

Regulations Governing Doctoral Studies of the Faculty of Georesources and Materials Engineering

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Please note: This publication is an English translation of the Regulations Governing Doctoral Studies. Only the German original of these regulations as published in the Official Announcements of RWTH Aachen University (“Amtliche Bekanntmachungen”) is legally binding.

Based on §§ 2 (4) and 67 (3) of the Higher Education Act of the State of North Rhine-Westphalia (Hochschulgesetz; HG) in the version of the announcement dated September 16, 2014 (Law and Official Gazette of the State of North Rhine-Westphalia p. 547), most recently amended by Article 1 of the Act to Further Amendments to the Higher Education Act and the Art School Act dated November 25, 2021 (Law and Official Gazette of the State of North Rhine-Westphalia p. 1210a) RWTH Aachen University (Rheinisch-Westfälische Technische Hochschule; RWTH) has issued the following regulations of the Faculty of Georesources Engineering and Information Technology:

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I. General

§ 1 Right to Award Doctorates

The Faculty of Georesources and Materials Engineering of RWTH Aachen University has the right to award doctorates.

§ 2 Doctorate (Academic Degree)

- (1) The doctorate establishes the candidate's ability to undertake independent academic work that exceeds the general objective of the Master's degree programs of the Faculty. The ability is determined based on a thesis (dissertation) of high quality demonstrating an advancement of the state of scientific knowledge and an oral examination (defense). The doctoral degree is awarded upon successful completion of doctoral studies.
- (2) The Faculty of Georesources and Materials Engineering awards the degree of Doktorin/Doktor der Ingenieurwissenschaften (Dr.-Ing.) [Doctor of Engineering Sciences] and Doktorin/Doktor der Naturwissenschaften (Dr. rer. nat.) [Doctor of Natural Sciences].

§ 3 Doctoral Degree Requirements

Doctoral degree requirements within the meaning of these regulations are:

- a) the dissertation,
- b) the oral examination (defense),
- c) the publication of the dissertation.

Once these doctoral degree requirements have been met, the doctorate can be declared completed by issuing a doctoral certificate.

§ 4 Dissertation

- (1) The candidate is required to submit an academic thesis (dissertation) that they have written independently in German or English. They may be permitted to write the dissertation in another language by submitting a request to the doctoral committee and as part of a joint doctoral procedure in accordance with § 20. In this case, the doctoral committee may request a certified translation of the binding text. The doctoral committee shall decide on whether to admit a dissertation written in a language other than German or English once the request has been submitted.
- (2) A substantial part of the dissertation must relate to the scientific fields of the Faculty of Georesources and Materials Engineering.

- (3) Cumulative dissertations may only be submitted with the approval of the supervisor. At least three current scientific articles that have appeared in internationally renowned, peer-reviewed journals or have been verifiably accepted for publication can be submitted as a cumulative dissertation. Deviations therefrom are permitted in justified exceptional cases and upon submitting a request to the doctoral committee. The candidate should be the sole or first author of all of these current scientific articles, but must be the sole or first author of at least two articles. The supervisor of the dissertation does not count as a contributing author. If the supervisor is named as the first author or the candidate is not the sole author, the candidate's significant contribution must be explicitly identified and described in the dissertation so that the candidate's ability to undertake independent academic work can be assessed. The research results of the papers should meet the requirements of a doctoral thesis and the publication dates should not be too far apart. The publications should have been written within the term of the supervision agreement and be thematically related to each other. The submitted papers must be prefaced with a general introduction on the state of the relevant research, the research questions pursued, the main results, and the reception of the research contribution by the scientific community.
- (4) The dissertation must have been written under the supervision of a university professor in the sense of § 35 HG, a professor relieved of teaching duties or retired, an adjunct professor, an honorary professor, or a Privatdozent (private lecturer) from the Faculty of Georesources and Materials Engineering. Upon application to the doctoral committee, it is possible to admit an early-career researcher who has obtained individual funding in a prestigious competitive process (e.g. Emmy-Noether program, Junior Principal Investigator, ERC Grant, BMBF Junior Research Group, or leader of a high-profile non-university research group) as the supervisor of the doctoral thesis. If possible, this application shall be submitted by the supervisor prior to the first application for assessment of the admission requirements pursuant to § 12. If approval is granted, it is valid until the end of the supervisor's employment relationship. If the supervisor leaves the University and does not take on a position that grants them the right to serve as a doctoral supervisor, the department head shall serve as the supervisor (or, in case of non-university research institutions, the next-in-line superior with the right to serve as a doctoral supervisor). The supervisor is required to ensure appropriate academic supervision during the doctoral examination process.
- (5) Work submitted for previous qualifications may not be used for the dissertation.
- (6) Excerpts of prepublications on topics related to the dissertation that is currently in progress are only permitted with the consent of the supervisor and may be used in the dissertation in this case.

§ 5

Oral Examination/Defense

The oral examination consists of a freely spoken 15-minute presentation, without using projection media, as well as an examination discussion lasting at least 45 minutes that covers the dissertation as well as topics from the entire field to which the dissertation is related. A deviating regulation can also be contractually agreed upon in a joint doctoral examination process in accordance with § 20.

§ 6

Publication of the Dissertation

The doctoral candidate is required to make their dissertation available in an appropriate manner to the scientific community by way of copying and distribution (see § 19).

§ 7 Doctoral Committee

- (1) The Faculty forms a doctoral committee. This is composed of the dean, the spokespersons for the departments, and a representative of the group of researchers or staff with an advisory vote. The chairperson of the Doctoral Committee is the dean. The doctoral committee may invite guests to its meetings at any time.
- (2) The doctoral committee shall perform the following tasks:
 - a) determining the doctoral requirements and deciding on admission to doctoral studies in accordance with §§ 10 through 12.
 - b) admission to the doctoral examination process in accordance with § 13,
 - c) initiating the doctoral examination process, including appointing the reviewers and the doctorate commission in accordance with § 14
 - d) deciding not to initiate the doctoral examination process in accordance with § 14 (4),
 - e) deciding on special cases during the doctoral examination process and appeals against decisions made by the doctoral commission.

The doctoral committee delegates the ongoing affairs of regular cases in accordance with letters a) through c) to its chairperson. The names of the admitted candidates are presented to the doctoral committee at its next meeting. The handling of rejections, appeals and special cases cannot be delegated.

- (3) The doctoral committee meetings are not public. Its members and guests are bound to confidentiality. A record shall be kept of the doctoral committee meetings. The chairperson informs the Faculty Council of important decisions made by the doctoral committee.
- (4) The doctoral committee has a quorum when more than half of its members with voting rights, including the chairperson, are present. Decisions of the doctoral committee must be made unanimously. If no unanimous decision is reached, the matter is referred to the Faculty Council, The Faculty Council makes decisions with a simple majority.
- (5) The doctoral committee's chairperson shall inform the candidate about any decisions relating to them. in a written notification that includes information on legal remedies.

§ 8 Doctoral Commission

- (1) A doctoral commission is formed to carry out the doctoral examination process. It includes the reviewers and other members, totaling a minimum of three and a maximum of nine individuals in accordance with Paragraphs 2 through 4. A deviating regulation can also be contractually agreed upon in a joint doctoral examination process in accordance with § 20.
- (2) Next to the reviewers, the chairperson of the doctoral committee appoints at least two and at the most seven other members to the doctoral commission according to § 9 (1). For interdisciplinary dissertations, at least one representative of another faculty or university should be included as a member to offer their expertise on a topic that is not covered by the faculty awarding the doctorate. A deviating regulation can also be contractually agreed upon in a joint doctoral examination process in accordance with § 20.
- (3) Every university professor at the Faculty of Georesources and Materials Engineering in the sense of § 35 HG can be nominated as a member of the doctoral commission by the doctoral committee at their request. This application must be received by the Dean's Office no later

than the appeal deadline in accordance with § 15 (2). If the doctoral committee rejects the nomination, the candidate may call in the Faculty Council. The final members of the doctoral commission must be appointed before the decision on the acceptance of the dissertation is made.

- (4) The chairperson of the doctoral committee shall appoint the chairperson of the doctoral commission. This individual must be a university professor of the Faculty of Georesources and Materials Engineering (in the sense of § 35 HG) and may not be among the reviewers. A deviating regulation can also be contractually agreed upon in a joint doctoral examination process in accordance with § 20.
- (5) All members of the doctoral commission shall have voting rights. The doctoral commission makes decisions with a simple majority. In the event of a tie, the chairperson's vote shall decide the matter.
- (6) If a member appointed to the doctoral commission is not able to carry out the doctoral examination process for serious reasons, the doctoral committee shall select a replacement member where necessary. Members cannot withdraw from the doctoral commission unless in the event of illness.

§ 9 Reviewers

- (1) The doctoral committee shall appoint at least two reviewers for the examination of the dissertation. Reviewers are university professors in the sense of § 35 HG, professors relieved of teaching duties or retired, adjunct professors, honorary professors, or Privatdozenten (private lecturers) from the Faculty of Georesources and Materials Engineering. Upon application to the doctoral committee, it is possible to admit a postdoctoral early-career researcher who has obtained individual funding in a prestigious competitive process (cf. § 4 (4)) as supervisor of the doctoral thesis. If there is a relationship of dependency between the first and second reviewers (e.g. due to an employment contract), a third reviewer from another institute must be appointed. Reviewers can also be members of a different faculty or come from another – German or international – university or research institute. For joint doctorates, full-time university professors at universities of applied sciences can also be appointed as reviewers in accordance with the provisions of § 21.
- (2) At least one of the reviewers must be a full-time university professor at the Faculty of Georesources and Materials Engineering in the sense of § 35 HG. Exceptions must be approved by the doctoral committee.
- (3) The supervisor is the first reviewer in accordance with § 4 (4). This right ends five years after transfer to another faculty or another university.
- (4) If the content of the dissertation relates to scientific areas of another faculty, as a rule, in accordance with § 35 HG, one or several university lecturers, professors relieved of teaching duties or retired, adjunct professors, honorary professors, or private lecturers from this faculty should be appointed as reviewers by the doctoral committee; in this case, the dean of the faculty in question is to be notified of the appointment.
- (5) Within the scope of a partnership with RWTH, a professor from a university of applied sciences Aachen can also be appointed as a reviewer. The reviewer must have a scientific qualification roughly equivalent to a habilitation (postdoctoral teaching qualification). The doctoral committee shall decide on whether the prospective reviewer's achievements meet this requirement after obtaining a statement from the reviewer who is a full-time professor at the Faculty of

Georesources and Materials Engineering in the sense of § 35 HG. As part of this joint supervision, the scope and content of subject matter considered suitable preparation for the doctorate are to be determined for the doctoral candidate together with the supervisor of the university of applied sciences, in accordance with § 67 (4) Sentence 1 No. 2 HG.

II. Admission to the Doctoral Examination

§ 10

General Admission Requirements for Graduates from German Universities

- (1) The doctoral examination process can commence if the candidate has obtained
 - a) a degree after relevant university studies with a standard study period of at least eight semesters for which a degree other than “Bachelor” is awarded, or
 - b) a degree after relevant university studies with a standard study period of at least six semesters and subsequent adequate courses in the doctoral subjects that prepare the candidates for the doctorate, or
 - c) a Master’s degree within the meaning of § 61 (2) Sentence 2 HG

and can demonstrate their suitability to undertake the independent scientific work necessary for a doctorate through their academic work and achievements. The request to determine the admission requirements in accordance with § 12 is to be submitted to the faculty as soon as the doctoral candidate has started to work on the dissertation.

- (2) The scope of courses and related assessment criteria considered suitable preparation for the doctorate according to Paragraph 1 Sentence 1 b), including the number and type of certificates required, as well as the academic work and achievements demonstrating the candidate’s suitability to undertake the scientific work necessary for a doctorate, is determined by the doctoral committee after consultation with the candidate. The doctoral committee can delegate the task to the responsible examination committee.
- (3) If a candidate shows exceptional scientific achievements, the doctoral committee may admit the candidate to the doctoral examination process at the request of three university professors of the Faculty of Georesources and Materials Engineering with a majority of two thirds of its members in accordance with the provisions of § 49 (11) HG.
- (4) The prerequisite for the doctorate in engineering (Dr.-Ing.) is a degree in accordance with Paragraph 1 in an engineering course of study. Holders of a degree in mathematics or natural sciences pursuant to paragraph 1 may be admitted to doctoral studies leading to a Dr.-Ing. degree if it is established before the doctoral examination process is initiated that the dissertation is relevant to the engineering sciences and the candidate has sufficient knowledge of engineering. In justified exceptional cases, this also applies to holders of another professional qualification from a university in another subject.
- (5) Prerequisite for a doctorate in science (Dr.rer.nat.) is a degree in accordance with Paragraph 1 in a mathematical/scientific or a geographical course of study. Holders of an engineering degree pursuant to Paragraph 1 may be admitted to doctoral studies leading to a Dr. rer. nat. degree if it is established before the doctoral examination process is initiated that the dissertation is relevant to the field of mathematics, natural sciences, or geography and the candidate has sufficient knowledge of mathematics, the natural sciences, or geography. In justified exceptional cases, this also applies to holders of another professional qualification from a university in another subject.

§ 11

Admission to Doctoral Studies Based on a Degree Awarded by an International University

A general requirement for admission to doctoral studies is a professional qualification or another final examination to complete a relevant scientific course with a standard period of study of at least eight semesters, including a final academic thesis integrated into the course awarded by a university outside Germany if the degree is to be considered

- a) equivalent to corresponding degrees that are awarded at German universities based on inter-governmental agreements,
- b) a general requirement for admission to doctoral studies based on evaluations of the Central Office for Foreign Education at the Standing Conference of the Ministers of Education of the federal states (ständige Konferenz der Kultusminister) or the German Rectors' Conference (Hochschulrektorenkonferenz),
- c) equivalent with a relevant degree that can be awarded at RWTH Aachen University based on agreements with partner universities outside of Germany by RWTH Aachen University.

Within the scope of admission to doctoral studies based on a degree awarded by an international university, the doctoral committee may impose additional educational requirements that are related to the scientific field that is to be addressed in the dissertation. The doctoral committee can delegate the task to the responsible examination board.

§ 12

Application for Assessment of the Admission Requirements

- (1) Every candidate who intends to undertake doctoral studies at the Faculty of Georesources and Materials Engineering shall submit an application for the assessment of whether they meet the admission requirements immediately after receiving the written letter of intent of a university lecturer from the faculty to supervise the dissertation. The application is not the same as the application for admission to the doctoral examination in accordance with § 13.
- (2) The application in Paragraph 1 shall be submitted in writing to the doctoral committee of the Faculty of Georesources and Materials Engineering. The following must be submitted together with the application:
 - a) the pursued academic title,
 - b) the intended topic of the dissertation,
 - c) the original letter of intent of one of the persons listed in § 4 (4) stating their willingness to supervise candidate with the dissertation,
 - d) the candidate's CV in tabular form (signed and dated),
 - e) the certificates and documents required in accordance with §§ 10 and 11 (notarized copies)
 - f) an affidavit on whether the candidate has submitted doctoral applications in the past. The candidate must also state the name of the German or international university or faculty, the result, the time as well as the topic of the dissertation.
 - g) data collection form for statistical purposes (in electronic form)
 - h) a declaration that the candidate accepts these regulations.
- (3) The doctoral committee decides whether to accept or reject a doctoral candidate. Acceptance may be conditional on completing additional requirements or examinations in accordance with

§ 9 (5), 10 (2), and 11. The candidate shall be notified of the acceptance immediately and in writing. They shall receive a written notification of rejection or conditional acceptance, including the reasons for this decision and information on legal remedies.

- (4) After the candidate has been accepted, the doctoral candidate and the first supervisor must enter into a supervision agreement, in accordance with the template of the Faculty of Georesources and Materials Engineering (Annex 2). The first supervisor is required to ensure appropriate academic supervision during the doctoral examination process.
- (5) If the supervision agreement is terminated by the first supervisor, the doctoral committee shall check whether an alternative appropriate supervision agreement is possible. This also applies if the first supervisor transfers to another university and, as a result, the supervision agreement ends.

§ 12a

Data Collection, Processing, and Transfer

In accordance with § 5 of the Act on Statistics for Higher Education (Hochschulstatistikgesetz – HSchStG), universities must collect personal data about those who have been admitted to doctoral studies in accordance with § 12 (3). The personal data of the doctoral candidates are automatically stored by the University and are processed by the IT Center as well as the Central University Administration in order to comply with legal requirements. The University will only transmit the data if this is necessary to comply with its legal duties or duties specified in its statutes. Data transfer to the Statistical Office of the State of North Rhine-Westphalia (IT NRW) concerns the data collection characteristics in accordance with § 3 (1), § 4, and § 5 (2) HSchStG.

III. Doctoral Examination Process

§ 13

Application for Admission to the Doctoral Examination

- (1) The candidate's application for admission to the doctoral examination shall be submitted in writing to the doctoral committee of the Faculty of Georesources and Materials Engineering.
- (2) The application must include:
 - a) the pursued doctoral title,
 - b) the title of the dissertation.

The following documents are to be submitted with the application:

- a) the candidate's current CV in tabular form,
- b) a certificate of good conduct from the Federal Central Register of document type O. If the candidate works in the public or church service, confirmation from the employer that the Certificate of Good Conduct was submitted at the start of employment is sufficient. This must be checked on an individual basis.
- c) a dissertation in accordance with § 4 (1) in A4 format with word-processed text in a bound copy (adhesive binding) as well as one electronic copy,
- d) a current list of publications (and one specimen copy each for cumulative dissertations),
- e) information on the academic supervisor of the dissertation,

- f) an affidavit that the candidate has independently completed the dissertation, that they have indicated any means of support used in the dissertation, and that the printed and electronic versions are identical.
 - g) a written declaration that the candidate has acknowledged and adhered to the Guidelines and Procedures for Safeguarding Good Scientific Practice at RWTH,
 - h) confirmation of completion of a course on Safeguarding Good Scientific Practice at RWTH Aachen University or a corresponding course at another institution. The chair of the doctoral committee shall decide on whether completion of similar courses is recognized or whether any exceptions apply.
 - i) a brief summary of the dissertation in German and English of up to two pages each. A deviating regulation can also be contractually agreed upon in a joint doctoral examination process in accordance with § 20.
- (4) If the dissertation was produced at an institution outside RWTH Aachen University, the candidate must submit a written declaration that the publication of the dissertation does not violate any existing trade secrets.
 - (5) Candidates must submit officially certified copies of certificates. Certified translations of certificates not in English or German are to be included upon request.

§ 14

Initiation of the Doctoral Examination Process

- (1) The doctoral committee initiates the doctoral examination process once a written application for the initiation of the doctoral procedure in accordance with § 12 has been received in full and the reviewers have declared that they are willing to provide an expert opinion. As a rule, the opening must take place no later than at the second meeting of the doctoral committee after receipt of the application in accordance with § 13.
- (2) The reviewers and the doctoral commission are to be appointed upon initiation. The candidate shall be notified of the initiation immediately in writing.
- (3) If the doctoral application and the submitted documents do not meet the requirements (see §§ 10, 11, 12, 13), the doctoral examination process shall not be initiated. If the doctoral committee rejects the initiation of the doctoral examination process, the candidate shall be informed by the doctoral committee's chairperson immediately in writing, stating the reasons for this decision along with information on legal remedies.
- (4) An application submitted to the Faculty of Georesources and Materials Engineering to initiate the doctoral examination process can be withdrawn no later than three months after the announcement of the opening of the doctoral examination process in accordance with paragraph 2.

§ 15

Evaluation of the Dissertation

- (1) The reviewers examine the dissertation and report back to the doctoral committee in separate written expert opinions within three months. They can request that the dissertation either be accepted, rejected, revised, or not even considered if they deem the Faculty not to be the responsible authority. They must furthermore include the reasons justifying their recommendation. An expert opinion supporting the acceptance of the dissertation must include a recommended grade. If a reviewer is not able to prepare their expert opinion within three months, the

doctoral committee may appoint another reviewer within the fourth month. If the doctoral committee cannot convene within this period, the dean can become involved in accordance with § 7 (2) Sentence 2. However, the appointment of new reviewers is not to be considered a special case within the meaning of § 7 (2) Sentence 1 Letter e).

- (2) Once the expert opinions have been received, the dean shall present the dissertation and the expert opinions to the Faculty's professors in the sense of § 35 Higher Education Act (HG), professors relieved of teaching duties or retired, adjunct professors, honorary professors, private lecturers from the faculty, and the members of the Faculty Council who have a doctorate degree to allow them to make a statement or, if necessary, submit a written objection. In addition, the expert opinions shall be provided in electronic form. The dissertation and expert opinions shall be available for review for a period of 10 days. The start of this period is announced within the Faculty together with the planned examination date. The objection period expires at the end of the second working day following the end of the review period.
- (3) If the reviewers unanimously recommend the acceptance of the dissertation and no objection has been made, the dean shall determine that the dissertation is accepted. If the reviewers unanimously recommend the rejection of the dissertation and no objection has been made, the dean shall determine that the dissertation is rejected. In a written notification that includes information on legal remedies.
- (4) If the reviewers disagree on the acceptance of the dissertation or at least one of the reviewers recommends that the dissertation be revised or not considered pursuant to Paragraph 1 and an objection has been submitted within the deadline, the dean shall present the dissertation, together with the expert opinions, comments and objections, to the doctoral commission. The latter shall deliberate on the submission within one month of receipt of the written appeal submitted to the Dean's Office. It can recommend consulting further reviewers. The doctoral commission recommends whether the dissertation is to be accepted, rejected, revised, or not to be considered pursuant to § 16. If the recommendation is made unanimously, the dean shall make the necessary determinations. Non-consideration does not mean that the dissertation has been rejected.
- (5) If a unanimous recommendation of the doctoral commission in accordance with Paragraph 4 cannot be achieved, the dean shall present the dissertation together with the expert opinions, statements, and objections to the doctoral committee. Based on these recommendations, the doctoral committee shall immediately make a decision on the acceptance, rejection, or revision pursuant to § 16 or non-consideration of the dissertation pursuant to Paragraph 4. Acceptance of the dissertation requires the submission of two supporting expert opinions.

§ 16

Revision of the Dissertation

- (1) Based on the decision by the doctoral committee or the doctoral commission in accordance with § 15 (4) and § 15 (5), the dean can ask the candidate to revise the dissertation once within a specific deadline. The conditions for the revision are to be put on record and to be communicated to the doctoral candidate and the supervisor in writing. The deadline can only be extended once in writing at the candidate's request. If the deadline is exceeded, the dean shall determine the dissertation rejected in a written notification that includes information on legal remedies. The doctoral examination process is terminated once the deadline for legal remedies has expired.
- (2) Once the dissertation has been revised within the deadline, it shall be reexamined in accordance with § 15. The expert opinions of the revised version must particularly address the

question of whether the additional requirements in accordance with Paragraph 1 have been adequately met. The revised version of the dissertation may only be rejected if the additional requirements have not been adequately met. The dissertation must also be rejected if there are strong scientific objections to sections that were modified or newly added to the dissertation during the revision.

§ 17 **Oral Examination/Defense**

- (1) Once the dissertation has been accepted, the dean will arrange an oral examination. It will be conducted by the doctoral commission in accordance with paragraph 5.
- (2) The dean shall inform the university professors of the Faculty of Georesources and Materials Engineering, the rector, the other deans, the members of the doctoral commission, and the members of the Faculty Council as well as the candidate of the time and place of the oral examination. The time and place of the oral examination shall be announced on the department's notice boards. A deviating regulation can also be contractually agreed upon in a joint doctoral examination process in accordance with § 20.
- (3) The members of the doctoral committee and all professors at the Faculty have the right to take part in the oral examination as guests. Other guests are only permitted with the consent of the candidate if they are members of RWTH Aachen University who hold a doctorate. Doctoral candidates who have started working on a dissertation topic are to be admitted as audience members, unless the candidate objects to this. Guests are excluded from the deliberation on the exam result and its announcement to the candidate.
- (4) Each candidate shall be examined individually. The oral examination is conducted in German or English. A deviating regulation can also be contractually agreed upon in a joint doctoral examination process in accordance with § 20.
- (5) The oral examination is conducted by at least three examiners. One of them must be the first reviewer and one other reviewer as well as the chair of the doctoral commission. The oral examination consists of a freely spoken 15-minute presentation, without using projection media, as well as an examination discussion lasting at least 45 minutes that covers the dissertation as well as topics from the entire field to which the dissertation is related. A deviating regulation can also be contractually agreed upon in a joint doctoral examination process in accordance with § 20.
- (6) The doctoral commission shall decide on the result immediately after the oral examination.
- (7) If the candidate fails the oral examination, it may only be repeated once, and only at the Faculty of Georesources and Materials Engineering. The candidate can enroll to repeat the examination no earlier than three months but at the latest 18 months later.

§ 18 **Grading of the Doctoral Examination**

The doctoral examination is passed if the written dissertation has been accepted and the oral examination has been passed.

The doctoral examination is not passed if the dissertation is rejected or the candidate fails the repeat oral examination (in accordance with § 17 (7)). The dean shall inform the candidate that the doctoral examination has not been passed, stating the reasons for this. The dean shall inform the candidate that the doctoral examination has not been passed, stating the reasons for this.

If the doctoral examination is not passed, the dissertation cannot be presented again for the purposes of a doctorate.

Candidates shall only be given one final attempt and not before the expiry of one year after the failure has been announced. A new dissertation is to be presented.

Copies of the dissertation (at least one copy) with objections and other annotations shall remain with the Faculty of Georesources and Materials Engineering.

The doctoral commission shall determine an overall grade of the doctoral examination as

"with distinction"	(summa cum laude),
"very good"	(magna cum laude),
"good"	(cum laude) or
"sufficient"	(rite).

(7) The result must be communicated to the applicant immediately.

§ 19

Procedure for Publishing the Dissertation

- (1) Once the candidate has passed the doctoral examination, they shall present the dissertation to the dean for the approval of the version intended for publication. The dean shall issue this approval in agreement with the reviewers once any additional requirements that may have been stipulated are met.
- (2) The Faculty of Georesources and Materials Engineering is entitled to request that the doctoral candidate
 - include a summary of their work of no more than two printed A4 pages and transfer the right to the University to publish this summary or offer it to a publisher or a database, and
 - provide the title, subtitle, and summary in two languages (usually in German and English).
- (3) The doctoral candidate is required to make their dissertation available in an appropriate manner to the scientific community by way of copying and distribution. This happens either by
 - a) submitting 4 (or 5 if there are three reviewers) deposit copies to the Faculty's office and 49 deposit copies to the University Library in the form of a book or photo print, or
 - b) publishing it in a scientific journal; in this case, it is necessary to submit 4 (or 5 if there are three reviewers) deposit copies to the Faculty's office and 14 deposit copies to the University Library; it must also be stated, e.g. on the back of the title page, in which journal the dissertation is published (including the publisher and its location), all deposit copies must include the note "D 82 (Diss. RWTH Aachen University), [indicating the year of the oral examination], or
 - c) distribution in book stores by a commercial publisher with a minimum circulation of 150 copies; in this case it is necessary to submit 4 (or 5 if there are three reviewers) deposit copies to the Faculty's office and 14 deposit copies to the University Library; it must also be stated, e.g. on the back of the title page, which publisher published the dissertation (including the publisher and its location), all deposit copies must include the note "D 82 (Diss. RWTH Aachen University), [indicating the year of the oral examination], or
 - d) submitting an electronic copy to the University Library, the data format and transfer of which is to be agreed with the University Library, together with a deposit copy. A further 3 (or 4 copies if there are three reviewers) deposit copies are to be submitted to the Faculty's

office. An abstract in German and English is required for publication. The doctoral candidate shall transfer the right to publish the electronic version in data networks to the University Library, the DNB (German National Library) in Frankfurt/Leipzig and, if applicable, the German Research Foundation's Special Collection Library and confirms that the electronic version corresponds with the accepted dissertation. The University Library shall check the delivered version to ensure it is legible and meets the specified requirements. The submission of files that do not meet the specified file format and data carrier requirements shall not be considered a publication.

All copies to be submitted must include a dedicated title page with the name (see annex 1) and may include a CV in tabular form as well as the educational background of the author in German and English. They must be printed on age-resistant, wood-free and acid-free paper and permanently bound together. They must also be technically flawless. If it is determined that the copies do not meet these criteria, they shall be rejected. Rejected work shall be considered unpublished; the doctoral degree certificate shall therefore not be issued.

- (4) The dissertation is to be published no later than one year after the oral examination. In justified exceptional cases, the dean may extend the deadline. If the candidate misses the deadline, all rights acquired with the examination shall expire.
- (5) In justified exceptional cases and at the doctoral candidate's request, the dean may freeze the publication of the dissertation for up to one year. The work will be kept in the Dean's Office under lock and key during this time.

§ 20

Joint Doctoral Examination Process

- (1) A doctoral examination process jointly supervised with an international university (partner university) requires entering into an individual cooperation contract for the implementation and supervision of the doctoral project and evaluation and assessment of the candidate's performance.
- (2) The doctoral procedure as part of a joint doctoral examination process covers at least the evaluation of the submitted dissertation in accordance with § 4, an oral defense or oral examination, and the publication of the dissertation.
- (3) After successfully completing the doctoral examination process, the Faculty of Georesources and Materials Engineering shall award an academic degree in accordance with § 2 (2) and the partner university an academic degree in accordance with its applicable regulations. The academic titles of these degrees may not be used concurrently.

§ 21

Cooperative Doctorate

- (1) Candidates can also be accepted as doctoral candidates who conduct research at a university of applied sciences if they are supervised by a university professor in the sense of § 35 HG, a professor relieved of teaching duties or retired, an adjunct professor, an honorary professor or a private lecturer (Privatdozent) of the Faculty of Georesources and Materials Engineering.
- (2) If a candidate conducting research at a university of applied sciences is accepted as a doctoral candidate and they should be enrolled at an institution, they are to be enrolled at RWTH Aachen University.

- (3) Upon admission of a person who conducts research at a university of applied sciences, full-time professors at this university who have a significant research output can also be appointed as reviewers if they can demonstrate achievements equivalent to those required for a habilitation (postdoctoral teaching qualification). The doctoral committee shall decide on whether the prospective reviewer's achievements are equivalent to a habilitation after obtaining a statement from the reviewer who is a full-time university lecturer in the sense of § 35 HG at the Faculty of Georesources and Materials Engineering.

§ 22

Doctoral Degree Certificate

After the dissertation has been published, a doctoral certificate is issued and signed personally by the rector and the dean. The doctoral degree certificate bears the date of submission of the deposit copies to the University Library. The reviewers who recommend acceptance of the dissertation are to be named on the doctoral certificate. The doctoral examination process is completed once the doctoral certificate has been issued. After receiving the doctoral certificate, the candidate has the right to carry the doctor title.

At the doctoral candidate's request, an additional copy of the doctoral certificate can be issued in English if the English title of the dissertation has been provided.

§ 23

Honorary Doctorate and Renewal of the Doctoral Certificate

- (1) Upon request by the Faculty of Georesources and Materials Engineering, the Senate may award the academic degree and title of an honorary doctor of engineering (Dr.-Ing.) or doctor of science (Dr.rer.nat.) honoris causa (h.c.) to individuals who show extraordinary personal, scientific, technical, or artistic performances in a field in which the University specializes. They may not be members or associates of RWTH Aachen University.
- (2) The Faculty may only submit honorary doctorate applications for the doctoral degrees that it is entitled to award. In preparation for this application, the Faculty should obtain at least two external expert opinions. The Faculty Council shall decide on the application to the Senate in two sessions. The application requires the support of two thirds of the members of the doctoral committee in attendance.
- (3) The rector awards the honorary doctorate by presenting a doctoral certificate that commends the merits of the honored individual.
- (4) Doctoral graduates of RWTH who are distinguished for their scientific or practical professional work may be honored with the renewal of the doctoral certificate after 25 or 50 years or on extraordinary occasions. The Faculty Council shall decide on this honor.

IV. Final Provisions

§ 24 Center for Doctoral Studies (CDS)

Every candidate may also complete a program at the Center for Doctoral Studies. For successfully taking part in the program, the candidate shall receive a doctoral supplement from the Center for Doctoral Studies about the work completed there.

§ 25 Revocation of the Doctoral Degree

- (1) The doctoral degree may be revoked
 - a) if it transpires that it was achieved on the basis of false statements regarding significant requirements for admission to doctoral studies,
 - b) if it transpires that it was achieved using deception regarding the doctoral degree requirements,
 - c) if academic misconduct has been determined in relation to the dissertation, or
 - d) if the doctoral graduate has been sentenced to at least one year in prison after being found guilty of a deliberate crime.
- (5) If circumstances come to light that would justify the revocation of the doctoral degree in accordance paragraph 1, the doctoral graduate shall be consulted with regarding the accusations before the doctoral committee makes a decision. If an oral hearing is held, a record of the hearing is to be taken.
- (3) The doctoral committee shall communicate decisions detrimental to the doctoral candidate as well as the reasons for these decisions in writing and with information on legal remedies.
- (4) RWTH Aachen University shall inform all other German universities of the invalidity of the doctoral work or the revocation of the doctoral degree.
- (5) The provisions of paragraphs 2 through 4 shall apply accordingly to the revocation of the degree and the title of an honorary doctor.
- (6) Following a decision in accordance with Paragraph 1, the doctoral certificate shall be revoked or invalidated in another way.

§ 26 Viewing of Examination Records

After completing the oral examination, the candidate may submit a request to view their examination records. The application shall be submitted within a month of the announcement of the examination results. The chairperson of the doctoral committee shall determine the place and time to view the records.

§ 27**Entry Into Force and Transitional Provisions**

- (1) These regulations shall be published in the official announcements of RWTH Aachen University and will enter into force on the day after publication.
- (2) Doctoral candidates who submitted their application for admission to the doctoral examination procedure in accordance with § 10 or § 11 before October 1, 2020, are exempt from the obligation to provide evidence of participation as laid out in § 13 (3) letter h).

Issued based on the resolutions of the Faculty Council of the Faculty of Georesources and Materials Engineering dated April 6, 2022.

It is pointed out that, in accordance with § 12 (5) NRW HG, any claims regarding a violation of procedural or formal requirements of the regulatory or other autonomous rights of the University may no longer be asserted after one year has elapsed since the official publication of this announcement unless:

- 1) the announcement has not been properly published
- 2) the Rectorate has objected, prior to publication, to the decision of the committee adopting the regulations,
- 3) the University has been previously notified about the defect of form or of procedure in a complaint, specifying the infringed legal provision and the fact which gives rise to the defect, or
- 4) the legal consequence of the exclusion of complaints was not pointed out in the public announcement

The Rector
of RWTH
Aachen University

Aachen,
dated

July 28, 2022

sgd. Rüdiger

Univ.-Prof. Dr. rer. nat. Dr. h. c. mult. Rüdiger

Annex 1 Title Page/ First Page Deposit Copy

Title

Dissertation

Accepted by

The Faculty of Georesources and Materials Engineering –
RWTH Aachen University

to obtain the academic degree of

**Doktor der Ingenieurwissenschaften/Doktor der Naturwissenschaften
Doctor of Engineering/Doctor of Science**

Presented by

Academic degree First name Last Name ame, Academic degree
(Academic degree may be placed before or after the name, depending on the type of degree)

**Reviewers: Univ.-Prof. Dr.-Ing./Dr.rer. nat. Mustermann
Univ.-Prof. Dr.-Ing./Dr.rer. nat. Musterfrau**

Date of the oral examination: DD.MM.YYYY

(Intended for electronic publication only):
This doctoral dissertation is available online on the website of the University Library.

Please note: there are no specific formatting instructions for doctoral dissertations

Appendix 2:

Supervision Agreement
(Template of the Faculty of Georesources and Materials Engineering –
to be kept by the first supervisor)

RWTH Aachen is a leading university of technology committed to scientific research excellence, and we see it as our duty to support our early-career researchers with their doctoral research projects and guide them to fully benefit from our scientific environment. One major goal is to ensure a trusting collaboration of a high academic standard between doctoral candidates and their supervisors. To achieve this goal, the doctoral candidate and his or her supervisor conclude the present Supervision Agreement. The Regulations Governing Doctoral Studies of the Faculty of Georesources and Materials Engineering and the Principles for Securing Good Scientific Practice of RWTH Aachen University in the currently valid version form the basis for the agreement.

The Supervision Agreement does not confer any right to complete a doctoral thesis and examination, but regulates the rights and obligations of the doctoral candidate and their supervisor.

Between

_____ (Doctoral Candidate),

_____ (First Supervisor),

the following agreements are made:

1. Subject Area of the Doctoral Thesis

The doctoral candidate shall write up a doctoral thesis as an independent scientific work in the field of:

_____.

Before starting to work on the dissertation, doctoral candidates must be accepted by the doctoral committee of the Faculty of Georesources and Materials Engineering.

Date of acceptance: _____

2. Objectives and Work Plan

The supervision agreement is valid from _____ to _____

The aim of the doctoral project is to create an independent scientific thesis in the above named subject area which delivers original contributions to research.

Typically, a doctoral project has the following stages:

- Preparatory phase: the candidate reviews the relevant literature and acquires the required skills.
- Advanced-level phase: the candidate identifies research objectives which have not as yet been addressed, but which can be successfully achieved within the doctoral project and published as contributions to research.
- Development and publication phase (for example, the candidate publishes first results and/or presents them at conferences)
- Final phase: Writing the dissertation and preparation for the oral examination.

The phases may overlap and their duration depends on the skills of, and the time invested by, the doctoral candidate. The supervision agreement is only valid for the above period unless the parties mutually agree to an extension.

3. Supervision of the Doctoral Thesis

a. Responsibilities of the first supervisor

The first supervisor advises and supports the doctoral candidate in their independent research work by

- introducing the candidate to the subject area and the relevant academic environment
- providing advice on how to procure the relevant literature and research equipment/materials
- giving recommendations on how to formulate and limit the topic and research question,
- discussing and evaluating hypotheses and methodology,
- discussing and evaluating results,
- supporting the candidate in participating in national and international scientific conferences, as far as the budget allows
- making it possible for the candidate to gain practical experience, if needed
- advising the candidate on the disposition and presentation (structure, style) of the thesis, also to facilitate completion in a timely manner
- advising with regard to more general qualifications (transferable skills) and personal development

(6) Compatibility between research work and family life is to be taken into account.

(7) If a second supervisor has been appointed, these responsibilities may be shared among both supervisors.

b. Responsibilities of the doctoral candidate

- Doctoral candidates commit themselves to maintaining an effective working relationship with their supervisor and make use of the supervision support as outlined in section 3a.

This is facilitated by keeping in close contact with the supervisor and keeping committed to focused, independent academic work.

- Upon request, at any time, candidates shall provide the first supervisor and the Dean's Office with information about the status and progress of their dissertation. Candidates shall also provide information on the completion of qualification measures required as part of the doctoral examination process.
- As a rule, candidates submit at least one contribution to a peer-reviewed journal or to peer-reviewed proceedings of an international conference.

4. Workplace and Working Conditions

Should the doctorate be carried out as part of an employment relationship at RWTH or a scholarship, the first supervisor shall ensure appropriate working conditions.

5. Conflicts and Termination of the Supervision Agreement

In the event of conflicts that cannot be resolved between the parties, the first supervisor or the doctoral candidate may request the involvement of the faculty ombudsperson who seeks to amicably resolve the conflicts.

Furthermore, in cases of conflict, the doctoral candidate has the opportunity in addition to involve the ombudsperson for academic staff. Should the candidate want to withdraw from the doctoral project, they can terminate the supervision relationship at any time without providing any reasons. The Supervision Agreement can also be terminated at any time by mutual consent.

In the event that the candidate and the first supervisor disagree in their assessment of whether the candidate is capable of completing the doctoral project, the supervisor will contact the ombudsperson of the Faculty. If, after involvement of the ombudsperson and having granted the candidate a further period of time to continue working on the thesis, the supervisor reconfirms their initial assessment, the supervision agreement can be terminated.

Date and signatures:

_____ (Date, Doctoral Candidate),

_____ (Date, First Supervisor)