are convened by the scientific supervisor. At least 3 such formalized progress reports are part of the reporting system. The committee comments on deviations from the work plan, evaluates risks for the doctoral thesis and, if necessary, provides advice for members of the committee and for the speaker of the responsible scientific division.

5. PhD-students' contract

Generally, PhD students will receive one contract of employment, whose sole subject is the completion of a doctorate thesis. The duration of the agreement is 3 years. The pay is subject to the regulations of the funding agencies as well as the German public service pay scale.

All PhD students must enrol as doctoral students at their university.

When the contract is finalized, and before starting the doctoral thesis, the following details must be communicated to the HZB:

- The topic and a rough overview of the planned thesis
- The name of a HZB supervisor with the right to award doctorates
- The name of the scientific supervisor
- The name of a professor with the right to award doctorates, who can act as backup supervisor (if necessary)
- Applicable university regulations for doctorates

This information has to be confirmed in writing by all parties.

If the doctorate is completed within the period of the contract, the PhD-student will be eligible for a 6-month follow-up contract with full payment as a bonus.

If the doctorate cannot be finished within three years, the PhD student's contract can only be renewed if the time delay can be justified and if the completion of the doctorate in the next six months is realistic. A recommendation is made by the doctorate's committee after a review of the circumstances. The responsible board of the scientific division decides on the extension, which can generally only be granted once for a maximum of six months. Exceptions require an individual review by the HZB management.

6. Formalized Progress Report

In order to keep track of the progress of the thesis and especially to recognize arising problems in time, the PhD student must present a formalized progress report on the direction, status and further plans for their thesis to the doctorate's committee at the end of 6, 18 and 30 months.

This report with the comments from the doctorate's committee must be submitted to the board of the scientific division in question as well as to the representative of the PhD student coordination. Without the progress reports, an extension of the PhD students' contract will not be granted.

7. Completion of the doctoral thesis

Before presenting the doctoral thesis, the candidate is expected to have accomplished the following:

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- At least one refereed publication as first author.
 - Presentation of results at least at one national and one international conference
 - Several scientific internal and external presentations
 - Participation in training courses and/or graduate schools-
 - Participation in seminars over at least 5 training days for social and methodological skills on an individual basis

8. Office of Ombudsman – Tutoring, Mentoring

An office of ombudsmen settles disputes and other problems relating to the scientific work. Ombudspersons are available at both campuses from different scientific divisions.

During the first months, the new PhD students will be provided with a experienced doctoral candidate as their tutor. Subsequently, the HZB offers support concerning the choice of a mentor for the further development towards their doctoral thesis.

Appendix

To track the progress of their thesis work and particularly to detect problems early enough, PhD-students must present a progress report on course, status and further planning and deadlines of their work to the doctorate's committee at the end of 6, 18 and 30 months. Without progress reports, an extension of the PhD-students' contract is not possible.

Procedure:

When starting the doctoral thesis, the following should be communicated to the HZB:

- The topic and a rough overview of the planned thesis
- The name of a HZB supervisor with the right to award doctorates
- The name of the scientific supervisor
- The name of a professor with the right to award doctorates, who can act as backup supervisor (if necessary)
- Applicable university regulations for doctorates

This information has to be confirmed in writing by all parties involved and forms the basis of the progress reports.

Approximately 5 months after the thesis work at HZB started the PhD-coordinator will remind both PhD-student and supervisor of the first meeting of the doctorate's committee, which should take place after 6 months. Sessions of the doctorate's committee are arranged by the scientific supervisor. The progress report of the PhD-student will ideally be given to the doctorate's committee members one week in advance.

At the doctorate's committee meeting the PhD-student presents the progress report in the form of a summary (approximately 15 minutes). Subsequently, the report will be discussed, commented and signed by the members of the committee. The commented report will be forwarded to the responsible speakers of each division and to the PhD- coordinator.

The PhD-coordinator checks if reports are received, requests reports, and sends out reminders for the next progress report. The coordinator prepares a statistical analysis of all incoming reports, which give insight into the overall situation of the PhD-students at the HZB. The management, divisions, ombudspersons, speakers of PhD-students, the work council and equal opportunity commissioner all may retrieve the content of this analysis on request.

If problems are detected in the progress reports (orange/red traffic lights), the divisional board together with the supervisor and the PhD-student is asked to find a solution to the respective problems. The ombudspersons or the responsible scientific management should not be included unless the problems escalate. The PhD-coordinator checks with the divisions whether measures have been taken, in case the division does not remember to inform the PhD-coordinator. Furthermore, the divisional board contacts the scientific supervisor and PhD-student in order to discuss and overcome difficulties.

The PhD-student is free to contact a trusted ombudsperson, the work council, the equal opportunity commissioner and personnel department at any time. They will try to solve the problem and contact management in case of insurmountable difficulties. The PhD-coordinator must also inform the management if there is no improvement.

Appendix B

Checklist for skills, progress report and completion of the PhD

It is recommended that tasks which are not directly connected with the doctoral thesis should not take up, on average, more than one day per week in total. These tasks should be reduced in the last year, in order to ensure that the doctoral thesis is completed on time.

Publications	
Publications, ISI listed	at least one publication as first author when the thesis is submitted
Publications, others	Proceedings (poster-) abstracts etc.
Presentations of Results	
Poster presentation	The presentation of one's own work is important. Recommendation: once a year
Attendance at national conferences and workshops	Recommendation: once a year. The presentation of work is very important – as a poster or a talk. At least one conference talk is recommended.
Attendance at international conferences	Recommendation: one visit during the doctoral thesis. The presentation of work is very important, either as a poster or as a talk. At least one conference talk is recommended.
Presentations in public and in-house seminars	The presentation of work is very important, either as a poster or as a talk. At least one national and one international conference talk is recommended.
National and International Presentations	The presentation of work is very important, as a poster or a talk. At least one national and one international conference talk are recommended.
Technical and Further Education	
Schools and seminars for further training	Either relating to the doctoral thesis or a scientific exchange with another research facility in order to learn new techniques and methods.
Exchange programs	Either relating to the doctoral thesis or a scientific exchange with another research facility in order to learn new techniques and methods.
Doctoral lectures	Further qualification in the specific field and

	beyond. Recommended. At least one series of lectures.
Social Skills	
Seminar for social skills	At least 5 days training in the course of the work
Guided tours for school children and guest groups	In guided tours for groups the students get an overview of the HZB and learn how to present the institute to the outside world. Recommended: at least 2 guided tours per year
PR	Help with the presentation of the institute and its Science, e. g. in public events like "Lange Nacht" and "Girls' Day".
Teamwork: PhD-students network	Promotes exchange between PhD-students from different disciplines. This strengthens the social skills, such as team work with an emphasis on cooperation, motivation and communication.
Tutoring of new PhD-students	Supervision of new graduates and diploma students at the HZB, for a transfer of personal experiences. This strengthens the social skills, such as team work with an emphasis on cooperation, motivation and communication.
Professional Qualification	
Contribution to tasks such as supervision, care and maintenance of laboratory equipment and scientific facilities	This is part of the general laboratory activity, can also comprise the more time consuming supervision of particular instruments
Contribution to teaching tasks	Strengthens professional and social skills beyond the doctoral thesis