



Translation of the

**Master's degree examination regulations
for the degree Programme 'Computational Engineering'
at Ruhr-Universität Bochum**

of 28th September 2015

last updated with the amendment record of 21th April 2016 (AB. 1147)

The English translation exclusively serves informational purposes.
Solely the German version is binding.

Reading version
Master's degree examination regulations for the degree programme
'Computational Engineering'
at Ruhr-Universität Bochum
of 28th September 2015

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Based on sections 2 para. 4, 64 of the law on universities in the state of North Rhine-Westphalia (University Law - HG) of 16th September 2014 (GV. NRW. S. 547) Ruhr-Universität Bochum has issued the following examination regulations:

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I. General information

1 Aim of the programme

- (1) The master's examination forms the academic professional qualification for the programme Computational Engineering at Ruhr-Universität Bochum.
- (2) The aim of the master's programme is to impart knowledge in the field of computational engineering in order to independently and responsibly undertake complex engineering activities. The master's course thus leads to a professional qualification that is required for involvement in research and development with managerial responsibility. It also imparts the necessary knowledge of academic work at a doctorate level.
- (3) The master's examination should ascertain whether the candidate has acquired well-founded knowledge and the ability to independently apply challenging scientific methods. The students should be able to critically classify the academic knowledge and undertake responsible, interdisciplinary thinking and acting, and should be able to analyse complex problems relating to computational engineering and develop solutions.

2 Admission to the programme

- (1) Applicants can be admitted to the Master's programme if they
 - a) have a bachelor's degree in civil engineering, mechanical engineering or a related engineering discipline as well as mathematics or a comparable subject from a university in the jurisdiction of the German Basic Law following studies lasting at least six semesters (three years of study), or
 - b) have a bachelor's degree in civil engineering, mechanical engineering or a related engineering discipline as well as mathematics or a comparable subject from a university outside the jurisdiction of the German Basic Law following studies lasting at least six semesters (three years of study),

if the bachelor's examination was completed with an overall result of at least 75% and the equivalence or comparability of the degrees is ascertained by the examination committee.

Applicants who did not complete their first degree program in English or whose first language is not English have to furnish proof of sufficient English language skills. The following certificates are accepted:

- TOEFL (Test of English as a Foreign Language): the total score to be achieved must be at least:
a total score of 550 points for paper-based tests/a score of 215 points for computer-based tests/ a score of 79 points for internet-based tests.
 - IELTS (International English Language Testing System) with a minimum overall band score of 6.0.
 - In exceptional cases, further equivalent certificates may be accepted by the examination committee.
- (2) Those who have finally not passed the bachelor's, master's, pre-Diplom or Diplom examination in the subject area "Computational Engineering" or a related subject area at a university cannot be admitted to the degree programme.
 - (3) The start of the programme is usually the winter semester.

- (4) Before commencing the master's degree, guidance concerning the selection of subjects and the structure of the master's course should be provided.
- (5) The decision on whether the entrance requirements pursuant to paragraph 1 to 3 are met, shall be/is made by the examination committee/board.

3 Standard period of study and scope of programme

- (1) The standard period of study until the master's certificate is achieved totals four semesters or two years of study.
- (2) The course is worth a total of 120 credit points (CPs). One credit point corresponds to an average workload of 30 hours.

4 University degree and professional title

If the master's examination has been passed, the Faculty of Civil and Environmental Engineering at Ruhr-Universität Bochum awards the degree 'Master of Science', abbreviated to 'M.Sc.'. According to the applicable German engineering laws, the graduate is entitled to bear the protected professional title of 'engineer'. The degree is equivalent to the university degree 'Diplom-Ingenieur'.

5 Modules

- (1) The programme has a modular structure.
- (2) One module can consist of several units of instruction.
- (3) Every module is completed with a module examination. The module examination can be comprised of several examination components.

6 Examination components

- (1) An examination component or a preparatory assessment can be provided in the form of a test, an oral examination, by completing study-related tasks, a semester paper, a project, with a seminar contribution, a practical, or a colloquium contribution. The completion of examination components or preparatory assessments can be distributed across several dates in the semester.
- (2) In a test, it should be demonstrated that tasks from the field of the unit of instruction to which the test relates can be completed properly in a limited time and with limited resources and suitable solutions can be found. The duration of a test is between one and four hours and is determined by the examination committee.
- (3) In an oral examination, the candidate should demonstrate that he/she possesses sufficient knowledge in the examination field, recognises connections and can categorise specific problems in these connections. Oral examinations should last from 15 to a maximum of 45 minutes per candidate. They are completed in front of two examiners or in front of one examiner in the presence of a knowledgeable observer as an individual examination or group examination with up to four students. Before determining the assessment, the examiner must listen to the observer, if applicable. The primary subjects and results of the oral examination are to be recorded in a protocol. The documents and diagrams produced during the oral examination form part of the protocol.

- (4) Study-related tasks (e.g. assignments, semester papers or weekly tasks) take place in parallel to the unit of instruction in the same semester. The components can be distributed across several dates in the semester and be provided in writing or orally. The assessment of the components by the student is undertaken by the leader of the unit of instruction. Group components can also be permitted by the leader of the unit of instruction if an individual assessment of the proportion by each group member is possible.
- (5) A project (Modul: Case Study) represents the independent handling of a set topic. Group components can also be permitted by the leader of the unit of instruction if an individual assessment of the proportion by each group member is possible. The components to be provided is to be defined by the leader of the unit of instruction at the start of the unit of instruction and assessed individually at the end of the unit of instruction.
- (6) Seminar contributions are components that are provided on a specified general topic by a participant in the form of a speech and, if applicable, an explanatory graphic presentation in front of the group of participants in the seminar and assessed by the seminar leader. The examination component for a seminar has been provided if the student has given a speech and participated in the discussion on the seminar contributions on the previously determined number of individual dates. The seminar is not passed if the student has not participated on the previously determined number of individual dates and has not taken the opportunity or has not successfully taken the opportunity to catch up on the missed individual dates. More information on compulsory attendance is contained in the module handbook in the respective current version.
- (7) Practicals are components during which experiments are undertaken on specified topics by a participant and assessed by the practical supervisor. The experiment can be conducted in groups. The examination component for a practical has been provided if the student has successfully participated on the previously determined number of individual dates relating to the respective unit of instruction. This is the case if, in the event of a practical, the conducting, reporting and assessment of experiments have taken place. The practical is not passed if the student has not successfully participated on the previously determined number of individual dates and has not taken the opportunity or has not successfully taken the opportunity to catch up on the missed individual dates. More information on compulsory attendance is contained in the module handbook in the respective current version.
- (8) Colloquium lectures are components in which students present the content and most important results of a specialised work (e.g. their final paper) to an expert audience. The prerequisite for one's own colloquium lecture is evidence of attending at least five colloquium lectures by other students. Colloquiums are open to the faculty. More information on compulsory attendance is contained in the module handbook in the respective current version.
- (9) The nature, scope and assessment (graded/ungraded) of the examination components and preparatory assessments are part of the module handbook. The module handbook in the respective current version is available on the Internet.
- (10) For examination components and preparatory assessments, the use of multiple-choice procedures is permitted in coordination with the examination committee. In multiple-choice procedures, there are specified possible answers with one or more correct solutions. The marking of individual incorrect answers leads to the answer being assessed as incorrect overall.

- (11) The form of module examination and the enrolment procedures including the deadlines are announced at the start of the first unit of instruction of the module by the leader of the unit of instruction. How the individual assessments of the components of the examination results are incorporated into the overall assessment is also announced.
- (12) In every year of study, the module examinations (in particular tests and oral examinations) are offered on two regular dates. For examination components that accompany lectures (e.g. practicals, seminars), separate regulations can be made by the examination committee. The examination committee can also determine the offering of additional examination dates.
- (13) The examination dates for a semester are determined at the latest at the start of the semester by the examination committee.

7 Registration and de-registration of examination components and compensation for disadvantages

- (1) The students have to register independently for all examination components and the master's thesis. The deadlines for independent examination registration are determined and published at the start of the semester by the examination committee.
- (2) The independent registration for examinations for compulsory modules according to the module list in Appendix 1 must take place at the latest in the 2nd subject semester for the compulsory modules of the 1st semester, at the latest. Otherwise, the registration will take place automatically in the 2nd subject semester. The independent registration for examinations for compulsory modules according to the module list in appendix 1 must take place at the latest in the 3rd subject semester for the compulsory modules of the 2nd semester, at the latest. Otherwise, the registration will take place automatically in the 3rd subject semester.
- (3) If, deviating from section 6 para. 12, an additional examination date is offered with the regular examination dates, the registration is to be undertaken independently by the students. Participation is considered an examination attempt.
- (4) Registration for a module examination with preparatory assessments is only permitted if the preparatory assessments documented in the respective current version of the module handbook are completed successfully.
- (5) If a module examination for a compulsory module is not passed, the registration for the repeat examination on the next possible regular date takes place automatically.
- (6) If the student does not participate in a registered examination without a valid reason, this examination is assessed as 5.0 ("fail"), where the student has not de-registered from the examination within the deadline.
- (7) Every module examination can be de-registered twice. The de-registration period ends fourteen days before the respective examination date. For the compulsory modules indicated in the module list (Appendix 1), the registration for the next possible regular date takes place automatically for de-registered examinations.
- (8) If non-participation in an examination is justified by illness, evidence of this is to be provided in a medical certificate, which confirms the inability to sit the examination at the time of the examination. Medical certificates are to be submitted to the examination office immediately after the corresponding examination, although at the latest one week after the examination date. Furthermore, the examination committee can, in justified cases of doubt, determine that the submission of a certificate from a

medical officer of Ruhr-Universität is required. If the examination committee acknowledges the reasons for the absence, the respective examination is not included in the maximum number of module examination attempts.

- (9) If a candidate demonstrates in a medical certificate that he/she is unable to complete examination components in whole or in part in the provided form due to prolonged or continuous physical or mental disability, the chair of the examination committee permits the candidate to provide equivalent achievements in another form.
- (10) Statutory maternity leave, periods of parental leave and periods of absence due to the care and raising of children as defined by section 25 para. 5 of the Federal Training Assistance Act (Bundesausbildungsförderungsgesetz) and due to the care of the spouse, the registered civil partner or individuals related to the student in a straight line of descent or first-degree relatives related by marriage are to be taken into account.
- (11) The automatic registration for examination components or registration for the master's thesis or their repeating is suspended on request
- a) For the care and raising of underage children as defined by section 25 paragraph 5 of the Federal Training Assistance Act by three semesters per child,
 - b) For involvement as an elected representative in institutions of the university, the student body, the departmental student committees or the student unions by a total of up to four semesters,
 - c) For the holding of the office of Equal Opportunities Officer by up to a maximum of four semesters,
 - d) By the time of the study-extending effects of a disability or serious illness and
 - e) By up to three semesters for the time in which the student is responsible for close relatives with care or support needs.

8 Assessment of examination components and announcement of results

- (1) The assessment of graded examination components takes place using the third marking system. The following grades are to be used:

Numerical grade	Mark description	
1	Very good	Outstanding performance.
2	Good	Performance that is significantly above the average requirements.
3	Satisfactory	Performance that corresponds to the average requirements.
4	Sufficient	Performance that is sufficient to meet the requirements, despite shortcomings.
5	Fail	Performance that is no longer sufficient to meet the requirements due to significant shortcomings.

Table 1: Grading scheme

By reducing or increasing the individual grades by 0.3, intermediate values can be formed to provide a differentiated assessment of the examination results. The grades 4.3, 4.7, and 5.3 are excluded here.

- (2) The assessment of ungraded examination components takes place using “passed” or “not passed”.
- (3) The result of a test should usually be announced to the candidate at the latest four weeks after the test date while observing data protection regulations. The candidate is given the opportunity to view the result. The time, location and periods of viewing are announced by the teacher.
- (4) The assessment result of an oral examination is to be announced to the candidate on the day of the oral examination.
- (5) The assessment results of achievements provided in another form are announced by the leader of the respective unit of instruction in a suitable form at the latest four weeks after the provision of the last component.

9 Assessment of modules

- (1) A module examination is completed if all assessments of the associated examination components exist in accordance with section 8.
- (2) The grading of the module examination is undertaken once the module examination is completed. A weighted average assessment (arithmetic mean weighted with CP) of the grades for the individual examination components of the module is undertaken. Decimal values are to one decimal place.
- (3) If the module grade is calculated in accordance with para. 2, the grade description is:

-	with an assessment of	0.7 to 1.5	sehr gut	very good
-	with an assessment of	1.6 to 2.5	gut	good
-	with an assessment of	2.6 to 3.5	befriedigend	satisfactory
-	with an assessment of	3.6 to 4.0	ausreichend	sufficient
-	with an assessment of over	4.0	nicht ausreichend	fail
- (4) For modules that only consist of ungraded examination components, the assessment “passed” or “not passed” is awarded.
- (5) A test exclusively with multiple-choice tasks is considered passed if at least 60% of the questions are answered correctly or at least 60% of the overall possible points were achieved. The allocation of negative points is not permitted.

If the candidate has correctly answered the minimum number of tasks and has thus passed the examination, the grade is as follows:

- | | | |
|---|--------------------|------------------------------------|
| - | “very good” (0.7), | if at least 98%, |
| - | “very good” (1.0), | if at least 94% but less than 98%, |
| - | “very good” (1.3), | if at least 90% but less than 94%, |
| - | “good” (1.7), | if at least 86% but less than 90%, |
| - | “good” (2.0), | if at least 82% but less than 86%, |
| - | “good” (2.3), | if at least 78% but less than 82%, |

- “satisfactory” (2.7), if at least 74% but less than 78%,
- “satisfactory” (3.0), if at least 71% but less than 74%,
- “satisfactory” (3.3), if at least 67% but less than 71%,
- “sufficient” (3.7), if at least 63% but less than 67%,
- “sufficient” (4.0), if at least 60% but less than 63%

of the tasks have been answered correctly or the points have been achieved. If the student does not achieve the necessary number of points, the grade is “fail” (5.0).

- (6) If a test is comprised both of multiple-choice and other tasks, the multiple-choice tasks are assessed in accordance with paragraph 5. The remaining tasks are assessed according to their standard procedure. The grade is calculated from the weighted results of both parts of the task. The weighting takes place according to the proportion of task types in the test.
- (7) A module examination is successfully completed
 - a) if an average assessment of at least 4.0 (“sufficient”) was achieved in a module that only consists of graded examination components;
 - b) if all examination components have been passed in a module that only consists of ungraded examination components;
 - c) if an average assessment of at least 4.0 (“sufficient”) was achieved in the graded examination components and all ungraded examination components have been passed in a module that consists of both graded and ungraded examination components.
- (8) Grading in accordance with the ECTS grading scale is limited to the overall grade of the master's examination.

10 Retaking of examinations and definitive failure

- (1) A module examination that is not passed can be repeated. A maximum of three examination attempts are permitted. This does not apply to the master’s thesis (see para. 2). If a module examination is also not passed after three examination attempts (two resits), the module examination is considered finally not passed. If a module examination is finally not passed, the master's examination is finally not passed.
- (2) The master’s thesis can be repeated once due to insufficient performance. The repeat must take place at the latest in the semester following the failure while taking into account section 7 para. 11. If the repeat is also assessed as “fail” (5,0), this examination is finally not passed. A second repeat is excluded.
- (3) The candidate is provided with written notification of the final failure of the master's examination. This is provided with instructions on the right to appeal.
- (4) It is generally not permitted to repeat a passed module examination. Upon request, the examination committee can grant students a one-time improvement attempt for a maximum of three passed module examinations. The best result counts.
- (5) In the event of failing a written repeat test, an oral supplementary examination in accordance with section 6 para. 3 is offered. This does only apply to the second examination attempt. If the oral supplementary examination is passed, the overall grade of “sufficient” (4.0) is awarded for the corresponding examination attempt. The examination committee decides on the offer of oral supplementary examinations at the start of the examination year.

11 Examination committee

- (1) The Faculty of Civil and Environmental Engineering forms an examination committee for the organisation of examinations and the tasks assigned by these examination regulations. The examination committee consists of the chair, his/her deputy and five other members, who are elected, divided by group, by the faculty council of the Faculty of Civil and Environmental Engineering. The chair, the deputy and two further members are elected from the group of university lecturers, one member from the group of research assistants, and two members from the group of students. Correspondingly, representatives are elected for the members of the examination committee, with the exception of the chair and his/her deputy. The term of office for the chair and his/her deputy and the members of the group of university lecturers is three years. The term of office for the other members is one year. Re-election is permitted.
- (2) The examination committee is an authority as defined by the administrative procedural law.
- (3) The examination committee assures that the provisions of the examination regulations are observed and ensures the proper conducting of the examinations. In particular, it is responsible for the decision regarding objections to decisions made in examination proceedings. The examination committee reports regularly to the faculty council for the Faculty of Civil and Environmental Engineering. It provides suggestions to reform the examination regulations. The examination committee can transfer the completion of its tasks in all normal cases to the chair. This does not apply to decisions regarding objections.
- (4) The examination committee has a quorum if, besides the chair or his/her representative, two further university lecturers and at least one further member who is eligible to vote are in attendance. It decides with a simple majority. In the event of a tied vote, the chair has the casting vote. The student members of the examination committee are not involved in the assessment and crediting of credits and examinations.
- (5) The members of the examination committee have the right to attend the fulfilment of examination components in justified cases.
- (6) The examination committee can maintain a database to organise the examination matters as part of the statutory security provisions.
- (7) The meetings of the examination committee are not public. They usually take place once a semester. The members of the examination committee and their deputies are subject to official confidentiality. If they are not in the public service, they are to be bound by secrecy by the chair of the examination committee. Written minutes are to be produced of the discussions of the examination committee.
- (8) The examination office is on hand to complete regular tasks for the examination committee and its chair.

12 Examiners and observers

- (1) The examination committee appoints the examiners and observers. It can transfer the appointment to the chair. Only those who have at least a corresponding master's degree or a comparable qualification and, where no mandatory reasons require a deviation, exercise or have exercised independent teaching activities in the subject area to which the examination relates can be appointed as examiners. In general,

the examiners are identical to the leading teacher for the respective unit of instruction. Only those who have a corresponding master's degree or a comparable qualification can be appointed as observers.

- (2) The examiners are independent in their examination activities.
- (3) If the examiners, the observer and the persons involved in the examinations are not in the public service, they are bound by secrecy by the chair of the examination committee or by the deputy.

13 Crediting and recognition of study periods, credits and examination components

- (1) Examination components that have been completed in the same or comparable degree programme at other state or state-recognised universities, at state or state-recognised cooperative universities are to be included on request if no major differences can be demonstrated, identified and justified. This also applies on request to achievements at universities outside the jurisdiction of the German Basic Law. Upon request, the university can take other knowledge and qualifications into account on the basis of the submitted documents.
- (2) Major differences exist in particular if the acquired skills do not correspond to the requirements of the master's degree programme Computational Engineering. No schematic comparison but rather an overall view and overall assessment are to be conducted here. The equivalence agreements and arrangements approved by the conference of ministers of education (Kultusministerkonferenz) as part of the university partnership are to be taken into account for the recognition or crediting of study times, credits and examination components achieved outside the jurisdiction of the German Basic Law. In the event of doubts, the International Office and the Central Office for Foreign Education Systems can be consulted in all other cases.
- (3) The examination committee is responsible for crediting or recognition in accordance with paragraphs 1 and 2. Before ascertaining whether major differences exist, an expert representative should generally be heard. The student is to submit the documents required for crediting. Following submission of the complete documents, a notice is issued within 6 weeks, which is to be provided with instructions on the right to appeal. If the recognition desired based on an application as defined by paragraph 1 is unsuccessful, the person submitting the application can request a review of the decision by the rectorate.
- (4) If credits or examination components are credited, the grades – where the grading system is comparable – are to be adopted and included in the calculation of the overall grade. If the grading systems are not comparable, the note “passed” is adopted. This crediting is indicated in the diploma and the diploma supplement.
- (5) If the prerequisites of paragraphs 1 and 2 are met, there is a right to crediting and recognition.
- (6) If the student has changed university and subject, the recognition of final projects is fundamentally excluded.

14 Absence, attempt to deceive and infringement of regulations

- (1) If the candidate attempts to influence the result of an examination component through deception, the respective examination component is to be assessed as 5.0 (“fail”) or “not passed”. The statement goes on record by the respective examiner or

by the supervisor. The assessment is undertaken by the examination committee. In the event of multiple or other serious attempts to deceive, the candidate can be excluded from participating in further examinations or exmatriculated.

- (2) A candidate who disrupts the due process for examination components that are to be provided can generally be excluded from the continuation of examination components by the respective examiner or observer following a warning. In this case, the respective examination is assessed as 5.0 ("fail") or "not passed". The reasons for the exclusion are to go on record. In serious cases, the examination committee can exclude the candidate from further examinations.
- (3) If students cannot abide by provisions of these examination regulations for good reason, the claimed reasons are to be immediately reported and demonstrated in writing at the examination office.
- (4) The submission of plagiarism for projects, study-related tasks or the master's thesis is considered an attempt to deceive in accordance with para. 1.
- (5) Negative decisions in accordance with para. 1 to 4 are to be reported to the candidate immediately in writing, justified, and provided with instructions on the right to appeal.

II. Master's examination

15 Admission

- (1) Those who are admitted at Ruhr-Universität Bochum for the master's degree programme Computational Engineering in accordance with section 48 HG or who are admitted as a visiting student in accordance with section 52 para. 2 HG can be admitted for a module examination for the master's degree and the master's thesis.
- (2) The registration for an examination is only valid if the bachelor's diploma and a written declaration section 2 para. 5 are submitted to the examination office.
- (3) Admission to the master's thesis is only given to students who have successfully completed modules with a workload of at least 70 CPs, whereby only one compulsory module must not have been passed yet.

16 Nature and scope of the master's examination

- (1) The master's examination is comprised of the achievements for the modules and the master's thesis in accordance with Appendix 1 worth a total of 120 CPs. The master's examination consists of the modules of the compulsory course (39 CPs), of the compulsory optional course (35 CPs), of the optional course (16 CPs) and the master's thesis (30 CPs). No separate final examination takes place.
- (2) The module handbook specifies the units of instruction assigned for every module and is available on the Internet.
- (3) The student can undertake an examination in subjects in addition to those specified before the passing of the master's examination. Results from these additional subjects are not taken into account in the calculation of the overall grade. They are listed in the transcript of records.

17 Master's thesis

- (1) The master's thesis is a written examination paper and should be completed in the 4th subject semester. It should show that the candidate is able to independently handle a challenging problem relating to computational engineering within a specified time using scientific methods. The master's thesis includes a specialist lecture, in which the candidate presents the most important results to an expert audience. The specialist lecture is to be included in the assessment of the master's thesis.
- (2) The master's thesis may be issued and supervised by any habilitated or appointed or designated lecturer of the master's programme Computational Engineering. It can also be supervised by non-habilitated employees if these have been appointed as the examiner. Supervision by a university lecturer or teacher not belonging to the faculty is also possible. This requires the consent of the chair of the examination committee or his/her deputy.
- (3) The student has the right to suggest the topic and supervision of the master's thesis. A rejection of the suggested topic is to be justified objectively.
- (4) The project definition is issued via the chair of the examination committee in the examination office of the Faculty of Civil and Environmental Engineering. The time of issue is to go on record.
- (5) Upon request, the chair of the examination committee ensures that the candidate receives a topic for the master's thesis.
- (6) The processing time for the master's thesis is usually six months. Premature submission is possible at the earliest after four months. The project definition and scope of the master's thesis are to be limited in such a manner that the period for the writing of the master's thesis can be observed (900 hours). The project definition can only be returned once and only within the first month of the processing time. On an individual basis, the examination committee can, upon justified request by the candidate, extend the processing time as an exception by a period of up to four weeks. The master's thesis can be written in German or English.
- (7) Upon submission of the master's thesis, the candidate is to provide an assurance in writing that he/she wrote the work independently, has not used anything other than the stated sources and resources and has indicated quotations.

18 Acceptance and assessment of the master's thesis

- (1) The written documentation of the master's thesis is to be submitted within the deadline to the examination office in three copies and in a reviewable electronic form. The time of submission is to go on record. If the master's thesis is not submitted within the deadline, it is assessed as 5.0 ("fail").
- (2) The master's thesis is to be assessed by two examiners. One of the examiners should be the person selected to set the topic and who provides responsible supervision of the master's thesis. The second examining person must belong to the group of people listed in section 17, para. 2 and is determined by the chair of the examination committee. The assessment by the examiners is to be undertaken using the third marking system in accordance with section 8. The overall assessment of the master's thesis is formed by the arithmetic mean of the individual assessments in accordance with section 9. In the event of differences of more than one whole grade in the individual assessments, the examination committee determines the overall assessment. A third examiner may be appointed for this.

- (3) The assessment procedure for the master's thesis including reporting to the examination office is usually to be completed within four weeks following submission of the master's thesis.

19 Passing and grading of the master's examination

- (1) The master's examination is passed if all necessary modules including the master's thesis are completed successfully and at least 120 CPs were achieved.
- (2) The master's degree is completed when the master's examination is passed.
- (3) The overall grade of the master's examination arises as a weighted arithmetic mean (weighted with the CPs) of all graded module examinations with the exception of the optional modules. When calculating the overall grade, the grades for the compulsory modules with a factor of 1, the grades for the compulsory optional modules with a factor of 1.5, and the grade for the master's thesis with a factor of 2.0 are weighted in addition. Decimal values are to one decimal place. The tabular list from section 9 para. 3 is used for the grade designation.
- (4) In place of the overall grade "very good", the overall assessment "with distinction" is awarded if the master's thesis is assessed as at least 1.3 and the overall grade determined according to paragraph 3 is less than 1.3.

20 Diploma for the master's examination

- (1) Upon request, a diploma is issued for the passed master's examination. The header of this diploma includes the designation "Diploma for the master's examination in the degree programme Computational Engineering". The diploma shows:
- a) The overall grade of the master's examination with the average assessment as a numerical grade and grade description,
 - b) The topic of the master's thesis, its assessment as a numerical grade and the grade designation.
 - c) The designations and scope (CP) of the individual modules, the assessment of the modules as a numeric grade and the grade designation. For ungraded modules, besides the module designation and the scope (CP), only the assessment "passed" is adopted.
- (2) The diploma is to be signed by the chair of the examination committee or his/her deputy and sealed with the seal of the examination committee for the Faculty of Civil and Environmental Engineering.
- (3) The diploma bears the date of the last examination component. In the case of the master's thesis, this is the date of submission of the work. It also bears the date of issue.
- (4) If the candidate has not yet passed the master's examination and he/she does not wish to continue the studies at Ruhr-Universität Bochum, he/she is issued with a written certificate on request and upon submission of the respective evidence. It contains the completed examinations with the corresponding numerical grades and the designations of the passed modules, their assessments as numerical grades and the grade designations.

21 Diploma supplement

- (1) With the diploma, the graduate is issued with the diploma supplement stating the date of the diploma.
- (2) The diploma supplement provides information about the individual technical profile of the completed degree programme.
- (3) The diploma supplement is signed by the chair of the examination committee or his/her deputy and sealed with the seal of the examination committee for the Faculty of Civil and Environmental Engineering.
- (4) The diploma supplement includes the transcript of records.

22 Master's certificate

- (1) With the diploma, the graduate is issued with the master's certificate. This certifies the awarding of the academic degree and the professional title in accordance with section 4. The certificate bears the date of the last examination component and the date of issue.
- (2) The master's certificate is signed by the dean of the Faculty of Civil and Environmental Engineering and sealed with the seal of the Faculty of Civil and Environmental Engineering.

III. Final provisions

23 Invalidity of the master's examination, revocation of the academic degree

- (1) If the candidate has deceived in an examination component and this fact only comes to light following the issuance of the diploma, the examination committee will subsequently correct the assessments and grade for the respective examination accordingly and declare the examination as not passed if required.
- (2) If the prerequisites for admission to a module examination were not met without the candidate having wanted to deceive regarding this, and this fact only becomes known after the issuance of the diploma, this shortcoming is remedied by the passing of the module examination. If the candidate wrongly obtained admission with intent, the examination committee decides on the legal consequences, taking into account the administrative procedural law for the state of North Rhine-Westphalia.
- (3) The person affected is to be given an opportunity to make a statement in writing before a decision.
- (4) The incorrect examination certificate is to be withdrawn by the chair of the examination committee and, if necessary, a new certificate issued. A decision in accordance with paragraph 1 and paragraph 2 clause 2 is only permitted within five years from the time the degree is awarded. The period between the initiation and termination of an administrative proceeding to assess the withdrawal of the degree award is not included in the five-year period in accordance with clause 2.
- (5) If the assessment has been declared as not passed overall due to an attempt to deceive, the M.Sc. is to be revoked. The examination committee decides on the revocation. The decision is to be made by the chair of the examination committee and the respective certificate is to be withdrawn.

24 Viewing of the examination file

- (1) Following conclusion of the assessment procedure, the candidate is allowed to view his/her examination record upon request in a suitable period of time.
- (2) The application is to be submitted to the chair of the examination committee within one month following issuance of the examination certificate. The chair of the examination committee determines the location and time of viewing.

25 Transitional provisions

The master's examination can be completed for the last time in accordance with the examination regulations for the bachelor's/master's degree programme Computational Engineering of 15.10.2010, bulletins published by Ruhr-Universität Bochum No. 848, at the end of the summer semester 2017. Examination components can only be completed in accordance with the present examination regulations from the winter semester 2017/2018. It is possible to change from the older examination regulations to the new, present examination regulations upon request at the earliest in the semester when the old examination regulations expire.

26 Entry into force and publication

- (1) These examination regulations enter into force on the day after their publication and apply to all students who enrol on this study program from the winter semester 2015/2016.
- (2) These examination regulations are published in the bulletins published by Ruhr-Universität Bochum.

Issued on the basis of the decision by the faculty council of the Faculty of Civil and Environmental Engineering on 4th February 2015.

Bochum, 28th September 2015

The Rector
at Ruhr-Universität Bochum
University professor Dr. E. Weiler

Appendix 1

**to the examination regulations for master's degree programme
'Computational Engineering'
at Ruhr-Universität Bochum**

Module list