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# **Examination Regulations for the Master's Program in Computational Sciences at the Faculty of Mathematics and Natural Sciences of the University of Cologne**

from 09.03.2022

On the basis of § 2 paragraph 4 and § 64 of the Higher Education Act of the State of North Rhine-Westphalia (Hochschulgesetz-HG) in the version of the Higher Education Act (Hochschulzukunftsgesetz - HZG NRW) of September 16, 2014 (GV.NRW. p. 547), last amended by Article 1 of the Act on Further Amendments to the Higher Education Act and the Higher Education Act for the Arts of November 25, 2021 (GV. NRW. p. 1210a), the Faculty of Mathematics and Natural Sciences of the University of Cologne issues the following examination regulations:

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## **§ 1**

### **Regulatory area**

<sup>1</sup>These examination regulations govern the course of study, the examination procedure and the academic degree to be awarded for the Master's degree program in Computational Sciences at the University of Cologne. <sup>2</sup>The contents and requirements of the modules are regulated in the appendix. <sup>3</sup>The appendix is part of these examination regulations.

## **§ 2**

### **Study Goal**

<sup>1</sup>Taking into account the requirements and changes in the professional world and the interdisciplinary references, teaching and studies provide students with the necessary subject-specific knowledge, skills and methods in accordance with the course of study in such a way that they are enabled to work scientifically or artistically, to apply scientific knowledge and methods in professional practice, to critically classify scientific knowledge and to act responsibly. <sup>1</sup>

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<sup>1</sup> Students acquire the necessary knowledge and competencies that enable them to practice good scientific practice and to act responsibly in science in accordance with the "Regulations of the University of Cologne for Ensuring Good Scientific Practice and for Dealing with Scientific Misconduct" (Official Notices of the University of Cologne 24/2011) as amended.

### **§ 3**

#### **Academic degree**

Upon successful completion of the program, the academic degree of Master of Science, M.Sc. is awarded.

### **§ 4**

#### **Access to studies, start of studies, standard period of studies, organization of studies**

(1) Access and admission to the study program are governed by separate regulations.

(2)<sup>1</sup> The study program can only be started in the winter semester. <sup>2</sup>The standard period of study is four semesters.

(3)<sup>1</sup> The course of studies is organized by the Faculty of Mathematics and Natural Sciences in such a way that the studies can be completed within the standard period of study. <sup>2</sup>On the part of the Faculty of Mathematics and Natural Sciences, adequate support for students in organizing their studies is ensured, among other things, through course-specific advising and through measures for evaluating and ensuring the quality of teaching.

(4)<sup>1</sup> A study plan is prepared and made available in a suitable form. <sup>2</sup>This study plan is not part of the examination regulations.

(5) The degree program is offered in English.

### **§ 5**

#### **Design and structure of the study**

(1) At least 120 credit points (LP) must be earned in the course of study in accordance with § 7.

(2)<sup>1</sup> The study program comprises between 11 and 15 modules according to § 6.<sup>2</sup> In detail, it includes:

a) 2 obligatory basic modules "Simulation and Modeling 1 & 2" each worth 9 credit points, advanced modules worth 18 credit points from the field of mathematics/computer science, basic and advanced modules worth 30 credit points from the chosen focus, 2 focus modules "Literature Seminar" and "Project Work" worth 18 credit points and supplementary modules worth 6 credit points.

b) the Master's thesis module worth 30 credit points,

(3) The course of study shall be conducted in accordance with the respective provisions in the appendix to these examination regulations.

(4) Within the study program, one of the five concentrations "Computational Astro and Space Physics", "Computational Biology", "Earth System Sciences", "Theoretical Chemistry" or "Theoretical Condensed Matter Physics" has to be chosen. The major must be declared at the beginning of the program and will be noted in the electronic examination file. It can be changed once up to the end of the second semester upon written or electronic application to and approval by the examination board.

(5)<sup>1</sup> If one or more modules of another faculty are offered in the degree program, the regulations of the offering faculty apply to these. <sup>2</sup>The modules concerned are shown in the appendix.

## § 6

### Modules

(1) The study program is structured in modules.

(2)<sup>1</sup> Modularization is the combination of subject areas into thematically and temporally related, self-contained teaching units with credit points. <sup>2</sup>The contents of a module are to be dimensioned in such a way that they can usually be taught within one semester or within two semesters. <sup>3</sup>In particularly justified cases, a module may extend over more than two semesters.

(3)<sup>1</sup> Modules usually have a scope of 6, 9, 12, 15 or 18 credit points. <sup>2</sup>Modules with 6 credit points can usually be completed in one semester, the others in a maximum of two semesters.

(4) A distinction is made between the following module types:

- a) Core Modules are designed to provide basic knowledge,
- b) Advanced modules build on the basic modules and serve to deepen the acquired knowledge and skills,
- c) Specialization Modules are used to define one's own focus through specialization,
- d) Supplementary modules are not firmly anchored in the course of studies and serve to round off the studies individually.

(5) Modules can be offered as compulsory or elective modules:

- a) Compulsory modules are mandatory to study; they are identified as such in the appendix,
- b) Elective modules are to be selected from a given list and studied on a compulsory basis in accordance with the provisions in the appendix; they are identified as such in the appendix,

(6)<sup>1</sup> Regulations for the individual modules as well as for the examinations concluding them are named in the appendix. <sup>2</sup>These include in particular:

- a) Module identification number,
- b) Title of the module,
- c) Module Participation Prerequisites,
- d) Start of the module,
- e) Cycle of the module,
- f) Duration of the module in semesters,
- g) Course forms of the module and participation requirements,
- (h) Examination Requirements,
- i) Form of examination, characteristics and duration of the module examination, examination elements, if applicable, and their passing and repetition modalities,
- j) Exam language,
- (k) Trial Restrictions,
- l) Marking as compulsory or elective module
- m) Credit points of the module,
- n) Prerequisites for the award of credit points,
- o) for elective modules: Proportion of the credit points of the module to the credit points in the relevant compulsory elective area,
- p) Weighting of the module grade for the overall grade.

(7)<sup>1</sup> As a rule, modules are completed with only one module examination. <sup>2</sup>For modules with a scope of 6 credit points, the module examination consists of one examination element. <sup>3</sup>In the case of modules worth 9 credit points, the module examination may consist of two examination elements. <sup>4</sup>For modules of 12, 15 or 18 credit points, the module examination can consist of a maximum of three examination elements. <sup>5</sup>Individual modules can also be completed without an examination. <sup>6</sup>The corresponding regulations are shown in the appendix.

(8) If a module examination is composed of several examination elements, these usually represent different forms of examinations or forms of examinations according to § 12 paragraph 2 to 6.

(9)<sup>1</sup> Participation in modules or elements of modules may be subject to prerequisites. <sup>2</sup>The prerequisites are shown in the appendix.

## **§ 7**

### **Credit point system and general criteria for awarding credit points**

(1)<sup>1</sup> Successful participation in modules is certified by the award of credit points. <sup>2</sup>Credit points are calculated according to the expected workload required of the students and are a quantitative measure of the overall workload of the students. <sup>3</sup>They comprise the time required both for attending the courses and for preparing and following up the course material (attendance and self-study), preparing for examinations and the examination workload, including final papers and student research projects and, if applicable, internships. <sup>4</sup>Credit points are equivalent to credits according to the European Credit Transfer and Accumulation System. <sup>5</sup>One credit point corresponds to an average workload of approximately 30 hours. <sup>6</sup>As a rule, 60 credit points are earned per academic year.

(2)<sup>1</sup> Credit points are awarded if the study and/or examination achievements required in the respective module have been proven or passed. <sup>2</sup>Section 48 (5) HG applies to the acquisition of credit points in the case of leaves of absence. <sup>3</sup>Irrespective of this, study and examination achievements from modules that have not been completed can be shown in the Transcript of Records.

## **§ 8**

### **unoccupied**

## **§ 9**

### **Courses**

(1) Courses are generally offered in the following forms:

- a) Lecture: Coherent presentation and teaching of basic and specialized scientific knowledge and of methodological knowledge mostly in individual courses periodically distributed over a semester.
- b) Seminar: Discursive study of fundamental or advanced questions.
- c) Exercise: Course accompanying a lecture or seminar. Discussion of given exercises and deepening of learning content through independent work or acquisition and deepening of knowledge by working on tasks or conducting experiments.
- d) Internship: Acquisition and deepening of knowledge by working on practical tasks or carrying out experiments. An internship can be carried out at the university (e.g. laboratory internship) or outside the university (e.g. field, company or school internship).
- e) Excursion: Course outside the university for the purpose of observation. The students recognize aspects of subject content in reality, record relevant

factors/structures on the basis of observations and practice the application of the acquired knowledge or work out scientific conclusions.

f) Language course: course designed for the acquisition and/or consolidation of foreign language skills.

g) Project: Action-oriented, independent work on a complex task or problem in successive phases (planning, implementation, presentation of results), usually within a previously determined time.

h) Tutorial: As a rule, this is an accompanying course to basic courses. In small groups, working techniques are practiced and basic knowledge is deepened; the complex contents of the main course are explained to the students or the theoretical contents are illustrated by means of practical examples.

(2) The course forms according to paragraph 1 may be offered in combined form.

(3)<sup>1</sup> If it is necessary to limit the number of participants in a course because of its nature or purpose or for other reasons of research, artistic development projects, teaching, the practice of art or the care of the sick, and if the number of applicants exceeds the capacity for admission, the number of participants may be limited in accordance with Section 59 (2) HG. <sup>2</sup>Priority shall be given to students whose studies require them to attend a course at that time. <sup>3</sup>The details, in particular the criteria for prioritization, are regulated by the faculty in its own regulations. <sup>4</sup>Within the scope of the available resources, it shall be ensured that, as far as possible, students do not lose any time as a result of the restrictions on the number of participants.

(4)<sup>1</sup> Admission to an examination or the award of credit points may require regular participation in courses in modules and their review. <sup>2</sup>Corresponding provisions are shown in the appendix. <sup>3</sup>The ordering of regular participation is only permissible if it is proportionate and the learning objective can only be achieved through regular participation. <sup>4</sup>This is usually the case if at least one of the following reasons exists:

a) The obligation to demonstrable regular participation in modules or courses results from the initiation and practice of scientific discourse, which are the primary and formative element and essential learning objective of the module or course. Scientific discourse is characterized by the presentation of scientific issues and argumentation and one's own positioning as well as critical reflection and mutual exchange about what has been presented.

b) The obligation to demonstrable regular participation in modules or courses results from the didactic design of the course, which, in order to achieve the learning objective, provides for permanently participative, interactive and cooperative teaching and learning formats as well as reflection on the contents and results under guidance.

c) The obligation to provide evidence of regular attendance at modules or courses is prescribed by legal regulations.

d) The obligation to provide evidence of regular attendance at modules or courses is mandatory for reasons of occupational health and safety and laboratory safety.

e) The obligation for demonstrable regular participation in modules or courses arises from the need to acquire practical skills and abilities that cannot be acquired in any other way, as well as their testing, practice and reflection under guidance.

f) The obligation for demonstrable regular participation in modules or courses arises from the need to practice sign language or oral or written language skills and abilities as well as their practical linguistic execution and reflection in the context of communicative and personal interaction under guidance.

g) The obligation to demonstrable regular participation in modules or courses results from the necessity of examining content-relevant objects and contexts in situations and the location- and situation-dependent acquisition of practical or occupationally relevant skills and abilities with the inclusion of non-university learning locations.

<sup>5</sup>As a rule, regular attendance can be proven if the absences do not exceed 20%.

<sup>6</sup>Especially in the case of internships and excursions, this can be deviated from.

<sup>7</sup>Corresponding regulations are shown in the appendix. <sup>8</sup>§ 17 paragraph 4 applies accordingly.

<sup>9</sup>Regular participation in the courses as well as their preparation and follow-up is recommended.

## § 10

### **Academic advising, subject advising, examination advising**

(1) Legally binding information on examination requirements and examination performance shall be provided by the chairperson of the examination board, his or her deputy, the head of the respective examination office and his or her deputy.

(2)<sup>1</sup> The Central Academic Advising Office of the University of Cologne is available for general academic advising, especially about study opportunities and study requirements. <sup>2</sup>Faculty-wide advising services are available for interdisciplinary study advising. <sup>3</sup>The Counseling Center of the Center for Teacher Education is also available for interdisciplinary counseling in the teaching degree programs.

(3)<sup>1</sup> The subject-specific course guidance is provided by the university lecturers and the academic staff involved in the education in this course of study during office hours. <sup>2</sup>The office hours are announced by posting in the institutes and on the Internet. <sup>3</sup>The use of individual study counseling is recommended.

(4) The General Student Committee (AStA) and the student councils offer consultations on general questions of study organization.

(5) The Department 9: International Affairs of the University of Cologne as well as the Center for International Relations (ZiB) of the Faculty of Mathematics and Natural Sciences offer consultations for the special questions of foreign students and for the preparation of a study abroad.

(6) In the case of study-related personal difficulties, the Psycho-Social Counseling Service of the Cologne Student Union can be called upon above all.

(7) Students with disabilities or chronic or mental illness may seek the advice of the university administration (Service Center Inclusion) as well as the representative for students with disabilities or chronic illness.

(8) Students will be integrated into the program's mentoring program, which will provide advice and support, particularly in the selection of lectures for the specialization.

## § 11

### Recognition of achievements

(1)<sup>1</sup> Examination results obtained in study courses at other state or state-recognized universities, at state or state-recognized universities of cooperative education or in study courses at foreign state or state-recognized universities or in another study course at the same university shall be recognized upon application, provided that with regard to the competences acquired there is no substantial difference to the results which are being replaced; an examination of equivalence shall not take place. <sup>2</sup>The same shall apply with regard to degrees with which courses of study within the meaning of sentence 1 have been completed. <sup>3</sup>Recognition within the meaning of sentences 1 and 2 serves the purpose of continuing studies, taking examinations or taking up further studies or admission to doctoral studies.

(2)<sup>1</sup> On application, knowledge and qualifications acquired by means other than study may be recognized on the basis of documents submitted if such knowledge and qualifications are equivalent in content and level to the examination achievements they are intended to replace. <sup>2</sup>Recognition of such non-university achievements beyond a scope of up to half of the examination achievements to be taken is not permitted. <sup>3</sup>Pupils who, in the consensual judgment of the school and the university, display special talents may, in individual cases, be admitted to courses and examinations as young students outside the enrollment regulations. <sup>3</sup>Upon application, their academic and examination achievements will be recognized for subsequent studies.

(3)<sup>1</sup> If achievements are recognized, the grades are to be adopted and included in the calculation of the overall grade, insofar as the grading systems are comparable. <sup>2</sup>In the case of incomparable grading systems, the remark "passed" shall be included. <sup>3</sup>A marking of the recognition in the certificate of examination achievements is permissible.

(4)<sup>1</sup> Recognition of a performance achieved elsewhere is not possible if this performance has already been successfully achieved at the University of Cologne.

(5)<sup>1</sup> Students must submit the documents required for recognition. <sup>2</sup>Applications for recognition must be submitted in writing or electronically. <sup>3</sup>The chairperson of the examination board decides on the recognition. <sup>4</sup>As a rule, subject representatives are to be heard during the recognition procedure. <sup>5</sup>As a rule, the decision must be made within three months and the student must be notified immediately by posting the recognition information in the campus management system; reasons for the rejection of recognition must be given in writing or electronically. <sup>6</sup>If the recognition sought on the basis of an application within the meaning of paragraph 1 is refused, the applicant may request a review of the decision by the rectorate,

without prejudice to procedural deadlines. <sup>7</sup>The rectorate shall make a recommendation to the chairperson of the examination board on the further handling of the application.

## § 1 2

### Forms of examination

(1) Modules are generally completed with only one module examination, which is based on the learning objectives and learning outcomes defined for the module.

(2)<sup>1</sup> Module examinations can be taken in written, oral, practical or combined form. <sup>2</sup>The form and duration of the respective examination performance are shown in detail in the appendix. <sup>3</sup>For serious reasons, the chairperson of the examination board may determine a different form of examination upon written or electronic application. <sup>4</sup>Examinations may also be conducted in the form of a video conference at the suggestion of the examiners and with the consent of the examination candidate.

(3) Expressions of the written examination form are usually:

a) Written examination: A written examination is a piece of work to be completed under supervision, in which given tasks are to be worked on alone and independently using only the approved aids. The duration of a written exam is usually a minimum of 45 and a maximum of 180 minutes and is specified for the respective exam in the appendix. Examinations can be conducted in written or electronic form. For examinations in electronic form, the regulations in paragraph 8 shall apply in addition. Examinations may also be conducted in whole or in part in the form of an answer-choice procedure in accordance with § 13.

b) Term paper: A term paper is an independent written elaboration of a given topic that has been dealt with in the context of the relevant module. It must be submitted in written or electronic form as well as a file on a readable data carrier in a format specified by the examiner; in exceptional cases, submission in electronic form is sufficient. A signed declaration with the following wording must be attached to the term paper: "I hereby certify that I have written this paper independently and without the use of any aids other than those specified. All passages taken verbatim or in spirit from published and unpublished external writings are identified as such." In the case of a written and electronic submission, add: "I assure that the submitted electronic version corresponds completely to the submitted print version."

(c) An internship report is a written account and analysis of the tasks completed in an internship, either within or outside the university.

d) A portfolio is a collection of several completed tasks in the broadest sense, which serves to document and reflect on the learning process and which is evaluated in summary.

(4) Expressions of the oral examination form are usually:

a) Oral examinations: In oral examinations, an examination candidate shall demonstrate that he or she recognizes the interrelationships of the examination area and is able to classify special questions in these interrelationships. Oral examinations are conducted by at least two examiners or by one examiner in the presence of an expert assessor. As a rule, an oral examination lasts a minimum of 20 minutes and a maximum of 45 minutes per examination candidate. The duration, main course, subjects and results are to be recorded in a protocol. Examination candidates of the same degree program shall be allowed to participate in oral examinations as listeners upon request, unless an examination candidate objects. The examiner decides on the application according to the number of seats available. Participation does not extend to the discussion and announcement of the examination result.

b) Presentation: A presentation serves to present a given topic or subject in a limited amount of time. The examination takes place within the framework of a course in the form of a lecture with the aid of suitable presentation techniques.

c) Lecture: In the context of a lecture, independently developed aspects or perspectives of a subject area are presented in a limited time with the aid of suitable presentation techniques. The examination usually takes place within the framework of a course.

(5) Expressions of the practical examination form are usually: setting up and conducting experiments as well as examinations in which an extra-textual product is created.

(6)<sup>1</sup> As a rule, the combined examination forms are: workplace-based assessments, simulations, presentations with a written paper, papers with a presentation, and project work. <sup>2</sup>A project work is the independent processing of a task or a problem usually by a group from the planning to the execution to the documentation of the result in written, oral or other form; paragraph 7 applies accordingly. <sup>3</sup>Combined examinations may only comprise examination performances which are suitable for checking the acquisition of different (partial) competences.

(7) In appropriate cases, examinations may also be conducted as group work or as oral group examinations at the discretion of the examiner, if the individual contribution of each individual group member is clearly identifiable, clearly delimitable and assessable.

(8)<sup>1</sup> An electronic examination (e-examination) is an examination that is carried out on a computer using an examination program and whose creation, execution and evaluation are supported overall by information and communication technologies. <sup>2</sup>An e-examination is permissible if it is suitable for demonstrating that the examination candidate has mastered the contents and methods of the module in the essential contexts and can apply the acquired knowledge and skills; if necessary, it can be supplemented by other forms of examination. <sup>3</sup>The examination candidates are given sufficient opportunity to familiarize themselves with the electronic examination system before the examination. <sup>4</sup>The e-examination shall be conducted in the presence of a competent person who shall prepare a record of the course of the examination. <sup>5</sup>The minutes must include at least the names of the person taking the minutes and of the candidates, the beginning and end of the examination, and any special incidents. <sup>6</sup>It must be ensured that the electronic data can be clearly and permanently assigned to the examination candidates. <sup>7</sup>In accordance with § 26, the examination candidates must be given

the opportunity to inspect the computer-based examination and the results they have achieved.  
<sup>8</sup>Data protection regulations must be observed.

(9)<sup>1</sup> Disruptions in the examination process must be asserted immediately in writing or electronically to the chairperson of the examination committee or to the responsible examiner.  
<sup>2</sup>The assertion is excluded at the latest if more than three working days have elapsed since the performance of the examination.

## § 13

### Examinations using the answer-choice method

(1)<sup>1</sup> An examination in the answer-choice procedure exists if the minimum performance of the examination candidate required for passing the examination can be achieved exclusively by marking or assigning the given answers. <sup>2</sup>Examinations or examination questions in the answer-choice procedure are only permissible if they are suitable for providing evidence that the examination candidate has mastered the contents and methods of the module in the essential contexts and can apply the acquired knowledge and skills.

(2)<sup>1</sup> The examination questions must be unambiguously understandable, free of contradictions, unambiguously answerable and suitable for determining the knowledge of the examination candidates to be tested in accordance with paragraph 1 sentence 2. <sup>2</sup>Variations of the same examination questions (also in the answer options) are permissible. <sup>3</sup>The deduction of points within an examination task is not permitted.

(3) If the examiner - according to the faculty- or course-specific design of the concrete answer-choice procedure - is not at the same time the task setter, but the examiner's activity is shifted from the examiner responsible according to the examination regulations to another, namely the task setter, the following paragraphs 4 to 9 shall additionally apply.

(4)<sup>1</sup> The examiner selects the examination material, formulates the questions, determines the answer options and draws up the evaluation rules and the evaluation scheme in accordance with paragraph 6.<sup>2</sup> The requirements for passing the examination are to be determined in advance. <sup>3</sup>Before the examination, the examiner conducts a review process in which the content and form of the questions are proofread by a second examiner.

(5)<sup>1</sup> The examiner can also create a pool of equivalent examination questions from which the examination candidates each receive different examination questions to answer. <sup>2</sup>The assignment is done by random selection. <sup>3</sup>The equivalence of the examination questions must be ensured.

(6)<sup>1</sup> The examination is passed if the examination candidate has achieved at least 60 percent of the total achievable points. <sup>2</sup>If the overall average of the points achieved in an examination minus 12 percent of the overall average is below 60 percent but above 50 percent of the total achievable points, the pass mark shall be calculated in accordance with this sliding clause. <sup>3</sup>A grading scheme that exclusively sets an absolute pass mark is not permitted.

(7)<sup>1</sup> The examination performances are to be evaluated as follows: If the minimum number of attainable points required to pass the examination has been achieved, the grade shall be as follows.

"very good"	if at least 75 percent,
"good"	if at least 50 but less than 75 percent,
"satisfactory"	if at least 25 but less than 50 percent,
"sufficient"	if none or less than 25 percent

of the points attainable beyond this have been achieved. <sup>2</sup>When calculating the scores, 0.5 values are interpreted in favor of the examination candidate. <sup>3</sup>If the minimum number of points required to pass the examination has not been achieved, the grade will be "deficient (5.0)".

(8)<sup>1</sup> If the assessment of examination performance reveals a conspicuous accumulation of errors in the answers to individual examination tasks, the examiner shall review the examination tasks concerned without delay and before the announcement of the examination results to determine whether they are defective when measured against the requirements pursuant to paragraph 2 sentence 1. <sup>2</sup>The tasks shall be analyzed post hoc. <sup>3</sup>Difficulty index, discriminatory power index, reliability and distractor analysis provide indications of the quality of the questions set. <sup>4</sup>If the review reveals that individual examination tasks are faulty, these are to be reassessed or not taken into account when determining the examination result. <sup>5</sup>The number of examination items to be taken into account in determining the examination result is reduced accordingly. <sup>6</sup>The reduction in the number of examination papers may not be to the disadvantage of an examination candidate. <sup>7</sup>If the number of points attributable to the examination items to be eliminated exceeds 20 percent of the total achievable points, the examination as a whole must be repeated. <sup>8</sup>This also applies if only part of an examination is to be taken using the answer-choice method.

(9) If an examination performance consists only partially of examination tasks in the answer-choice procedure, this paragraph, with the exception of paragraph 8, sentences 7 and 8, applies only to the part of the examination prepared in the answer-choice procedure.

## **§ 1 4**

### **Exam language**

<sup>1</sup>Module examinations and, if applicable, their examination elements are generally conducted in English. <sup>2</sup>The examination board may allow examinations in German upon written or electronic application of an examination candidate with the consent of the examiners.

## § 15

### Registration and admission to exams

(1)<sup>1</sup> Prior to admission to a module examination, it is checked whether a candidate is entitled to take the examination. <sup>2</sup>Admission to and taking of a module examination shall be granted if the examination candidate is enrolled in the relevant degree program at the University of Cologne or is admitted as a second student, has registered for the respective module examination in due time according to paragraph 4 and, if applicable, fulfills further requirements according to paragraph 2 and there is no reason for refusal according to paragraph 3.

(2)<sup>1</sup> Admission to a module examination may be linked to proof of certain prerequisites. <sup>2</sup>If these prerequisites are coursework, they serve the acquisition of competencies and the assessment of learning status for teachers and students. <sup>3</sup>They remain ungraded. <sup>4</sup>If course work requires attendance at a course for which regular attendance is not required in accordance with § 9, paragraph 4, students shall, in justified exceptional cases, be allowed to take an alternative course work that does not require attendance at the course, provided that this is suitable for promoting the acquisition of competencies and for assessing learning levels in a comparable manner. <sup>5</sup>Course credit is generally provided in the following formats: Electronic learning assessments, essays, exercises, homework, short papers, logs, reviews, test exams, thesis papers, and similar formats. <sup>6</sup>The respective requirements for admission to a module examination are shown in the appendix.

(3)<sup>1</sup> Admission to a module examination is to be denied if the prerequisites according to paragraph 1 or paragraph 2 are not fulfilled, if the module examination in the same or an equivalent module eligible for recognition has already been passed at the University of Cologne, or if a deadline for repetition has been missed. <sup>2</sup>Admission to a module examination shall also be denied if the examination candidate has definitively failed an examination required by the examination regulations or has lost the right to take the examination in the chosen course of study at a university within the area of application of the Basic Law; this shall apply accordingly to courses of study which have a considerable proximity in terms of content to the previous course of study. <sup>3</sup>In addition, admission to an examination shall be denied if an examination candidate has been granted leave of absence pursuant to Section 48 (5) HG, unless one of the exceptional cases specified in Section 48 (5) sentence 4 and sentence 5 HG applies.

(4)<sup>1</sup> Registration is required for each module examination; without registration, there is no entitlement to participation in or assessment of the examination performance. <sup>2</sup>As a rule, registration for a module examination must take place no later than one week before the examination date. <sup>3</sup>Notwithstanding this, § 20 paragraph 7 shall apply.

(5)<sup>1</sup> The examination dates must be announced at the beginning of the lecture period, but no later than nine weeks before the examination date, by posting or on the Internet in a suitable form. <sup>2</sup>Notwithstanding this, the following applies: In the case of oral module examinations, the examination periods must be named at the beginning of the lecture period and the specific date at the latest two weeks before the module examination. <sup>3</sup>Students who have been admitted to a module examination are entitled to attend a published examination date, except in cases of force majeure. <sup>4</sup>Notwithstanding this, § 20 paragraph 7 shall apply.

(6) At least two prompt examination dates are offered for the completion of an examination performance.

(7) Students who are enrolled in more than one degree program at the same time and who wish to take a module examination that is part of more than one of these degree programs must specify in which degree program they are taking the module examination when registering for this module examination.

## **§ 16**

### **Deregistration, tardiness and withdrawal from examinations**

(1)<sup>1</sup> The deadlines for withdrawal from the module examinations shall be announced by the chairperson of the examination board at least nine weeks before the examination date by posting a notice or on the Internet in a suitable form. <sup>2</sup>As a rule, an examination candidate may withdraw from the module examination no later than one week before the respective examination date without giving reasons.

(2)<sup>1</sup> If an examination candidate does not take part in a module examination set in terms of time and place without a valid reason, or if he or she withdraws from the module examination without a valid reason after it has begun, the examination performance shall be deemed to have been assessed as "deficient (5.0)" or "failed". <sup>2</sup>The same applies if an examination performance is not completed within the specified processing time. <sup>3</sup>§ Section 19 (1) applies accordingly.

(3)<sup>1</sup> If an examination candidate fails to take part in a module examination or withdraws from the module examination after it has begun, the chairperson of the examination board may, if there are valid reasons, refrain from grading the examination performance as "unsatisfactory (5.0)" or "failed". <sup>2</sup>The same applies if an examination performance is not completed within the specified processing time. <sup>3</sup>The reasons asserted for the default or withdrawal must be notified to the chairperson of the examination board immediately in writing or electronically and must be made credible. <sup>4</sup>In case of illness, a medical certificate must be submitted. <sup>5</sup>In cases of doubt, the submission of a confidential medical certificate may be requested; the costs will be borne by the university. <sup>6</sup>The same applies in the case of proven illness of a child to be cared for by an examination candidate or a spouse to be cared for, a registered partner, a relative in the direct line as well as a relative by marriage in the first degree.

## **§ 17**

### **Compensation for disadvantages and protective provisions**

(1) The special concerns of students with disabilities, chronic or mental illnesses, and students who are subject to maternity protection regulations shall be taken into account in order to ensure their equal opportunities.

(2)<sup>1</sup> If an examination candidate can credibly demonstrate that he or she is unable to participate in a module examination in the intended form or to the intended extent due to long-

term or permanent illness or disability, he or she will be granted compensation for a disadvantage upon written or electronic application to the chairperson of the examination committee. <sup>2</sup>For this purpose, the submission of a specialist medical certificate may be required. <sup>3</sup>This applies accordingly with regard to deadlines and dates as well as obligations to participate in courses and coursework to be completed.

(3)<sup>1</sup> The use of the protection provisions according to the maternity protection regulations as well as according to the time limits of the Federal Parental Allowance and Parental Leave Act in the respective valid version are made possible upon application; in these cases, taking module examinations is possible despite leave of absence. <sup>2</sup>If a candidate can credibly demonstrate that she is unable to participate in a module examination in the intended form or to the intended extent due to maternity protection regulations, she will be granted compensation for disadvantages upon written or electronic application to the chairperson of the examination committee. <sup>3</sup>For this purpose, the submission of a specialist medical certificate may be required. <sup>4</sup>This applies accordingly with regard to deadlines and dates as well as obligations to participate in courses and academic achievements. <sup>5</sup>The application must be made immediately after the conditions have arisen.

(4)<sup>1</sup> Special concerns arising from the need for care or maintenance of the spouse, the registered partner, a relative in the direct line or a relative by marriage in the first degree shall be taken into account appropriately, in particular with regard to deadlines and dates as well as obligations to attend courses. <sup>2</sup>The application must be submitted immediately after the prerequisites have occurred.

(5)<sup>1</sup> The applications according to paragraphs 1 to 4 are to be comprehensively justified by the examination candidate, providing suitable evidence. <sup>2</sup>Applications must be submitted to the chairperson of the examination board within a reasonable period of time prior to the performance of the service. <sup>3</sup>Unless a change in the illness or disability is to be expected, the compensation for disadvantages should extend to all examinations to be taken in the course of the studies as well as the acquisition of participation requirements.

## **§ 1 8**

### **Assessment of examination performance**

(1)<sup>1</sup> Examination performances are graded<sup>1</sup> by the examiners or assessed as "passed" or "failed". <sup>2</sup>The following grades are to be used:

1 = very good: an excellent performance;

2 = good: a performance significantly above the average requirements;

3 = satisfactory: a performance that meets average requirements;

4 = sufficient: a performance that still meets the requirements despite its shortcomings;

5 = defective: a performance that no longer meets the requirements due to significant defects.

<sup>3</sup>By lowering or raising the individual grades by 0.3, intermediate values are formed for differentiated assessment. <sup>4</sup>The grades 0.7; 4.3; 4.7 and 5.3 are excluded. <sup>5</sup>An examination performance is passed if it has been graded with "sufficient (4.0)" or better or has been assessed as "passed".

(2)<sup>1</sup> Examination performances with which this degree program is completed, and examination performances in repeat examinations for which no compensation option is provided in the event of a final failure, as well as the Master's thesis are evaluated by two examiners; the appointment is made by the chairperson of the examination committee. <sup>2</sup>If a graded examination is assessed by two examiners, the grade of the examination is calculated from the arithmetic mean of the two individual assessments. <sup>3</sup>If, in the case of written examinations based on the two-examiner principle, the difference between the individual grades is more than 1.0 grade level or if only one of the two individual grades is "unsatisfactory (5.0)", the chairperson of the examination committee shall appoint a third examiner. <sup>4</sup>In this case, the grade is calculated from the arithmetic mean of the three individual grades. <sup>5</sup>If the average is worse than "sufficient (4.0)", the examination performance is to be assessed as "sufficient (4.0)" if two individual assessments are "sufficient (4.0)" or better. <sup>6</sup>If two individual evaluations are "insufficient (5.0)", the examination performance is to be evaluated as "insufficient (5.0)", deviating from the arithmetic mean.

(3) If a written examination that is graded "pass" or "fail" is graded by two examiners, the chairperson of the examination board shall appoint a third examiner to determine the final grade if the two examiners' grades differ.

(4)<sup>1</sup> In the case of combined forms of examination in accordance with § 12 Paragraph 6, an overall assessment of the examination performance takes place. <sup>2</sup>In the case of grading, the grade is shown in accordance with paragraph 1.

(5) If a module examination consists of several examination elements, the assessment shall be carried out in accordance with the provisions shown in the Annex.

(6) *unoccupied*

(7)<sup>1</sup> The overall grade of the degree program is calculated as the weighted arithmetic mean of the module grades and the grade of the Master's thesis according to the weighting shown in the appendix. <sup>2</sup>The preliminary overall grade of the study program is calculated as the weighted arithmetic mean of the existing grades of the successfully completed or recognized modules. <sup>3</sup>If more modules are completed than specified in these examination regulations, the passed examination results from the compulsory modules and the passed examination results from compulsory elective and elective modules are used to calculate the overall grade in chronological order according to the examination date stored in the campus management system. <sup>4</sup>This does not apply in the case of a change of focus according to § 5 paragraph 4. <sup>5</sup>In this case, the passed examination performances within the ultimately selected focus are taken into account in chronological order, while passed examination performances from other focus areas are taken into account in subordinate chronological order. <sup>6</sup>The remaining passed elective and optional modules are shown as additional examinations on the Transcript of Records.

(8)<sup>1</sup> Grades are shown with one decimal place and are used in this form for further calculations; all other decimal places are deleted without rounding.

(9) Scores, which are averaged values, are:

from 1.0 to 1.5 = very good;

from 1.6 to 2.5 = good;

from 2.6 to 3.5 = satisfactory;

from 3.6 to 4.0 = sufficient;

above 4.0 = poor.

(10) If the overall grade formed in accordance with paragraph 9 is 1.3 or better, the overall grade of "*with distinction*" is awarded.

## **§ 19**

### **Announcement of the examination results**

(1)<sup>1</sup> The grading of examination performances is generally announced to the examination candidates within eight weeks by posting the grading information in the campus management system. <sup>2</sup>If this regulation is deviated from, the reasons must be made part of the record. <sup>3</sup>The result of an oral examination performance is communicated to the examination candidate following the examination.

(2) The notification of the final failure of an examination or of a failed Master's thesis will be formally sent to the examination candidate at the postal address stored in the campus management system or electronically and will be accompanied by instructions on how to appeal.

## **§ 20**

### **Repeat of Module exams**

(1)<sup>1</sup> Failed module examinations may be repeated. <sup>2</sup>The number of examination attempts per module may be limited to three, notwithstanding the provisions of § 21 (12). <sup>3</sup>Further details are regulated by the provisions in the appendix. <sup>4</sup>With regard to all modules of the Master's program in which the number of examination attempts is limited to three, there are a total of two additional examination attempts. <sup>5</sup>In addition, examination candidates who have earned at least 90 credit points receive one additional examination attempt. <sup>6</sup>If an examination has not been passed after exhaustion of the two additional examination attempts and, if applicable, the further examination attempt according to sentence 5, the course of study has been definitively failed with the consequence of exmatriculation from the course of study. <sup>7</sup>The additional examination attempts according to sentences 4 and 5 do not refer to the repetition of the Master's thesis.

(2)<sup>1</sup> If an examination candidate has failed a module examination for which the number of examination attempts is limited to three in accordance with Paragraph 1, Sentence 2, for the third time, the chairperson of the examination board will inform the candidate in writing or electronically whether it is possible to take additional examination attempts for this examination in accordance with Paragraph 1, Sentences 4 and 5. <sup>2</sup>If the examination candidate is subsequently entitled to another additional examination attempt pursuant to paragraph 1 sentence 5, he or she shall receive separate notification of this. <sup>3</sup>In the case of additional examination attempts, the module examination must be successfully taken no later than two years after receipt of the notification pursuant to sentence 1 or sentence 2. <sup>4</sup>If this module examination is not offered at least twice during this period, the deadline is extended by a further year. <sup>5</sup>If the deadline is missed for reasons for which the examination candidate is responsible, the module examination is definitively failed with the consequence of exmatriculation from the degree program.

(3) The following applies to additional examination attempts in compulsory elective modules: If an examination candidate has failed a module examination in a compulsory elective module for which the number of examination attempts is limited to three in accordance with Paragraph 1 Sentence 2 for the third time, additional examination attempts must be taken in the same compulsory elective module.

(4) Additional examination attempts can only be granted for a module examination if none of the examination attempts in the module in question was failed due to deception or a breach of regulations pursuant to § 24.

(5)<sup>1</sup> Before taking a first additional examination attempt according to paragraph 1, it is strongly recommended to take advantage of counseling opportunities. <sup>2</sup>For this purpose, the examination candidate receives a written or electronic invitation to counseling, which also provides information about the available counseling options.

(6)<sup>1</sup> If a module examination consists of several examination elements, two pass or repeat options are possible:

a) All examination elements must be evaluated with "passed" or with "sufficient (4.0)" or better. All examination elements of the module examination assessed with "insufficient (5.0)" or "failed" must be repeated (variant A). Paragraphs 1 to 4 apply accordingly to examination elements.

b) All examination elements of the module examination are included in the module grade according to the weighting shown in the appendix. If the module grade determined in this way is "sufficient (4.0)" or better, the module examination is passed. If the module grade determined in this way is worse than "sufficient (4.0)", examination elements of the module examination assessed as "deficient (5.0)" must be repeated until the module grade is "sufficient (4.0)" or better overall. Examination elements that have been passed cannot be repeated. Module examinations according to this regulation are not subject to any attempt restriction (variant B).

<sup>2</sup>The determination of a variant is shown for each module in the appendix.

(7) In the case of repeat examinations, the chairperson of the examination board may, at the request of the examiner, specify a different form of examination or different characteristics of the respective form of examination.

(8) In the case of repeat examinations, the deadlines pursuant to Section 15 (4) and (5) may be deviated from in justified cases.

(9) The repetition of a Master's thesis shall be carried out in accordance with § 21 paragraph 12.

(10) The repetition of passed module examinations is excluded.

## § 21

### Module Master thesis

(1)<sup>1</sup> The Master's thesis is an examination in the form of an independently written piece of work, which is intended to show that the examination candidate is able to scientifically work on and reflect on a thematically limited problem from the subject area of the degree program using the required methods within a specified period of time. <sup>2</sup>When registering for the Master's thesis, the examination candidate must decide on a focus in which the Master's thesis will be written.

(2)<sup>1</sup> The Master's thesis is written during the course of study. <sup>2</sup>30 credit points are awarded for the master's thesis. <sup>3</sup>The requirements for admission to the master's thesis are shown in the appendix.

(3)<sup>1</sup> The Master's thesis can also be written in the form of a group thesis if the contribution of each individual examination candidate can be clearly distinguished and assessed. <sup>2</sup>The assignment of the individual contribution is made on the basis of objective criteria that allow a clear delimitation, for example, by indicating sections, page numbers, or focal points of content. <sup>3</sup>The total amount of work required for a group thesis must reasonably exceed the requirements for an individually prepared master's thesis. <sup>4</sup>In terms of difficulty and content, a group thesis must be measured for the individual examination candidate in such a way that it meets the requirements for an individual and independent examination performance. <sup>5</sup>The individual contribution of each candidate must meet the requirements for a Master's thesis.

(4)<sup>1</sup> The chairperson of the examination committee commissions an examiner to set the topic of the Master's thesis in accordance with § 23 Paragraph 3 and appoints another examiner for a second assessment. <sup>2</sup>The examination candidate has the right to propose the topic and to choose the examiner. <sup>3</sup>The topic is communicated to the examination candidate in writing or electronically by the chairperson of the examination committee, stating the deadline by which the Master's thesis must be submitted at the latest. <sup>4</sup>The date of issue of the topic is to be recorded. <sup>5</sup>The topic can be returned once within two weeks of issue.

(5)<sup>1</sup> The processing time for the master's thesis is a maximum of 6 months starting with the issue of the topic. <sup>2</sup>The content and scope of the Master's thesis topic must be such that it can be completed within the period specified in sentence 1. <sup>3</sup>Upon justified written or electronic application, the chairperson of the examination board may grant a grace period of a maximum

of six weeks; the application must be submitted to the examination office before the deadline expires. <sup>4</sup>Such an individual case is deemed to exist in particular if there is a considerable restriction of performance relevant to the examination, which must be proven, or in the case of circumstances which considerably impair the examination candidate in taking the examination, for which he or she is not responsible and which are directly linked to the content of the Master's thesis. <sup>5</sup>The decision on the existence of a justified individual case is the responsibility of the chairperson of the examination committee. <sup>6</sup>In the case of a decision in accordance with sentence 5, last half-sentence, he or she shall hear the person submitting the topic before making a decision.

(6)<sup>1</sup> The Master's thesis must be written in English. <sup>2</sup>Deviating from this, the chairperson of the examination committee may allow the master's thesis to be written in another language at the request of the examination candidate and with the consent of the topic proposer, provided that the assessment is ensured.

(7)<sup>1</sup> The provisions of good scientific practice apply to the preparation of the master's thesis. <sup>2</sup>The master's thesis may not have been submitted in the same or similar form as part of another examination. <sup>3</sup>If this is violated, the thesis is considered to be graded as "deficient (5,0)". <sup>4</sup>The decision is made by the examination board.

(8)<sup>1</sup> The master thesis contains a list of the aids used. <sup>2</sup>In addition, it must be accompanied by a declaration with the following wording: "I hereby declare in lieu of an oath that I have written this thesis independently and without the use of other than the stated aids. <sup>3</sup>All passages taken verbatim or in spirit from published and unpublished writings are identified as such. <sup>4</sup>The work has not yet been presented in the same or similar form in the context of another examination." <sup>5</sup>If the affirmation in lieu of oath was made falsely, the legal consequences according to the Criminal Code may apply.

(9) The Master's thesis must be submitted to the responsible examination office in due time in electronic form (exclusively PDF/A); the date of submission must be recorded on file.

(10)<sup>1</sup> The assessment of the Master's thesis is usually announced to the examination candidate within eight weeks after submission of the thesis by posting the assessment information in the campus management system. <sup>2</sup>If this regulation is deviated from, the reasons are to be put on record.

(11)<sup>1</sup> A Master's thesis graded "deficient (5.0)" or deemed deficient can be repeated once with a new topic in the same focus. <sup>2</sup>A change of focus is possible for the remaining attempt upon written or electronic application to the examination board. <sup>3</sup>The requirements for the master's thesis in this area of study must be fulfilled. <sup>4</sup>The provisions according to § 24 paragraph 1 remain unaffected. <sup>5</sup>The application for repetition must be made within 6 months. <sup>6</sup>A second repetition of a failed master thesis is excluded. <sup>7</sup>If a Master's thesis is not passed after one repetition, the course of study is definitively failed. <sup>8</sup>The repetition of a passed master thesis is excluded.

(12)<sup>1</sup> The notice of failure of the Master's thesis will be formally sent to the examination candidate by the chairperson of the examination committee to the postal address stored in the campus management system or electronically. <sup>2</sup>The decision shall be accompanied by instructions on how to appeal.

(13) The master's colloquium shall take place within 12 weeks after submission of the master's thesis. In justified exceptional cases, the examination board may allow exceptions to this deadline upon written or electronic application by the examination candidate. Prior to the colloquium, the examination office must receive the expert opinions on the Master's thesis. The master colloquium only takes place if the master thesis has been passed. A failed master colloquium can be repeated once.

## § 22

### **Audit Committee**

(1) For the organization of examinations and the tasks assigned by these regulations, the Faculty of Mathematics and Natural Sciences elects an examination board.

(2) The Audit Committee shall be composed of the following six voting members:

1. the chairperson from the group of university professors,
2. two further members from the group of university professors,
3. one member from the group of academic staff,
4. one member from the group of employees in technology and administration,
5. one member from the group of students.

(3) The Audit Committee shall elect a deputy for the chairperson from among the members pursuant to paragraph 2 no. 2.

(4)<sup>1</sup> One deputy shall be elected for each of the members pursuant to paragraph 2 nos. 2 to 5. <sup>2</sup>The alternates shall act if the members from the relevant group are prevented from attending the meeting.

(5) The Chairperson may invite other persons, in particular deputy members, to attend meetings of the Audit Committee, provided this appears to be appropriate and the majority of the voting members present do not object.

(6)<sup>1</sup> The members and their deputies according to paragraph 2 nos. 2 to 5 shall be elected by the Narrow Faculty of the Faculty of Mathematics and Natural Sciences separately according to groups. <sup>2</sup>The groups have a right of nomination. <sup>3</sup>The members from the group of university professors, from the group of academic employees and from the group of employees in technology and administration are elected for three years, the members from the group of students for one year. <sup>4</sup>Re-election is permitted. <sup>5</sup>The term of office of an alternate member ends with the term of office of the corresponding member. <sup>6</sup>If a member or a deputy pursuant to paragraph 2 nos. 2 to 5 retires prematurely, a successor shall be elected for the remaining term of office.

(7)<sup>1</sup> The Audit Committee constitutes a quorum if the chairperson or his/her deputy and at least two other voting members are present. <sup>2</sup>If the vice-chairman or vice-chairwoman chairs a meeting because the chairman or chairwoman is prevented from attending, his or her vice-

chairman or vice-chairwoman shall attend the meeting as a voting member in accordance with paragraph 4. <sup>3</sup>The Audit Committee shall pass resolutions by a simple majority of those present and entitled to vote. <sup>4</sup>In the event of a tie, the chairperson shall have the casting vote. <sup>5</sup>The members of the examination board from the group of employees in technology and administration shall only have voting rights in matters of teaching insofar as they perform corresponding functions in the university and have special experience in the respective area; such experience is to be assumed in particular if the employee fulfills the examiner status according to § 65 paragraph 1 sentence 2 HG. <sup>6</sup>The chairperson shall decide on the existence of these requirements at the beginning of the member's term of office and, in cases of doubt, the rectorate. <sup>7</sup>The members from the student group shall only vote on pedagogical-scientific decisions, in particular on the assessment and recognition of examination achievements, the determination of examination tasks as well as on decisions on objections in this respect, if they fulfill the examiner status according to § 65 paragraph 1 sentence 2 HG.

(8)<sup>1</sup> The Examination Committee shall ensure that the provisions of these Regulations, including the Annex, are complied with. <sup>2</sup>In particular, it decides on appeals against decisions made in examination procedures. <sup>3</sup>It reports regularly, at least once a year, to the Faculty of Mathematics and Natural Sciences on the development of Master's examinations and study times, discloses the distribution of overall grades and, if necessary, makes suggestions for amendments to these regulations.

(9)<sup>1</sup> The meetings of the Audit Committee are not open to the public and are generally held in person. <sup>2</sup>The chairperson may decide that the meeting is to be held by electronic communication. <sup>3</sup>The decision shall become invalid if half of the members of the Audit Committee object to it before the meeting. <sup>4</sup>In the case of meetings held by electronic communication, the chairperson may also decide that resolutions are to be passed by electronic communication; this may be deviated from by a resolution of the body. <sup>4</sup>Paragraph 7 sentence 1 shall apply to meetings by electronic communication with the proviso that "present" shall mean participating in the meeting. <sup>5</sup>Resolutions may also be adopted by circular resolution provided that no member objects. <sup>6</sup>The members and their deputies shall be bound by official secrecy. <sup>7</sup>If they are not in public service, they shall be sworn to secrecy by the chairperson.

(10)<sup>1</sup> The members of the examination board and their deputies have the right to be present at examinations. <sup>2</sup>The right to be present does not extend to the discussion of the examination result.

(11) The Examination Office of the Department of Geosciences is available to the Examination Committee for the organizational handling of the examination procedures.

(12)<sup>1</sup> The chairperson of the Audit Committee, or his/her deputy if the chairperson is prevented from doing so, shall represent the Audit Committee, convene the meetings of the Audit Committee, chair these meetings and implement the resolutions passed there. <sup>2</sup>The Audit Committee may delegate the performance of its duties to the Chairperson for all regular cases. <sup>3</sup>In case of urgency, the chairperson may conduct a vote by circular resolution. <sup>4</sup>He or she may take decisions that cannot be postponed in place of the examination board; the examination board must be informed of this without delay; the latter may rescind the decision; rights of third parties that have already arisen shall remain unaffected. <sup>5</sup>Decisions on appeals remain reserved for the examination board. <sup>6</sup>Minutes shall be taken for each meeting of the Examination Committee.

(13) The chairperson of the Examination Committee shall announce orders, the setting of dates and deadlines, and other communications of the Examination Committee which do not only affect individual persons, with legally binding effect, by posting notices or by other suitable means.

## § 23

### **Examiners, assessors , electronic verification**

(1)<sup>1</sup> Examiners are appointed from the group of university professors and from among the members and affiliates of the Faculty of Mathematics and Natural Sciences in accordance with § 65 paragraph 1 HG. <sup>2</sup>Examination performances may only be evaluated by persons who themselves possess at least the qualification to be determined by the examination or an equivalent qualification. <sup>3</sup>Examiners who have left the University of Cologne may be reappointed as examiners for a period of one year after the end of the semester in which they left. <sup>4</sup>Only those who have obtained a relevant degree at least at master's level or an equivalent qualification at a university may be appointed as assessors.

(2)<sup>1</sup> The examination board appoints the examiners and the assessors. <sup>2</sup>It may delegate the appointment to the chairperson. <sup>3</sup>The appointment of examiners and assessors shall be recorded in the records. <sup>5</sup>Notwithstanding the provision in sentence 1, the following shall apply: A lecturer shall be the examiner for the course for which he or she is responsible and which he or she conducts, unless the examination board makes a different appointment of an examiner.

(3)<sup>1</sup> The examination board appoints the examiners responsible for the Master's thesis from among the professors, associate professors, honorary professors, junior professors and private lecturers of the Faculty of Mathematics and Natural Sciences. <sup>2</sup>In justified exceptional cases, the examination board decides on the appointment of further examiners who fulfill the requirements according to § 65 paragraph 1 HG. <sup>3</sup>In particular, the appointment of second examiners who are not members of the Faculty of Mathematics and Natural Sciences, but who fulfill the requirements of § 65 paragraph 1 HG, is permissible, provided that the first examiner belongs to the group of university teachers of the Faculty of Mathematics and Natural Sciences. <sup>4</sup>The examination board may delegate the appointment to the chairperson. <sup>5</sup>Examiners who have left the University of Cologne may be reappointed as examiners for the Master's thesis for a period of one year after the end of the semester in which they left the University of Cologne. <sup>6</sup>The examination board may extend this period upon justified application. <sup>7</sup>It may delegate this decision to the chairperson. <sup>8</sup>The appointment of examiners for the Master's thesis must be recorded.

(4)<sup>1</sup> The examiners shall specify the working materials and aids permitted for the examinations they conduct and shall announce these in a suitable manner in good time, at the latest when the examination date for the respective examination is announced. <sup>2</sup>If no agreement can be reached, the examination board shall decide.

(5)<sup>1</sup> Upon general and announced decision of the examination board, written examination performances can be checked electronically for unmarked text transfers. <sup>2</sup>In this case, the examination candidates are obliged to submit the written examination results electronically as

well and to confirm that the contents of the written and electronic versions correspond. <sup>3</sup>The electronic verification pursuant to sentence 1 also includes the use of written examination performances for the purpose of comparison with subsequent written examination performances of third parties, provided that there is a factual connection between the examination performances. <sup>4</sup>The resolution pursuant to sentence 1 must regulate,

- a) which examination performances can be checked electronically,
- (b) whether the audit committee makes use of an administrative assistant and, if so, who that assistant is,
- c) in which file format, in which way and at which place the electronic version shall be submitted,
- d) according to which criteria the audit performances to be reviewed are selected; and
- e) how long the electronic versions may be used.

<sup>5</sup>Notwithstanding sentence 1, electronic verification is always permissible in the event of justified initial suspicion of cheating. <sup>6</sup>Notwithstanding sentence 4, use of the electronic version shall end at the latest at the same time as the retention period for the examination file in accordance with Section 26 (4).<sup>7</sup> Without the consent of the examination candidate, use of the electronic version by examiners or the examination committee for purposes other than the assessment or review of examination performance is not permitted. <sup>8</sup>The result of an electronic examination may only form the basis of an incriminating examination decision if it has been confirmed by the responsible examiners.

(6)<sup>1</sup> Examiners are independent of instructions in their examination activities. <sup>2</sup>They and, if applicable, the assessors are subject to official secrecy. <sup>3</sup>If they are not in public service, they must be sworn to secrecy by the chairperson of the examination board.

## **§ 24**

### **Deception, breach of order**

(1)<sup>1</sup> If an examination candidate attempts to influence the assessment of an examination performance by deception for his/her own or another's advantage, if he/she carries aids not permitted in the examination or if he/she commits scientific misconduct in the performance of the examination, he/she commits an act of deception. <sup>2</sup>Non-approved aids can be confiscated by the invigilators after completion of the examination, which the examination candidate is entitled to terminate, with the consent of the examination candidate for the purpose of preserving evidence.

(2)<sup>1</sup> Depending on the severity of the act of cheating according to Paragraph 1, the Examination Committee shall pronounce one of the following sanctions against the examination candidate:

- a) a warning;

- b) the examination candidate is ordered to repeat the examination performance to which the act of cheating relates;
- c) the examination performance to which the act of deception relates shall be deemed to have been assessed as "deficient (5.0)" or "failed",
- d) the examination to which the act of deception relates is declared definitively failed;
- e) the examination candidate is excluded from taking further examinations, as a result of which the examination entitlement in the degree program expires.

<sup>2</sup>A serious violation can be considered in particular in cases of the use of unauthorized aids, the (attempted) exertion of influence on the examiner or, in cases of plagiarism, in which sources are deliberately concealed by reformulating the original texts, rearranging the syntax or using synonyms. <sup>3</sup>A particularly serious case can be considered in particular in the case of an elaborate use of technical aids such as internet-capable cell phones, in the case of repeated acts of deception in different examinations, in the case of organized cooperation between several persons, in the case of the adoption of an entire work by another person as one's own performance, the falsification of scientific work or the sabotage of examination work and the research activities of others.

(3) Particularly in the case of justified suspicion of plagiarism, the Examination Committee may also have further - including electronic - checks carried out without the consent of the examination candidates.

(4) As a consequence of an act of deception in accordance with Paragraph 1, the relevant course work shall be deemed not to have been completed.

(5)<sup>1</sup> Anyone who disturbs the performance of an examination can be warned by the respective examiners or invigilators. <sup>2</sup>If the warnings remain ineffective or if the disruption is serious, the examination candidate can be excluded from further performance of the examination. <sup>3</sup>In this case, the examination board may assess the examination performance as "deficient (5.0)" or "failed". <sup>4</sup>The reasons for the exclusion are to be recorded.

(6)<sup>1</sup> Before a decision is made by the examination board, the examination candidate must be given a legal hearing. <sup>2</sup>The examination candidate must be informed of the decision in writing without delay, the reasons for the decision must be given and the decision must be accompanied by instructions on how to appeal.

(7)<sup>1</sup> In addition, administrative offence proceedings may be initiated in accordance with Section 63 (5) HG. <sup>2</sup>It is also a misdemeanor to intentionally attempt to influence the result of an examination to someone else's advantage.

## **§ 25**

### **Invalidation of examination results, revocation of the master's degree**

(1)<sup>1</sup> If the requirements for admission to an examination were not met without the candidate intending to deceive, and if this fact only becomes known after the certificate has been issued, this defect shall be remedied by passing the examination. <sup>2</sup>If the examination

candidate has intentionally obtained admission unlawfully, the examination board shall decide on the legal consequences, taking into account the provisions of the Administrative Procedure Act of the State of North Rhine-Westphalia (VwVfG NRW).

(2) If an examination candidate has cheated in an examination performance and this fact only becomes known after the certificate has been issued, the Examination Committee may subsequently withdraw the assessment for that examination performance in the performance of which the examination candidate has cheated, subject to the requirements of § 48 VwVfG NRW, and impose a sanction in accordance with § 24 appropriate to the seriousness of the cheating.

(3) The Master's degree may be revoked if it is found to have been obtained by deception or if essential requirements for the award have been erroneously considered to have been met.

(4)<sup>1</sup> The examination candidate must be given the opportunity to comment before a decision is made in accordance with paragraphs 1 to 3. <sup>2</sup>The examination board is responsible for the decision, and it shall make its decision in compliance with the provisions of the Administrative Procedure Act of the State of North Rhine-Westphalia (VwVfG NRW). <sup>3</sup>A decision is excluded after a period of five years from the date of the certificate.

(5)<sup>1</sup> The incorrect certificate as well as all incorrect attachments will be confiscated and, if necessary, reissued. <sup>2</sup>If the study program as a whole has been declared failed, the academic degree shall be withdrawn by the Faculty of Mathematics and Natural Sciences and the Master's certificate shall be confiscated.

## **§ 2 6**

### **Examination file, inspection of files**

(1)<sup>1</sup> An examination file is kept by the examination board for each examination candidate. <sup>2</sup>The examination file documents in particular the examination attempts, the examination papers, the related opinions of the examiners, the examination protocols, the examination results, grade calculations and copies of the certificates and diplomas. The examination file is kept in writing or in full or in part electronically.

(2) An examination candidate may inform himself/herself about the status of the examination results at any time within the scope of organizational possibilities.

(3)<sup>1</sup> After the announcement of an examination result, each examination candidate or his or her authorized representative shall be granted access, upon written or electronic request, to his or her written performance in this examination and the related reports and correction notes of the examiners as well as to the minutes of oral examinations. <sup>2</sup>Within the scope of this inspection, the examination candidate or his or her authorized representative must be given the opportunity to make either copies or photographs of the documents; any sample solutions that may have been issued may not be copied or photographed since they are not part of the examination candidate's examination file. <sup>3</sup>The further procedure for inspection, including an appropriate deadline for the inspection request, is regulated by the examination board. <sup>4</sup>After

expiry of the specified deadlines, inspection is generally only possible if an examination candidate is demonstrably not responsible for missing the deadline. <sup>5</sup>As a rule, there is no further right to information.

(4)<sup>1</sup> The examination file shall be kept until the end of the fifth year following exmatriculation from this degree program and then offered to the responsible archive; if the archive refuses to accept it, it must be destroyed. <sup>2</sup>The academic degrees awarded and a cataloged collection of the certificates and diplomas awarded may be kept in a register until the end of the fiftieth year following the completion of the course of study; sentence 1, second half-sentence applies accordingly.

(5)<sup>1</sup> Examination questions, correction notes and examiners' reports of which a student becomes aware may not be passed on to third parties or published if they are protected by copyright. <sup>2</sup>The thesis prepared by a student may only be published with the corresponding consent if a blocking notice has been agreed. <sup>3</sup>This is without prejudice to justified interests in legal protection, for example in the form of disclosure to a commissioned lawyer.

## **§ 27**

### **Degree and graduation documents**

(1)<sup>1</sup> The study program is successfully completed when all required examination achievements have been passed and the credit points according to § 5 have been acquired. <sup>2</sup>A certificate is issued for the successful completion of studies. <sup>3</sup>The certificate is signed by the chairperson of the examination board and contains the name of the study program, the name of the selected focus, the overall grade, the grade of the individual modules and the topic of the master's thesis. <sup>4</sup>Grades are indicated in words and numerically. <sup>5</sup>It is issued with the date of the day on which the last examination performance was rendered or recognized. <sup>6</sup>If the Master's thesis is the last examination performance, the date of submission applies.

(2)<sup>1</sup> Together with the certificate, the student will receive the Master's degree certificate, which certifies the award of the degree according to § 3; this certificate bears the date of the certificate. <sup>2</sup>The Master's certificate is signed by the Dean of the Faculty of Mathematics and Natural Sciences and by the Chairperson of the Examination Committee and bears the seal of the Faculty of Mathematics and Natural Sciences.

(3)<sup>1</sup> Together with the certificate and the Master's degree certificate, a Diploma Supplement in German and English is handed out, which provides information about the professional profile of the completed study program and the academic and professional qualifications acquired with the degree. <sup>2</sup>The Diploma Supplement also describes the degree program completed and provides information about the faculty. <sup>3</sup>Part of the Diploma Supplement is the Transcript of Records.

(4)<sup>1</sup> If a student has not passed or has definitively failed the course of study or has dropped out, or if he or she is changing universities, a certificate (Transcript of Records) will be issued to him or her upon request, showing the examinations taken, the supplementary studies and achievements, the grades and the credit points earned. <sup>2</sup>If applicable, it must indicate that the studies have not been passed or have been definitively failed.

## **§ 2 8**

### **Transitional provisions**

(1) These regulations apply to all students who have been enrolled for the first time or after an interruption for the first time in the Master's degree program regulated by these regulations or who have been admitted as a second student at the University of Cologne as of the winter semester 2022/23.

(2)<sup>1</sup> On 01.10.2022, students already enrolled in the Master's degree program in Computational Sciences at the University of Cologne or students admitted as second students may continue their studies in accordance with these regulations in their previous degree program, while having their previous examination results recognized. <sup>2</sup>The change must be applied for in writing or electronically to the chairperson of the examination board and cannot be reversed.

(3) The Examination Committee shall ensure that credit points already earned in modules that change in type or scope or are omitted continue to be used to complete the degree program.

## **§ 2 9**

### **Publication and entry into force**

(1) These regulations shall be published in the Official Notices of the University of Cologne.

(2) These Regulations shall enter into force with effect from 01.10.2022.

Issued on the basis of the resolution of the Narrow Faculty of the Faculty of Mathematics and Natural Sciences of 27.01.2022 and after examination of the legality by the Rectorate of 15.02.2022.

Cologne, 09.03.2022

The Dean of the Faculty of Mathematics and Natural Sciences of the University of Cologne

University Professor Dr. Ir. Paul H. M. van Loosdrecht