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Doctorate Rules and Regulations
of the Department of Mathematics and Computer Science
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§ 1 Definition of the Terms Doctorate and Doctoral Degree

(1) The Department of Mathematics and Computer Science of Freie Universität Berlin confers the academic degree of Doctor of Natural Sciences (doctor rerum naturalium, abbreviated: Dr. rer. nat.) on the basis of a properly executed doctoral procedure and in accordance with the following provisions.

(2) The doctorate confirms the successful completion of one of the study programs in the subjects offered by the Department of Mathematics and Computer Science and the qualification for in-depth scientific work through in-depth research. The doctoral work shall consist of a scientific paper (dissertation) and an exam colloquium (oral exam) in the doctoral subject. The doctorate may constitute the culmination of post-graduate or doctoral studies.

§ 2 Execution of Doctoral Procedures

(1) The faculty council shall appoint the doctoral committee at the beginning of its term. This committee is responsible for the proper execution of doctoral procedures and all other doctoral matters pertaining to the department. The doctoral committee shall consist of at least three full-time professors and one academic staff member with a doctorate. The doctoral committee must include professors from the three subjects. The professors have the majority of the votes. A substitute must be appointed for each member.

(2) The doctoral committee can independently or upon request by the doctoral candidate make the necessary decisions

- In the event of suspected procedural errors that have occurred during the execution of a doctorate
- In the event of disputes between the doctoral candidate and a supervisor

(3) Applications regarding para. 2 must be made immediately.

(4) The assessment of doctoral work (dissertation and oral exam) is the responsibility of a doctoral commission that is appointed by the doctoral committee (Section 9).
§ 3
Admission to Doctoral Procedure

(1) The prerequisites for admission to the doctoral procedure are as follows:

1. The candidate must have successfully earned his or her university degree at a university within the area of application of the Framework Act for Higher Education that is essential for the doctorate by having passed
   – A Master's examination,
   – A diploma examination, or
   – The first State Examination for teachers trained to teach at general education or vocational schools with a minimum grade of "good".

   Applicants whose grade for the first State Examination is less than "good" can also be admitted as an exception, if his or her scientific publications to date give rise to the expectation that the candidate is capable of earning a doctorate. The doctoral committee is authorized to make that decision.

   Applicants can be admitted with a Bachelor's degree in one of the subjects essential for the doctorate, if they successfully pass an assessment test in the doctoral subject and subjects closely associated with the dissertation project, which is administered by two full-time professors. The assessment test must match the requirements and procedures for a qualifying examination for Diploma or Master's examination and the respectively applicable rules and regulations for Diploma and Master's examinations of the Department of Mathematics and Computer Science.

2. If the applicant has a university degree from a university of applied sciences [Fachhochschule] or a university degree in a subject essential for a doctorate in mathematics and computer science that does not comply with the requirements listed under 1, the applicant can be admitted to the doctoral procedure, if the doctoral committee is convinced that the applicant is qualified for the doctoral subject. Upon having conferred with a representative of the respective field, the doctoral committee can admit an applicant conditionally to the doctoral procedure, and require the applicant to submit graded course assessments within a certain period of time, which are required to prove the applicant's knowledge regarding the doctorate he or she is applying for in addition to already submitted documents.

3. The submission of a working title and a description of the dissertation project that fulfills the requirements of Section 5, in a subject area pertaining to Mathematics, Computer Sciences, or Bioinformatics that is represented by at least one full-time professor from the department.

4. Presentation of a statement by a professor indicating that he or she is prepared to supervise and review the dissertation project.

5. The applicant cannot already have a doctorate in mathematics, computer science, and/or bioinformatics. Furthermore, the applicant cannot concurrently be involved in a doctoral procedure in mathematics, computer science and/or bioinformatics at another university or institution entitled to award doctorates.

6. The applicant must have the required means (Section 3, para. 3, sub-para. 5).

7. If a group of applicants applies for admission to the doctoral procedure with a jointly to be worked on dissertation project, the description of the dissertation project must provide information on the reasons for the collaboration. The doctoral committee shall, if necessary and in cooperation with the planned supervisors, decide if there are any reasons that would justify the joint work on the dissertation project and the size of the group. If there are justifying reasons, the group must be admitted to the doctoral procedure, if each of the applicants fulfills the prerequisites as per Section 3, para 1 sub-para. 1. For all other matters, the meanings of all provisions of these doctorate rules and regulations also apply to groups.

(2) Notwithstanding para 1, sub-para. 3, an already completed dissertation may be submitted in justified exceptional cases.

(3) Applications for admission to the doctoral procedure must be submitted in writing to the chair of the doctoral committee. They must be accompanied by:

1. All documents required as per para. 1,
2. A certificate of good conduct not older than three months pursuant to Section 30, para. 1 of the BZRG (National Central Registry and Education Registry).
3. A resume in the form of a table,
4. A written statement on whether the applicant has previously applied for a doctoral procedure at another university or another department of Freie Universität Berlin, if applicable, including all respective information on its results,
5. A written statement indicating which actual and personal means are probably required for the execution of the doctoral procedure,
6. A written statement that the candidate is familiar with the currently valid doctorate rules and regulations, and bei Frauen eine Erklärung über den gewünschten Grad gemäß § 1 Abs. 1.
(4) The chair of the doctoral committee shall inform all departments that are involved in applications for admission to doctoral procedures with an interdisciplinary topic. The doctoral committee shall subsequently decide, if the procedure can be carried out at the Department for Mathematics and Computer Science.

(5) The applicant can request an exam in an additional subject or exams in additional subjects pursuant to Section 13. The chair of the doctoral committee shall then inform the respective departments.

(6) The doctoral committee shall rule on applications for admission to the doctoral procedure within one month, during the free reading period within 6 weeks at the latest. The chair of the doctoral committee must inform the applicant on the admission in writing. The chair must inform the applicant in writing if his or her application has been rejected and provide the reasons for it.

(7) Admission can only be refused if:
1. The prerequisites listed in para. 1 are not fulfilled or
2. The documentation submitted together with the application for admission is incomplete and has not been completed within three months after having been requested to do so or
3. The period as per Section 14 has not ended yet or
4. The description of the dissertation project and/or the submitted dissertation pursuant to Section 3 para. 2 does not comply with the requirements of Section 5, para. 3, sub-para. 1.

(8) The doctoral committee must be informed in the event significant changes were made to the requirements that have led to the admission to the doctoral procedure. The doctoral committee shall then verify, if the necessary requirements for admission are still met, and shall decide on the continuation of the doctoral procedure.

§ 4 Registration as Doctoral Candidate

(1) Doctoral candidates, who are not already members of Freie Universität Berlin because they work for the university or are enrolled in a study program, must register as a doctoral candidate at Freie Universität Berlin.

(2) If the candidate does not register within the time period provided in the notice of admission to the doctoral procedure and/or the grace period, the admission to the doctoral procedure will expire. This does not, however, preclude a new application for admission to the doctoral procedure.

§ 5 Dissertation Project, Normal Doctorate Period

(1) The candidate is free to choose the topic of the dissertation. It is recommended, however, that it is geared towards the research areas of the department. Generally, the dissertation project should be completed within four years (normal doctoral period). Persons, who have no responsibilities other than their doctorate, are expected to complete their doctorate within three years.

Should a doctoral candidate exceed the normal doctorate period, he or she must present a statement from the doctoral committee to the university administration indicating the status of the dissertation and the amount of time the candidate probably still requires. If the statement is not submitted within three months of the doctoral candidate having been asked to do so for reasons the doctoral candidate is responsible for, the admission to the doctoral program expires.

(3) The description of the dissertation project (Section 3, para. 1, sub-para. 3) must show that the doctoral candidate has an overview of the current research status pertaining to the special field of the dissertation project, knows how to integrate it into a wider, subject-related context, and that the dissertation is expected to make a new research contribution. The doctoral committee may obtain an expert opinion, if it has serious doubts regarding the fulfillment of the requirements listed in sentence 1.

§ 6 Supervision of the Dissertation Project

(1) The Department of Mathematics and Computer Science must guarantee the supervision and review of the work for the duration of the doctoral procedure.

(2) A dissertation project is usually supervised by a qualified professor of the department. This professor shall, pursuant to Section 3, para. 1, sub-para. 4, provide a statement indicating that he or she is prepared to supervise and review the dissertation project. Upon request, the supervisor shall inform the doctoral commission on the status of the dissertation. Professors from a university of applied sciences may be actively involved in the supervision, if the supervisor and the doctoral candidate agree.

(3) The supervisor must make him or herself adequately available to the doctoral candidate to advise the candidate and to discuss the dissertation project.
(4) The supervisor shall advise the applicant with regard to scholarships and other assistance.

(5) Should the supervisor or the doctoral candidate feel compelled to terminate the supervisory relationship while the project is ongoing, they must immediately inform the doctoral committee and state the reasons. The doctoral committee shall decide if a new supervisor needs to be appointed. If a supervisor leaves Freie Universität Berlin, the supervisor shall be entitled to complete the supervision of a commenced dissertation and to remain a member of the doctoral commission.

§ 7

Dissertation and Topic of the Oral Exam Presentation

(1) The doctoral candidate must present a dissertation in terms of Section 5. The dissertation must be submitted to the department's examination office.

(2) A dissertation may be submitted as the work of an individual (individual dissertation) or as an individual work that is part of a group project (dissertation as part of a group project). The scope and type of the work contributed to the dissertations must satisfy the general requirements, and must be clearly defined and assessable.

(3) A completely or partially published paper cannot have been outdated by articles published since then by other authors. The reviewer shall determine if this requirement is fulfilled (Section 8).

(4) The doctoral candidate must reference all resources and aids that were used and assure that the paper was authored independently on this basis. The paper cannot have been submitted as part of an earlier doctoral procedure. In the event of doubt, papers from earlier doctoral procedures (Section 3, para. 3, sub-para. 2, No. 4) must be submitted for comparison purposes.

(5) The dissertation must be submitted in German or English.

(6) The dissertation’s title page must include the topic, the author’s or authors’ name(s), list the Department of Mathematics and Computer Science of Freie Universität Berlin and the year of submission. It must also include a cover page for the names of the reviewers. The appendix must include a summary of the results of no more than one page in German and, subject to the doctoral candidate's approval, a brief resume.

(7) The dissertation must be submitted in quintuplicate. One copy must be appropriate for a later duplication. One copy remains with the department.

(8) After the review process, the doctoral candidate shall submit a suggestion for a presentation topic for the oral exam that must include a brief abstract. The doctoral candidate may seek the advice of the supervisor or the doctoral commission with regard to the selection of the presentation topic. The doctoral commission shall decide on the acceptance of the suggested presentation topic. If needed, a second suggestion may be requested.

§ 8

Dissertation Assessment

(1) The doctoral committee appoints the reviewers immediately upon submission of the dissertation.

(2) The primary reviewer of the dissertation to be appointed is the supervisor pursuant to Section 6, para. 2, sub-para. 1. In addition, the doctoral committee shall, jointly with the doctoral candidate, appoint an external reviewer, who must be a professor. Up to two additional reviewers can be appointed. At least one reviewer must be a full-time professor and at least one reviewer must belong to the department. If significant methodological or objective aspects of the dissertation touch on a subject area that is predominantly represented by another department, another reviewer should belong to that department.

(3) The reviewer's opinions must be drafted independently from each other and submitted to the examination office within three months after having been requested. A reviewer's failure to observe the time limit must be justified to the doctoral committee in writing. If an external reviewer exceeds the time limit, the examination office shall contact this reviewer and apprise the doctoral committee of the situation. If a reviewer exceeds the time limit by more than one month, the doctoral committee can appoint a new reviewer. The opinions must be treated confidentially. They should assess the importance of the dissertation in a larger context, honor the results of the paper, and outline any deficiencies. In addition, the reviewers can request changes for the version of the dissertation to be published (Section 17, para. 1). These must be described in detail. Each reviewer must write a final overall assessment, in which he or she must recommend the acceptance of the dissertation and suggest a grade pursuant to Section 10, para. 1. or the rejection.
of the dissertation. If a reviewer’s opinion does not clearly state the required assessments, the doctoral commission shall return the opinion to the reviewer for revision purposes.

(4) If the grades suggested by the reviewer differ by more than one grade or if the opinion includes comments as per para. 5 against the assessment of the dissertation, the doctoral committee may, upon the suggestion of the doctoral commission, appoint another external reviewer.

(5) At the end of the assessment process, the dissertation must be laid open in the department for two weeks during the lecture period and three weeks during the free reading period, respectively. If a member of the department, who is qualified to supervise dissertations as per Section 6, para. 2, submits a respective request to the doctoral committee, the period during which the paper is laid open can be extended by two weeks. Every member of this group of persons is entitled to review the dissertation and the opinions and to submit a written statement, which must be included in the doctoral documentation. The examination office must inform every member of this group of persons that the dissertation has been laid open.

§ 9  
The Doctoral Commission

(1) The doctoral committee shall appoint the doctoral commission for the pending procedure. This can be done at the earliest after the dissertation has been submitted, and must be done at the latest upon receipt of the opinions.

(2) The doctoral commission consists of four members from the Department of Mathematics and Computer Sciences and has the following composition: three university professors and one academic staff member with a doctorate. Alternative, no more than one external professor may be appointed as one member of the group of professors. Other members, particularly external reviewers, can be appointed as advisory members of the doctoral commission, but they cannot vote.

(3) The meetings of the doctoral commission are not open to the public. The decisions must be treated confidentially.

(4) Should a voting member of the commission resign, the doctoral committee shall replace this member accordingly.

(5) Within the context of interdisciplinary doctoral procedures, other departments must be adequately taken into consideration when forming the doctoral commission.

(6) The members of the doctoral commission shall select the chairperson of the doctoral commission.

§ 10  
Dissertation Decisions and Oral Exam Scheduling

(1) At the end of the period during which the dissertation had to be laid out, the doctoral commission shall decide on the acceptance or rejection of the dissertation. If the dissertation is accepted, the following grading system shall be used:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summa cum laude</td>
<td>outstanding</td>
</tr>
<tr>
<td>Magna cum laude</td>
<td>very good</td>
</tr>
<tr>
<td>Cum laude</td>
<td>good</td>
</tr>
<tr>
<td>Rite</td>
<td>sufficient</td>
</tr>
</tbody>
</table>

(2) If the dissertation is rejected, the doctoral commission shall declare the doctorate as not passed, and shall provide its reasons for this decision in a final opinion. The chair of the doctoral committee must inform the doctoral candidate in writing of the decision and state its reasons.

(3) After the dissertation has been accepted, the doctoral commission shall determine the topic of the oral exam presentation under consideration of the suggestion of the doctoral candidate (Section 7, para. 8), and shall inform the doctoral candidate accordingly. In addition, it will schedule the date and time of the oral exam in collaboration with the doctoral candidate. The oral exam should take place during the lecture period. The doctoral commission shall also invite the university to attend. At least two weeks should pass between the communication of the topic and the oral exam. The members of the doctoral committee should attend all oral exams. The period between the receipt of the last opinion and the oral exam should not be longer than two months of lecture period.

(4) If the doctoral candidate declares that he or she does not want to take the oral exam, the doctorate shall be deemed as not passed. The chair of the doctoral committee must inform the doctoral candidate of this decision in writing.

§ 11  
Oral Exam

(1) The purpose of the oral exam is to prove the ability of the doctoral candidate to verbally explain and discuss scientific problems and to defend the dissertation against criticism, particularly objections of the reviewers. He or she should therefore be granted access to the opinions and statements as per Section 5, para. 5 two weeks in advance. The oral exam may be conducted in German or in English.
The oral exam shall take approx. 90 minutes. It begins with a 30 min presentation made by the doctoral candidate, and is followed by approx. 15 minutes of discussion. In the presentation, the doctoral candidate shall present a topic of general interest he or she has chosen (Section 7 para. 8). The presentation is followed by a defense of the dissertation, during which the doctoral candidate presents the results of the dissertation in the form of theses. The candidate shall then answer questions from the doctoral commission about the dissertation; during the following discussion, other attendees may also ask questions.

The chair of the doctoral commission must draft minutes on the proceedings of the oral exam.

Regarding groups pursuant to Section 3, para. 1, No. 7, the oral exam must be conducted jointly with all members of the group; each individual person, however, should be involved in the presentation and the defense just as they would for individual oral exams. Each doctoral candidate's oral exam should take about one hour. If a member of the group is not present without a valid reason or if it must be assumed that he or she will not be available for an extended period of time, the oral exam can be carried out without this person, if the other doctoral candidates agree. A new oral exam date shall be scheduled for the doctoral candidate that could not attend. The other doctoral candidates should attend this oral exam.

Should a doctoral candidate not be present at the oral exam without being able to show an important reason, the exam shall be deemed as not passed. The chair of the doctoral committee must inform the doctoral candidate in writing of the decision and state the reasons for this decision.

(3) If the doctoral candidate has passed the oral exam, the doctoral commission shall grade the overall result of the doctorate. The doctoral commission shall use the grades/distinctions listed under Section 10, para. 1. The distinction “summa cum laude” may only be awarded, if the dissertation and the oral exam were both graded as such.

The doctoral commission will provide its reasons for the grades in a final opinion that summarizes the work of the doctoral candidate in the dissertation and the oral exam and that includes the individual grades.

After having passed the dissertation and the oral exam, the doctoral candidate may, upon request, obtain an interim certificate that must list the topics and the grades of the dissertation and the oral exam as well as the final grade.

The entire doctoral procedure must be treated confidentially, even after its completion. Access to the records shall be granted pursuant to the provisions of the Statutes for General Examination Matters.

Additional Doctoral Subjects

(1) If the doctoral candidate has gained knowledge in additional subjects within the context of his/her research-related education, the candidate must be provided with the opportunity to be tested on this knowledge.

Prior to being admitted to an exam in such an additional subject, the minimum admission criteria must be determined together with the department responsible for that subject. An exam in an additional subject lasts approx. 30 minutes. It must take place after the dissertation has been submitted and prior to and independent of the oral exam.

The doctoral candidate can request the chair of the doctoral committee that the exam grade awarded for an additional subject pursuant to para. 1 is listed on the doctoral certificate. The performance will be assessed according to the respectively valid examination regulations.

New Doctoral Procedure

If the doctoral candidate did not pass the doctorate, he or she may apply for a new doctoral procedure after six months at the earliest. The new dissertation can be submitted after one year at the earliest. This also applies, if a doctorate was not passed at another university or institution entitled to award doctorates.
§ 15
Withdrawal of the Doctoral Application and Discontinuation

(1) The doctoral committee can only approve an application from a doctoral candidate for a withdrawal of the admission to the doctoral procedure, if the dissertation has not yet been submitted (Section 7, para. 1). The procedural steps taken up to that date are no longer considered part of the doctoral procedure.

(2) If more than six years have passed since the candidate was admitted to the doctoral procedure, the doctoral committee may discontinue the procedure after having previously obtained the written approval of the supervisor and having heard the doctoral candidate. The discontinuation notice must include the committee’s reasons. It is issued in writing by the chair of the doctoral committee. This does not, however, preclude a new application for admission to the doctoral procedure.

§ 16
Doctoral Certificate

(1) A doctoral certificate will be issued in German.

(2) It contains the following:

1. The name of Freie Universität Berlin and the Department of Mathematics and Computer Science,
2. The name of the doctor,
3. The doctoral degree that was awarded pursuant to Section 1, para. 1,
4. The title of the dissertation,
5. The doctoral subject,
6. The date of the oral exam, which is considered the date of the doctorate,
7. The final grade of the doctorate pursuant to Section 12, para. 3,
8. The names of the reviewers,
9. The name and the signature of the dean, and
10. The seal/stamp of Freie Universität Berlin.

(3) The doctoral candidate may also submit a request to the chair of the doctoral committee, asking that the grade for the examination in an additional subject be also listed on the doctoral certificate pursuant to Section 13, para. 1. The performance will be assessed according to the respectively valid examination regulations.

(4) The final opinion must be attached to the doctoral certificate.

(5) The dean shall present the doctoral certificate within four weeks upon compliance with the submission provisions pursuant to Section 18. The doctoral certificate entitles its owner to use the doctoral degree as per Section 1, para. 1.

§ 17
Publication of the Dissertation

(1) Unpublished dissertations must be published within one year of the oral exam in an unchanged form or including changes that were approved by the doctoral commission (Section 8, para. 3) and the number of copies listed in Section 18 submitted free of charge to the university library and the dean.

(2) If the doctoral candidate can prove that publication is ensured by a commercial publishing house (Section 17, para 1, No. 1 or 2), the submission period can be extended by one year at the most. If warranted, additional extensions are possible.

(3) The published copies should comply with the form requirements as per Section 7, para. 6, and list the names of the reviewers, and the date of the oral exam. A dissertation to be published by a publishing house must, at a minimum, show that this is a dissertation of Freie Universität Berlin and the year it was submitted.

§ 18
Forms of Publication, Submission Provisions

(1) The following publication formats are allowed for publications:

1. Publication as a monograph by a commercial publishing house, if a minimum circulation of at least 95 copies can be shown,
2. Publication in a journal,
3. Publication by the doctoral candidate in an electronic format, the data format and data carrier of which must be coordinated with the university library, or
4. Publication by the doctoral candidate in the form of a letterpress print or picture print.

(2) If a dissertation is published pursuant to para. 1, No. 1, 2, or 3, 6 copies must be submitted to the university library, and 3 copies to the examination office.

(3) With regard to dissertation publications in letterpress print or picture print carried out by the doctoral candidate (para. 1, No. 4), 95 copies must be provided.

§ 19
Joint Doctorate With Foreign Institutions

(1) Doctoral procedures can be carried out jointly with foreign universities or similar educational institutions, if:
a) The applicant meets the requirements for admission to the doctoral procedure of the Department of Mathematics and Computer Science of Freie Universität Berlin, and

b) The foreign university or equivalent educational institution has the right to grant doctorates in accordance with its national legal regulations, and the respective degree to be awarded would have to be recognized as a doctoral degree within the area of application of the Framework Act for Higher Education.

(2) The departments, faculties, or equivalent institutions must enter into an agreement stipulating how the joint doctoral procedure should, on a case by case basis and generally, be carried out. These agreements apply in addition to the provisions of these rules and regulations. The equivalency with the respectively applicable provisions of these rules and regulations must be guaranteed with regard to requirements and procedures.

§ 20
Appeal

The doctoral candidate is entitled to appeal the result of the doctoral procedure or individual parts of it with the doctoral committee. This intent must be declared in writing within four weeks upon disclosure of the results and submitted to the chair of the doctoral commission. For further details, refer to the Statutes for General Examination Matters.

§ 21
Revocation of the Doctoral Degree

The revocation of the doctoral degree is governed by the legal provisions.

§ 22
Honorary Doctorate

The faculty council can, if requested to do so by the dean or at least three professors of the Department of Mathematics and Computer Science, confer an honorary degree pursuant to Section 1 para. 1 (abbreviated Dr. rer. nat. h. c.) for outstanding scientific work in one of the areas represented by the department. The doctoral committee must appoint a doctoral commission as per Section 9 para. 2 to assess this work and submit an opinion. The decision of the faculty council requires the majority of the members of the faculty council with a doctoral degree. Professors of the Department that are not part of the faculty council must be provided with an opportunity to participate in the voting process.

§ 23
Legal Effectiveness and Interim Regulations

(1) These doctorate rules and regulations shall become effective one day after their publication in the Communications (official register of Freie Universität Berlin). Concurrently, the currently valid doctorate rules and regulations for the Department of Mathematics and Computer Science dated April 17, 1996 shall become invalid (FU Communication 15/1996).

(2) Doctoral procedures that are ongoing at the time these rules and regulations become effective, shall, depending on the preference of the doctoral candidate, be carried out according to these rules and regulations or the former rules and regulations of the Department of Mathematics and Computer Science of Freie Universität Berlin dated April 17, 1996 (FU communication 15/1996). The candidate must make a respective decision by the end of the semester following the legal effectiveness of these rules and regulations. This decision cannot be reversed.