

Please note that this is a non-binding translation of the Doctoral Regulations as of 20 May 2020

Doctoral Regulation for Faculty II – Mathematics and Natural Sciences

of 20 May 2020

The Faculty Board of Faculty II – Mathematics and Natural Sciences adopted the following doctoral regulations in accordance with Section 18 (1) sentence 1 no.1 of the constitution of Technische Universität Berlin in the version published 20 September 2018 (TU Official Gazette (AMBI) no. 19 /2018 p. 182:*)

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Section 1 Scope and Basics

(1) These doctoral regulations apply to the conferral of the academic titles Dr.-Ing. (Doctor of Engineering Sciences) and Dr. rer. nat. (Doctor of Natural Science) at Faculty II – Mathematics and Natural Sciences at Technische Universität Berlin.

(2) The Faculty may present proposals to the Academic Senate for awarding one of the doctoral degrees in subsection 1 honoris causa (h.c.) in recognition of outstanding academic achievement.

(3) The doctoral degrees cited in subsection 1 may be awarded only once per academic chair.

Section 2 Objective and Content of the Doctorate

The doctoral process establishes that the doctoral candidate has the capacity to make an independent contribution to scientific research and development. This is demonstrated through a successful written dissertation and scientific defense.

(2) The dissertation is a scientific treatise written by the doctoral candidate that advances the scientific state of the art in a research area. The focus of the dissertation depends on the doctoral degree: for Dr.-Ing., the focus is on an engineering science, for Dr. rer. nat., it is on a mathematical or natural science. The dissertation shall be written in German or English. With the approval of the faculty board, it may also be written in another language. An abstract of the dissertation must be provided in both German and English, irrespective of which language the dissertation is written in. The subject area must be represented by a full professor or junior professor within the faculty. A prior partial or complete publication of the dissertation is permitted.

(3) The dissertation as a scientific treatise can consist of separate published papers or papers submitted for publication (cumulative Dissertation or dissertation by publication). Such work must follow an internal logic, which must be coherently demonstrated by an overall introduction and concluding discussion. Further details regarding the type and number of contributions are determined by the Faculty.

(4) Prepublication of scientific findings which constitute part of the dissertation or a cumulative dissertation is also possible on the basis of co-authorship. In cases of co-authored work, the candidate has to demonstrate which substantial contribution to the concept, content or methodology of the work they have made.

(5) In the scientific defense, the doctoral candidate should present the methodological approach and the scientific conclusions of the dissertation and thereby demonstrate their ability to assess the problems and findings of the dissertation and understand their significance within the relevant discipline.

Section 3 Admission Requirements

(1) In order to be admitted as doctoral candidate, an applicant must have successfully completed a master's degree at a university or university of applied sciences (Fachhochschule) or a comparable degree (*Diplom, Magister, or Staatsexamen*). Generally, the aforementioned university degrees must have been successfully completed in an engineering field for a Dr.-Ing. and in mathematics or a natural science for a Dr. rer. nat. If a university degree was acquired in a subject area which does not correspond to the doctoral degree, the faculty board may require additional coursework and examinations.

(2) Academically outstanding candidates with a bachelor's degree can be directly admitted to a doctoral degree on the basis of a qualification procedure. They are not required to obtain a further degree as defined in subsection 1 above. Academic aptitude is determined by

1. the successful completion of at least one and up to three admission exams in the subject area of the proposed doctoral research and related fields and one published work, generally as lead author, in a relevant publication with academic quality assurance, or
2. the successful completion of the entry phase of a graduate school or a comparable program. The entry phase must have a minimum duration of two semesters, be recognized by the faculty and be completed by at least one exam.

At least one of the admission exams referred to in sentence 2, no. 1 may not be conducted by the supervisor. The admission exam verifies that the applicant has the required scientific and methodical abilities in the intended field of doctoral studies. The attendance of courses prior to the exam is not required. The relevant faculty board may determine specific regulations regarding the content and form of the admission exam as well

*) Approved by the TU Berlin Executive Board on 04.08.2020

as how it is conducted A failed admission exam cannot be repeated at the same or another faculty of Technische Universität Berlin.

(3) An applicant completing a *Diplom* degree at a university of applied sciences, (Fachhochschule) with an overall grade of “with distinction”, “very good”, or “good”, is required to further demonstrate their academic aptitude to pursue a doctorate. Such proof is provided by the applicant passing at least one and up to three admission exams in the subject area of their intended doctorate and related fields as per subsection 2. Admission exams are to be taken after the candidate has applied for admission as doctoral candidate in accordance with Section 4. The admission examination verifies that the applicant has the required academic skills in the field of their intended doctorate.

(4) If the applicant has completed university studies abroad, the faculty board may accept the equivalence of the university degree with a German university degree as per subsection 1 under consideration of an expert evaluation to be obtained from the relevant department at Technische Universität Berlin. In the event that the faculty board does not accept equivalence, additional studies and examinations may be required or the application rejected.

(5) The additional required qualifications referred to in subsections 1 to 4 must be submitted prior to the application to commence the doctoral procedure.

(6) The faculty board must decline admission as doctoral candidate if the applicant’s thesis or similar work has already been failed in the context of a doctoral procedure at a research university.

Section 4 Application as Doctoral Candidate

The applicant must declare in writing their intent to pursue a doctorate at the selected faculty at the earliest possible date. The application must contain a description of the intended subject of the dissertation, a work schedule, as well as the documentation referred to in Section 5 (1), sentence 3, no. 13; candidates that have completed a *Diplom* at a university of applied sciences (Fachhochschule) must include their *Diplom* thesis, as well as any additional scientific theses. The thesis should be supervised by a faculty full professor, a junior professor or a junior research group leader holding a doctorate. Proof of their agreement to act as supervisor must be provided. If a thesis is not to be supervised by a full professor or junior professor of the faculty, the agreement of a full professor or junior professor of the faculty to act as a reviewer pursuant to Section 6 (4) sentence 1 must be submitted along with the application. Furthermore, the applicant and their supervisor or supervisors shall conclude a supervision agreement in accordance with the current regulations of Technische Universität Berlin. The aforementioned regulations are issued by the committee with responsibility for doctoral regulations at Technische University Berlin. The dean assesses the application and informs the applicant in writing of either their acceptance and possible conditions, or else their rejection in accordance with subsection 3.

(2) In the case of acceptance, the applicant is entitled to reasonable support for completing their thesis from the faculty, within the scope of the available materials and personnel. There is no legal entitlement to a workplace at the University. Once the supervisor has declared their consent, they are obliged to advise the applicant unless they can provide important reasons for terminating their supervision to the faculty board.

(3) The faculty board may reject the application only if:

1. The field or research topic of the intended dissertation is not represented by a full professor of the faculty;
2. The thesis seems not to be feasible within the scope of the

materials and personnel available or due to the subject;

3. The requirements stated in Section 3 are not met.

This rejection must be substantiated in writing to the applicant. Section 11 (4) sentence 1 applies accordingly.

(4) By registering their intent to pursue a doctorate, the doctoral applicant becomes a doctoral candidate. Unless already employed by Technische Universität Berlin, the doctoral candidate is required to enroll at Technische Universität Berlin in accordance with Section 25 (2) BerlHG (Higher Education Act of Berlin).

Section 5 Admission to the Doctoral Procedure

(1) The application for admission to the doctoral procedure must be directed in writing to the faculty. Application for admission is also permissible if the intent to pursue a doctorate has not been previously registered in accordance with Section 4 (1), or if the faculty board has rejected an applicant’s registration.

The application for admission to the doctoral procedure must include:

1. A declaration that the applicant is conversant with the current doctoral regulations at Technische Universität Berlin;
2. Documentation as specified in Section 3;
3. A curriculum vitae;
4. Four printed copies of the dissertation and an electronic version as a PDF file. If the thesis is to be assessed by more than two reviewers, the appropriate number of copies must be provided.
5. Details as to what extent the dissertation or parts of it have already been published, plus a list

of these publications and a copy of each. In the case of co-authored publications, a list of the names of the co-authors and proof of the applicant's own contribution as per Section 2 (4);

6. A statutory declaration to the effect that the dissertation has been written independently, that aids and sources have been cited and, in cases of co-authored works, that the demonstration of the applicant's own contribution is correct in accordance with point 5;
7. A declaration as to whether earlier or concurrently an intent to pursue a doctorate in accordance with Section 4 has been submitted or a doctoral procedure applied for at another university or faculty. If applicable, complete details should be provided concerning the outcome (see also Section 7 (4), sentence 3).

(2) The doctoral applicant may propose the reviewer of the dissertation, whose selection must be justified in writing and submitted together with the application to the doctoral procedure.

(3) The application to the doctoral procedure and all submitted documents will remain with the faculty for up to ten years; thereafter they will be stored in the University Archive.

Section 6 Commencement of the Doctoral Procedure

(1) The dean of the faculty will examine the application for the doctoral procedure and determine whether all required conditions are met. If so, the application to the doctoral procedure will be presented immediately to the faculty board for consultation and decision. If the faculty board rejects the application, the procedure laid out in Section 11 (4) is to be followed.

(2) The members of the faculty board as well as other professors and junior professors who are members of the faculty are entitled to inspect the submitted documents.

(3) If the faculty board approves the application for admission to the doctoral procedure, it will appoint a doctoral committee. This committee consists of a chair and at least two reviewers, one of whom should not be a member of Technische Universität Berlin. Up to two reviewers may also be co-authors. The committee must include at least one reviewer who is not also a co-author.

(4) The chairperson and at least one reviewer of the doctoral committee must be full professors or junior professors of the faculty. A professor appointed as supervisor in accordance with Section 4 (1) will also continue to fulfill the requirements stated in sentence 1 after retirement, as an emeritus professor, or if they change to another university. In such cases, they will continue to be one of the reviewers who is a member of TU Berlin. Professors at the same or another faculty at Technische Universität Berlin or another university or a comparable academic institution outside Germany may also be appointed as reviewers. In certain justified cases, it is also possible to appoint an academic who has completed a doctorate but who is not a university professor.

(5) The dean of the faculty will inform the doctoral candidate of the commencement of the doctoral procedure and the appointees to the doctoral committee.

(6) The dean will immediately inform the applicant if the faculty board rejects their application for admission to the doctoral procedure. This rejection is to be substantiated in writing by the faculty board and include instructions concerning the right to appeal. The dean will also inform the Executive Board of Technische Universität Berlin.

Section 7 Evaluation of the Dissertation

The reviewers will individually and independently assess whether the submitted dissertation fulfills the requirements of a doctorate – in the case of pre-publications, under consideration of the details stated in Section 2 (4). They will produce written assessments with one of the following classifications:

- sehr gut (very good)
- gut (good)
- befriedigend (satisfactory)
- ausreichend (sufficient) or
- nicht ausreichend (insufficient).

(2) Assessments should not be submitted later than three months after the commencement of the doctoral procedure or after submission of an amended version to the dean of the faculty. Copies of assessments will be submitted to the chair of the doctoral committee by the dean. Any delays must be justified to the chair of the doctoral committee.

(3) Should the majority of reviewers assess the dissertation positively, the chair of the doctoral committee will propose the continuation of the doctoral procedure to the dean.

(4) Should the majority of reviewers assess the dissertation negatively, the dissertation is rejected and the doctoral procedure discontinued. The dean of the faculty will issue the doctoral candidate written notification informing them of the discontinuation of the doctoral procedure as per Section 11 (4) sentence 1. A rejected dissertation may not be submitted as a doctoral thesis to another faculty at Technische Universität Berlin.

(5) In the event that exactly half of the reviewers assess the dissertation negatively, the faculty board, in consultation with the doctoral committee and the doctoral candidate, will nominate an additional reviewer, who should be a professor of another university. The continuation or discontinuation of the doctoral procedure will then be decided on majority basis.

Section 8 Scientific Defense

(1) If the doctoral procedure is continued, the dean will arrange with the doctoral committee and the doctoral candidate a date for the scientific defense. The dean will invite the following persons to attend with at least 14 days' notice:

- a) Members of the doctoral committee, additional reviewers and the doctoral candidate;
- b) Members of the faculty board, other professors, junior professors, external lecturers, extraordinary professors or honorary professors as well as teaching and research associates with doctorates who are members of the faculty, and the members of the Executive Board;
- c) Upon receipt of a justified proposal by the doctoral candidate or members of the faculty board: additional scientists who do not have to be members of Technische Universität Berlin.

The dissertation is displayed in the faculty administration for

review by the persons referred to sentence 2 for a period of at least 14 days prior to the scientific defense. Members of the doctoral committee, full professors, and members of the faculty board will have access to the evaluations in accordance with Section 7. The dean may grant access to the evaluations to the persons cited under sentence 1, letter c).

(2) The scientific defense is open to the University public; the chair of the examination board may, upon application from the candidate, admit non-members of Technische Universität to the scientific defense. The scientific defense is usually held in German or English; the chair of the doctoral committee may permit exceptions provided that all members of the doctoral committee are in agreement. The presence of the chair of the doctoral committee and at least one of the reviewers from TU Berlin as well as at least one external reviewer is required throughout the entire defense. A simultaneous defense with several doctoral candidates is not permitted.

(2a) If the candidate or a member of the doctoral committee is unable to attend the scientific defense in person as a consequence of circumstances beyond their control, the chair of the committee may, with the agreement of the dean, agree to their participation via sound and image transmission. This then counts as the person being present. Should the entire doctoral committee be unable to attend the scientific defense in person due to circumstances beyond their control, the chair of the committee may, with the agreement of the candidate and other members of the committee as well as the dean, agree to the scientific defense being conducted by image and sound transmission in the form of an online conference. This is only possible if the requisite technical requirements are provided and if the principle of oral examination, the presence of the University public and the principle of collegiality regarding the discussion and awarding of grades by the doctoral committee can be guaranteed.

(3) The scientific defense consists of a talk on the dissertation lasting normally 30 minutes given by the doctoral candidate and a subsequent discussion with the reviewers regarding the subject area of the dissertation. Thereafter, with the consent of the chair of the doctoral committee, the audience may direct questions to the doctoral candidate on the subject of the dissertation. This discussion normally lasts one hour. The scientific defense lasts at least 90 minutes, but should not exceed 120 minutes.

(4) Immediately after the scientific defense, the doctoral committee will decide in a non-public meeting whether the doctoral candidate has passed the scientific defense with the classification:

sehr gut (very good)
gut (good)
befriedigend (satisfactory) or
ausreichend (sufficient)

or if the candidate has failed the defense. Additionally, the doctoral committee aggregates the decisions of the reviewers into a joint decision of:

sehr gut (very good)
gut (good)
befriedigend (satisfactory) or
ausreichend (sufficient)

If the candidate passes the scientific defense, the doctoral committee will decide if the entire doctorate has been passed with the grade

with distinction (or summa cum laude),
very good (or magna cum laude),
good (or cum laude)

or passed (or rite).

The overall assessment “passed with distinction” may only be awarded if all reviewers unreservedly assess the dissertation as “very good”, and the scientific defense has been unreservedly assessed as “very good” by all members of the doctoral committee.

(5) A written record should be prepared regarding the scientific defense, containing (at least) the following information:

- Place, date and duration of the scientific defense;
- Name of doctoral candidate;
- Title of dissertation;
- Members of the doctoral committee;
- Assessment of the dissertation;
- The topics and the proceedings of the scientific defense;
- Assessment of the scientific defense;
- Overall assessment
- Remarks concerning the publication of the defense and the attendance list;

This record is to be signed by the members of the doctoral committee present.

(6) The chair of the doctoral committee immediately informs the doctoral candidate of the result and issues a preliminary certificate. Minor or stylistic modifications to the dissertation may be agreed between the doctoral candidate and the doctoral committee. The dean will be informed of the overall result of the doctorate and will advise the faculty board thereof.

(7) If the candidate does not pass the scientific defense as per subsection 4, they may within one month of being informed thereof request a repeat of the defense. The repeat of the scientific defense takes place within 12 months of the publication of the assessment. The above subsections apply accordingly. The doctoral procedure will be discontinued if the doctoral candidate does not request a repeat of the scientific defense or if they do not pass the repeated scientific defense. The doctoral candidate is to be informed of the discontinuation of the doctoral procedure as per Section 11 (4).

Section 9 Publication of the Dissertation

(1) Before the doctorate can be awarded to the candidate upon passing the scientific defense, the dissertation must be made accessible to the scientific public in an appropriate manner within twelve months following the scientific defense. This period may be extended in duly justified cases and on application to the faculty.

(2) A dissertation is deemed to have been made accessible to the scientific public in an appropriate manner if the author provides the University Library free of charge a copy of the thesis in the version approved by the doctoral committee for the purpose of dissemination. The University Library determines if the submitted version fulfills the relevant requirements. The doctorate can be submitted in the following formats:

1. One bound and durable copy and an identical electronic version, whose data format and data carrier must conform to the requirements of the University Library, or
2. Fifteen bound and durable copies in letterpress, or
3. In the case of monographs and as long as a commercial publisher agrees to distribute and commits by contract to make the work available on the market for four years, three copies indicated as a dissertation on the copyright

page and stating Technische Universität Berlin as the place of dissertation.

(3) The copies provided to the University Library must include a dissertation title page according to the requirements of the University. A copy of the title page is available at the University Library.

(4) Furthermore, the candidate has to transfer the abstract electronically as per Section 2 (2), sentence 5 to the University Library for the purpose of its dissemination via bibliographic databases.

Section 10 Awarding the Doctorate

The dean completes the doctorate procedure by presenting the doctoral certificate as soon as the doctoral candidate has fulfilled the criteria specified in Section 9.

(2) The bilingual certificate (German/English) states the subject, the overall assessment of the doctoral procedure, the date of the scientific defense, and bears the dated signatures of the president and the dean, as well as the seal of Technische Universität Berlin.

(3) The awarding of the doctoral certificate entitles the doctoral candidate to use the respectively awarded title.

(4) The faculty administration maintains a file of submitted doctoral applications and awarded doctorates.

Section 11 Withdrawal of the Doctoral Application, Suspension of the Doctoral Procedure

(1) The faculty can only comply with a doctoral candidate's request for withdrawal of the doctoral application if no written evaluation has been submitted.

(2) Should the doctoral candidate fail or refuse to comply with a request from the dean with respect to the doctoral procedure without providing acceptable reason to the faculty board, or if the doctoral candidate fails to submit the revised version of a dissertation in the prescribed format without providing good reason within a period of twelve months after a positively assessed scientific defense, the doctoral procedure will be discontinued by decision of the faculty board. This also applies if, after a written evaluation from a reviewer has been submitted, the doctoral candidate states that they do not wish to continue the doctoral procedure.

(3) If it is determined prior to awarding the doctoral certificate that the doctoral candidate has deliberately made scientific misrepresentations, the faculty board will decide, upon providing the doctoral candidate opportunity to comment on these accusations, whether the doctoral procedure should be continued. If there are doubts concerning the validity of the accusations, the procedure will be suspended until clarification.

(4) The dean must issue and substantiate decisions concerning the discontinuation of the doctoral procedure in writing, including an instruction concerning the right to appeal. The Executive Board is to be notified.

Section 12 Joint Doctoral Procedure with Foreign Educational Institutions

(1) In order to foster international cooperation, the faculty may conduct a joint doctoral procedure with foreign universities or comparable educational institutions.

(2) The framework for the joint doctoral procedure shall be established on an individual basis in a contractual agreement stipulating that the provisions of these doctoral regulations apply to the joint doctoral procedure. Any deviation from these doctoral regulations may be incorporated within the contractual

provision in accordance with the following provisions.

(3) It must be ensured that the acquired degree can be held in the country where the foreign university or comparable educational institution with which the contract is to be concluded is located.

(4) The submission of a dissertation and a scientific defense is required for the joint doctorate. In the event that the dissertation and/or the scientific defense are completed in the national language of the foreign university/comparable educational institution, or a language other than German, a written abstract or summary must be provided in German. A significant part of the work on the dissertation must be completed at Technische Universität Berlin.

(5) Apart from the chair of the doctoral committee, each university or comparable educational institution should appoint the same number of reviewers to assess the joint doctorate.

(6) The doctoral documents are retained by the university or comparable educational institution where the oral defense takes place; the other university or comparable educational institution will also receive a copy.

(7) A bilingual doctoral certificate referring to the joint doctoral procedure and stating the doctoral degree to be held in the respective country will be issued by the university or comparable educational institution where the scientific defense took place, and signed and sealed by both universities or comparable educational institutions.

Section 13 Honorary Doctorates

(1) At the request of the faculty, Technische Universität Berlin may, by decision of the Academic Senate, confer the following academic titles in recognition of outstanding academic merit pertaining to one of its areas: Dr.-Ing. E. h. (Honorary Doctor of Engineering Sciences), or Dr. rer. nat. h. c. (Honorary Doctor of Natural Sciences). The recipient of an honorary degree may not be a member of Technische Universität Berlin.

(2) The resolutions of the faculty board require two readings. Both ballots are secret.

(3) The Academic Senate must also decide on the awarding of an honorary doctorate. Details regarding this are governed by the regulations of the Academic Senate.

(4) An additional conferral of an academic honorary degree according to subsection 1 is only possible if a previous conferral was made by another university and for other reasons.

(5) The honorary doctorate is awarded by presenting the certificate, which is signed by the president and the dean, bears the seal of Technische Universität Berlin and states the merits of the doctorate holder.

(6) All German-speaking universities will be notified of the conferral of the degree by the Executive Board of Technische Universität Berlin.

Section 14 Revocation of a Doctorate

(1) The revocation of an academic title occurs pursuant to Section 1 in accordance with the statutory provisions.

(2) The Executive Board of Technische Universität Berlin notifies all German-speaking universities and the member of the Senate of Berlin with responsibility for universities of the revocation.

(3) The aforementioned provisions apply correspondingly to the revocation of honorary doctorates.

Section 15 Transitional Arrangements

Doctoral procedures that were commenced prior to the enactment of these regulations will be concluded in accordance with the regulations that have thus far been in effect. Applicants who had already applied for acceptance as doctoral candidates at the time of the enactment of this regulation may, within a period of two years after the enactment, conclude their doctorate

in accordance with the regulations which were in effect at the time of their application. The choice is to be made irrevocably with the application when commencing the doctoral procedure.

Section 16 Entry into Force/Expiry

(1) These Regulations shall enter into force on the day after their publication in the Official Gazette of Technische Universität Berlin.

(2) Except in the sphere of Section 15, the doctoral regulations for Technische Universität Berlin of 23 October 2006 (AMBl. TU no. 91996), last amendment on 29 November 2000 (AMBl. TU no. 6/2008 of 15 April 2008), amended through the version of 13 January 2010 (AMBl.

TU no. 3/2011 of 14 February 2011) and of 15 January 2014 (AMBl. TU no. 2/2014 of 4 February 2014) for Faculty II – Mathematics and Natural Sciences shall cease to be effective.