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# Examination Regulations

for

## Information Engineering and Computer Science M.Sc.

Faculty of Communication and Environment  
Rhine-Waal University of Applied Sciences

Dated 13 January 2021  
(Official Notice 22/2021)

In accordance with Section 2 (4) sentence 1 and Section 64 (1) of the Higher Education Act of North Rhine-Westphalia (*Hochschulgesetz – HG NRW*), in the amended form produced by the Act for the Future Development of Universities (*Hochschulzukunftsgesetz*) of 16 September 2014 (GV.NRW. 2014, p. 547), which entered into force on 1 October 2014 and was last amended by Article 1 of the Act of 1 December 2020 (GV.NRW. 2017, p. 1110), which entered into force on 8 December 2020, and the General Examination Regulations for Bachelor's and Master's Degree Programmes at Rhine-Waal University of Applied Sciences (RPO) from 3 January 2018 (Official Notices 07/2018), the Faculty Council of the Faculty of Communication and Environment of Rhine-Waal University of Applied Sciences has enacted the following Examination Regulations:

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## **Section 1 Scope**

These Examination Regulations apply to the postgraduate degree programme Information Engineering and Computer Science M.Sc., offered in English by the Faculty of Communication and Environment of Rhine-Waal University of Applied Sciences, and are valid in conjunction with the General Examination Regulations of Rhine-Waal University of Applied Sciences (“RPO”).

## **Section 2 Academic objectives; Purpose of examination; Degree awarded**

(1) With due regard to the general academic objectives outlined in § 58 HG NRW, this master’s degree programme aims to convey, in particular, application-oriented content on the basis of sound scientific knowledge and empower students to apply methodologies from the fields of the natural sciences, engineering and computer science and develop practice-oriented solutions that go beyond traditional disciplinary boundaries. A strong command of the English language is essential to success in this degree programme, as it is a necessary prerequisite for the overarching goal of consolidating and expanding students’ technical language and communication skills.

(2) Moreover, this master’s degree programme aims to produce graduates who:

- grasp the many interrelated concepts within the discipline and their chosen emphasis area, and can link these concepts to knowledge and skills of other disciplines;
- can conduct scholarly research and employ scientific methodology to a sufficient extent in order to complete a dissertation;
- are adept at developing evidence-based solutions with real-world applicability;
- can apply theoretical-analytical skills to a wide range of complex cases;
- possess both the technical know-how and key skills necessary for a seamless transition from academia to the workforce.

In addition, this degree programme aims to convey and promote certain intellectual and interpersonal skills. These include, in particular, abilities and characteristics such as:

- an abstract, analytical, logical and networked way of thinking;
- the ability to familiarise oneself quickly and efficiently with new fields and challenges;
- self-reliance, creativity, open-mindedness and plurality;
- professional communication;
- openness to giving and receiving professional criticism.

(3) This degree programme is concluded with a final assessment: the master's examination. Its purpose is to assess the overall individual performance of each student in order to determine whether the aforementioned goals have been achieved.

(4) The academic title Master of Science, abbreviated as M.Sc., is awarded for successful completion of the master's examination.

### **Section 3 Admission requirements**

Admission to this degree programme is governed by the Admission Regulations for Information Engineering and Computer Science M.Sc. of the Faculty of Communication and Environment of Rhine-Waal University of Applied Sciences.

### **Section 4 Standard period of study; Programme structure; Volume of instruction hours**

(1) The standard period of study, including all examinations, is three semesters.

(2) This degree programme is organised into modules. As a rule, a "module" refers to a group of thematically-related and chronologically-coordinated individual courses that strive for a common objective in terms of learning outcomes or qualifications. The thesis and the colloquium each constitute separate modules. The modules of this degree programme comprise a total sum of 90 credits according to the ECTS framework defined in Section 5 (5).

(3) This degree programme has a total volume of instruction of 47 weekly contact hours (SWS, German: *Semesterwochenstunden*).

(4) Additional information about how this degree programme is organised and the type, form and scope of modules can be found in the study and examination plans in the annex. Additional information about learning outcomes, qualification aims, contents and forms of examination can be found in the corresponding module guide, which is available for viewing in the faculty's central office.

## **Section 5**

### **Components of the final master's examination; Credit points**

(1) The final master's examination is made up of all examinations completed in conjunction with a module as well as a final examination phase, which consists of the thesis and the colloquium (refer to the study and examination plan for details).

(2) In accordance with the study and examination plan, module-related examinations cover either a module as a whole or an individual course therein and thus mark either the full or partial conclusion of a module. Examinations are held either during the lecture period or immediately thereafter. The thesis topic is usually assigned in the second half of the second semester and in a timely manner such that the colloquium can be held before the end of the semester.

(3) The progression of this degree programme, as well as examinations, are planned in such a way that the master's examination can be completed within the standard period of study.

(4) Examination procedures must account for the rights granted to students under the German Maternity Protection Act and the German Parental Benefits and Leave Act, as well as the right to a leave of absence to provide care to immediate family (refer to Section 48 (5) sentence 5 HG NRW). As a rule, taking advantage of these protections requires a written request to your Examination Board.

(5) The final master's examination follows a credit-based system. All modules and courses are assigned a value in credit points according to the European Credit Transfer and Accumulation System (ECTS). The number of assigned credit points depends on the prescribed workload needed, on average, to successfully complete the individual courses and the module as a whole. As per the ECTS standard, one credit point is equivalent to 25-30 hours of study. In addition, credit point values are based on an assumed workload of 60 credits for an entire academic year. Credits are awarded to a student when he or she has successfully completed all module requirements. These credits are recorded in an individual file for each student, which is maintained by the Examination Board.

## **Section 6**

### **Examination Board**

(1) An Examination Board shall be established in order to assume the duties and obligations arising from these Examination Regulations. The Examination Board is an independent body of Rhine-Waal University of Applied Sciences, as well as a public authority within the scope of German administrative procedural law. It shall consist of a Chair, a Deputy Chair and six additional members. The Chair, Deputy Chair and two additional members shall be elected by the Faculty Council from among the faculty's professors, one member from the faculty's research staff, one member from the faculty's non-academic staff, and two members from the faculty's student body. The term in office for full-time employees of the University and their proxies shall be four years; the term in office for student members and their proxies shall be one year. Re-election is permitted.

(2) The Examination Board is responsible for ensuring compliance with these Examination Regulations. It is responsible for the organisation and proper conduct of examinations. The fundamental responsibility of the dean as defined by HG NRW, Section 27 (1), shall remain unaffected. The Examination Board is responsible, in particular, for deciding the outcome of appeals lodged against decisions made during examination procedures. In addition, the Examination Board is responsible for presenting an annual report to the Faculty Council regarding ongoing trends and developments in both examinations and the lengths of study. This report shall also include reform recommendations for examinations and curricula. The Examination Board may delegate its everyday duties and tasks to the Chair, but not in the case of decisions related to lodged appeals.

(3) The Examination Board shall have a quorum when the Chair or Deputy Chair, at least one additional professor and at least two other members with voting power are present at a meeting. Furthermore, at least half of the members with voting power in attendance must be professors. Measures are passed by simple majority. In the event of a tie, the deciding vote shall be cast by the Chair. Student members of the Examination Board, as well as the member from the faculty's research staff, shall not participate in decisions of an academic-pedagogic nature, in particular with regard to the recognition or otherwise evaluation of examinations or the appointment of examiners and observers. Moreover, student members of the Examination Board shall not participate in decisions or discussions on issues that relate to their own examinations or to examination tasks. For those cases described in sentence 5, the Examination Board shall have a quorum when the Chair or Deputy Chair and at least two additional professors are present.

(4) Members of the Examination Board have the right to observe examinations. This right does not extend to the student members with regard to examinations that they will be sitting for on the same day.

(5) All members of the Examination Board, their proxies, examiners and observers are subject to strict confidentiality. Those members not currently employed in public service shall be sworn to confidentiality by the Chair.

(6) Any detrimental decisions made by the Examination Board or the Chair shall be communicated to the affected student without delay. The student has the right to be heard before a decision is final.

## **Section 7 Examiners and observers**

(1) All teaching staff at Rhine-Waal University of Applied Sciences are authorised to act as examiners. In some exceptions, others may also be authorised to act as examiners, provided they possess the necessary vocational and professional experience and this decision has been deemed necessary and appropriate for accomplishing the intended examination outcome (as second examiner for a thesis, for example). Examiners themselves must possess the qualifications being assessed by the examination, or equivalent; this also applies to any qualified observers present during an oral examination. Examiners and observers are appointed by the Examination Board. They are not bound by any outside instruction in their duties.

(2) The Examination Board is responsible for ensuring that examination obligations are distributed as evenly as possible amongst examiners.

(3) The Chair of the Examination Board shall notify students of the names of the assigned examiners in a timely manner. Notification shall occur ideally upon admission to the examination, but as a rule no later than two weeks before the scheduled examination or, in the case of the thesis, no later than when the topic is assigned. Notification by electronic means, public display or other automated process is sufficient.

## **Section 8**

### **Credit transfer and recognition**

(1) Credits earned in degree programmes at other state universities or state-recognised universities, state vocational academies or state-recognised vocational academies, or foreign state or state-recognised universities, or at Rhine-Waal University of Applied Sciences will be recognised upon request if there is no significant difference in terms of acquired knowledge and skills to the courses or modules they would replace. This also applies to degrees earned in programmes offered by institutions within the meaning of sentence 1.

(2) Credited coursework from a previous institution is considered to have “no significant difference” if its learning objectives correspond in essence to those of the degree programme at Rhine-Waal University of Applied Sciences. Equivalence shall not be determined by schematic comparison, but rather by considering and evaluating the sum of knowledge and skills that were imparted. Decisions on equivalence for credits from foreign universities will take into consideration the equivalence agreements of the Standing Conference of the Ministers of Education and Cultural Affairs (*Kultusministerkonferenz*) and the Standing Conference of University Rectors (*Hochschulrektorenkonferenz*), as well as any applicable agreements within the framework of interinstitutional partnerships. Where doubt remains regarding equivalence or essential differences in content, the Central Office for Foreign Education (*Zentralstelle für ausländisches Bildungswesen*) can be consulted for guidance.

(3) Skills and qualifications acquired by other means can also be credited.

(4) Students are required to provide the Examination Board with necessary documentation for credit transfer requests. Documents must clearly state the previous time period of study and any examinations or other skills or qualifications completed in conjunction which should be credited. As a rule, credit transfer requests require a copy of the corresponding examination regulations, module description(s) and the requesting student’s Transcript of Records or a comparable document. Credit transfer requests should generally be submitted during the first year of study at Rhine-Waal University of Applied Sciences.

(5) If prior examinations, skills or other qualifications are recognised for credit, then the marks – provided marks were awarded and the grading system is compatible – shall be incorporated into the student’s current GPA. If no marks were awarded or the grading system is incompatible, but it is possible to surmise a mark based on specific evidence or indicators, then a mark shall be awarded according to the scale in Section 11 (3) and the credit transfer process shall proceed according to sentence 1. If the grading systems are incompatible and a



specific mark cannot be surmised due to a lack of evidence, then the examination in question shall be credited without a mark and not incorporated into the student's current GPA. If a failed examination is transferred, this will be documented with a single "failed"; the process for repeating this examination is set forth in Section 11. Transferred credits shall be documented in the final grade certificate (see Section 25 (1)).

(6) (Intentionally omitted)

(7) The Examination Board is responsible for all credit transfer decisions. Before decisions are final, the responsible subject representatives at the University must be heard.

### **Section 9 Entrance examination**

(1) Applicants who have acquired the skills and knowledge needed for university, but by means other than previous study experience, are eligible to sit for an entrance examination that may allow them to commence their studies in a more advanced semester, provided this does not clash with any applicable regulations for the allocation of space at German universities.

(2) Depending on the results of the entrance examination, the applicant may be partially or fully exempted from certain courses and their corresponding examination or certificate requirements. The applicant shall be notified of this decision.

(3) The type, form and scope of the entrance examination are regulated by the Entrance Examination Regulations of Rhine-Waal University of Applied Sciences.

### **Section 10 Assessment of examinations**

(1) Examination performance is assessed via marks. Marks are awarded on an individual basis by the responsible examiner.

(2) If multiple examiners are involved in an examination, they will jointly evaluate the examination as a whole, unless otherwise specified below. If the examiners do not come to a consensus, the awarded mark will be determined by averaging the individually awarded scores.

(3) The following grading scheme shall be used for examinations:

1	=	Very Good	=	excellent performance on the examination;
2	=	Good	=	a performance well above the average;
3	=	Satisfactory	=	average performance;
4	=	Sufficient	=	meets minimum requirements despite shortcomings;
5	=	Failed	=	performance does not meet minimum requirements due to significant shortcomings.

Base marks can be raised or lowered by 0.3 points for more precise assessment; the marks 0.7, 4.3, 4.7 and 5.3 cannot be awarded.

(4) The following ranges apply to the aforementioned assessment scale:

1.0 – 1.5	=	Very Good
1.6 – 2.5	=	Good
2.6 – 3.5	=	Satisfactory
3.6 – 4.0	=	Sufficient
4.1 – 5.0	=	Failed

Only the first digit after the decimal is taken into account; all other decimal places are dropped without rounding.

(5) A mark of Sufficient (4.0) or better is passing.

(6) For modules consisting of multiple examinations, the overall mark is calculated by averaging the scores of the individual examinations. Scores are weighted according to credit values.

(7) Students shall be notified of the results of written examinations within the meaning of Section 16 within six weeks of the end of the examination phase in which they occurred. Students shall be notified of the results of written examinations within the meaning of Section 18 within six weeks of the examination. Notification by electronic means or public display is sufficient. Students shall be notified of the results of their thesis within eight weeks. The results of oral examinations are disclosed immediately after their conclusion.

(8) The final cumulative mark for the master's assessment is supplemented by an ECTS grade, which provides a relative assessment of performance in addition to an absolute value. The ECTS grade is a comparison of a student's individual academic performance to the

performance of other graduates of his or her degree programme. Accordingly, graduates who are among the:

top 10 % of their class will receive the grade:	A;
the next best 25% will receive the grade:	B;
the next best 30% will receive the grade:	C;
the next best 25% will receive the grade:	D;
and the remaining 10% will receive the grade:	E.

### **Section 11 Repeating an examination**

- (1) Examinations occurring in regular modules can be repeated two additional times. The thesis and the colloquium can be repeated one time each.
  
- (2) Examinations which were passed cannot be repeated for a better mark.

### **Section 12 Withdrawal, cheating, violating regulations**

- (1) An examination shall be assessed as Failed (5.0) if a student has registered but fails to appear without good reason, or if a student withdraws from an examination in progress without good reason, or if a student does not complete an examination before the deadline. Sentence 1 shall also apply to cases in which a student does not submit the thesis or an examination in the form of an assignment, term paper or project before the deadline without good reason.
  
- (2) The Examination Board must be notified immediately and in writing of any mitigating circumstances for missing an examination, withdrawing from an examination in progress or failing to submit an examination before the deadline, and credible supporting evidence must be provided. In cases of illness, the Examination Board reserves the right to request a medical certificate from a doctor of the Board's choosing. If the Examination Board recognises the mitigating circumstances, the student will be notified that he or she may re-register for the examination without penalty.
  
- (3) If a student attempts to alter the results of an examination through cheating or the use of any unauthorised aids, then the examination in question shall be evaluated as Failed (5.0). A student who disrupts the due and orderly conduct of an examination can be excluded from the room, usually after a warning from the examiner or invigilator; in this case the excluded student

shall receive the mark Failed (5.0) for the examination attempt. The reasons for exclusion shall be put on official record. Students excluded from an examination may appeal the decision to the Examination Board. This right also applies to exclusions on the basis of cheating or the use of unauthorised aids.

(4) In the event of repeated or unusually serious examination offences, the master's examination may be declared irreversibly failed. The Examination Board is responsible for this decision. If a master's assessment is declared irreversibly failed, the affected student shall be automatically expelled from the degree programme.

### **Section 13**

#### **Purpose, scope and type of examinations**

(1) The purpose of examinations in regular modules is to continually assess over the course of a student's studies whether he or she has become proficiency in the contents and methods of specific subject areas and can apply this acquired proficiency in an independent and correct manner.

(2) Examination requirements are based on the contents of the related courses. The contents of an examination will generally remain unchanged for a maximum of three subsequent opportunities to sit for that examination.

(3) Examinations are generally conducted as written examinations (Section 16), oral examinations (Section 17), or assignments, term papers and projects (Section 18). A combination of these examination types is also possible with the consent of the Examination Board.

(4) The Examination Board will set the form of examination (as well as the duration in the case of written examinations) generally before the start of the corresponding module/module component, in agreement with the examiner(s), and in a uniform and binding manner for all participating students. In addition, the Examination Board will notify students of the form and duration of the examination. Notification by electronic means, public display or other automated means is sufficient.

**Section 14**  
**Examination registration requirements**

- (1) Students are permitted to register for examinations for modules or components thereof if they:
1. fulfil the general admission requirements set forth in Section 3; and
  2. are officially enrolled as students or have visiting student status at Rhine-Waal University of Applied Sciences on the date of examination.
- (2) Applications for admission to an examination must generally be submitted via the appropriate online registration tool before the deadline set by the Examination Board, or otherwise in writing to the Chair of the Examination Board.
- (3) Requests must include documentation that the prerequisites in subsection (1) have been met, provided these documents were not submitted previously.
- (4) Admission shall be denied if:
- a) the prerequisites in subsection (1) have not been met; or
  - b) submitted documents were incomplete and missing documents were not submitted before the deadline set by the Examination Board; or
  - c) the student in question has previously failed the final attempt at a mandatory examination in the same degree programme, or the final attempt at an examination corresponding to the one in the application in a related or comparable degree programme at a university subject to the German Basic Law.
- (5) The Chair of the Examination Board, or the Examination Board itself in cases of doubt, is responsible for decisions regarding admission to an examination. Notification by electronic means, public display or other automated means is sufficient.
- (6) Students can submit an examination withdrawal request to the Chair of the Examination Board, generally via the appropriate online tool or otherwise in writing, no later than seven days before the examination deadline without loss of an attempt.

## **Section 15**

### **Conduct of examinations**

(1) Dates for examinations shall be set in such a way that they do not require the cancellation of any teaching.

(2) Students shall be notified of the date of an examination in a timely manner, generally at least two weeks before the examination in question is to occur. Notification by electronic means, public display or other automated means sufficient.

(3) For identification purposes, students must present their student ID as well as an official photo ID (e.g. passport) upon request by the examiner or invigilator.

(4) If a student with a disability within the meaning of Section 3 of the Equal Rights for Disabled Persons Act of Germany [*Behindertengleichstellungsgesetz*] can demonstrate via medical certificate or other credible means that he or she is unable to sit for the examination in part or in full in its current form due to his or her impairment, then the Chair of the Examination Board may permit the student to participate in an equivalent examination with a more suitable form. The Chair of the Examination Board is responsible for ensuring, to the fullest extent possible, that examination arrangements create no disadvantages for students with a disability; where uncertainty remains, the Chair may request further evidence of impairment from potentially affected students. Special examination arrangements can include, in particular:

- extending the duration/time allotted for an examination;
- individual rest breaks during a timed examination;
- splitting an examination into smaller parts;
- alternate forms of testing (oral examination instead of a written examination, or vice versa);
- permitting or providing testing aids, personal assistance, adapted exam sheets or separate testing areas.

## **Section 16**

### **Written examinations**

(1) The purpose of a written examination is to assess whether students can identify problems in a particular subject area and solve them using relevant methods and techniques with a limited amount of time and access to materials. Written examinations may also be conducted on a computer with the approval of the Examination Board, provided technical conditions ensure compliance with all statutory data privacy and protection requirements.

(2) The time allotted for a written examination depends on the number of weekly instruction hours (SWS) for the corresponding module or component thereof. As a rule, 60 minutes shall be allotted for every two weekly instruction hours (SWS).

(3) Written examinations are conducted under supervision. The examiner shall decide which aids, if any, may be used during a written examination.

(4) In general, written examinations are developed by a single examiner. Where justified by subject matter, particularly when multiple disciplines are covered by a single examination, multiple examiners may develop the examination together. In this case, the examiners shall first jointly define the weighting of the different parts of the examination.

(5) If a student is on his or her third and final attempt at a written examination, then this attempt shall be evaluated by two examiners. In all other cases, evaluation by a single examiner is sufficient. In those cases described in subsection (4) sentence 2, each examiner shall assess, in general, only their respective part of the examination; sentence 1 remains unaffected.

### **Section 17** **Oral examinations**

(1) Oral examinations shall be conducted by a single examiner in the presence of a qualified observer or by a panel of examiners as a group or an individual examination. In examinations where an observer is present, the examiner shall first consult with the observer before awarding a mark. In examinations conducted by a panel of examiners, the examiners shall jointly evaluate the examination performance.

(2) An oral examination generally requires between 30 and 45 minutes per student. In the case of a group examination, students will be notified of the length in a timely manner.

(3) A record shall be kept of the main discussion points and the results for each oral examination, including, in particular, the essential facts used to determine the mark.

(4) Students intending to sit the same oral examination at a later date are permitted to attend the examination of others, provided sufficient space is available and no students being tested object. Observing students are not permitted to be present during post-examination discussions or the disclosure of the mark.

## **Section 18**

### **Assignments, term papers and projects**

(1) Examinations assigned as take-home assignments, term papers or projects involve clearly defined tasks derived from the theoretical and practical context of the subject area being tested. They may be supplemented with an additional presentation and/or technical discussion. These examinations may be completed as a group if each student's individual contribution is sufficiently recognisable and verifiable. The topic and task must be defined such that it is possible to complete the assigned work before the deadline.

(2) The time allotted for an assignment, term paper or project shall not exceed four (4) months. The text portion of the work should generally not exceed 30 pages (DIN A4, excluding annexes).

(3) The Chair of the Examination Board or the assigning examiner shall notify students in writing, by public display or electronic means of the task, deadline and proper method of submission of an assignment, term paper or project.

(4) Section 16 (5) sentences 1 and 2 shall apply accordingly.

(5) When submitting an assignment, term paper or project, students must confirm in writing that his or her work – or, in the case of group work, his or her appropriately identified individual contribution – was produced independently and made use of no resources or sources other than those which were clearly cited, with quotations duly marked as such.

## **Section 19**

### **Master's thesis**

(1) The master's thesis serves to assess whether students can use both scholarly and applied research methods to develop a practice-oriented work in their field independently and within a limited period of time. Students themselves must demonstrate in their thesis that they have systematically and methodically studied the subject area, that they developed a solution using abstract and analytical thinking that went beyond the isolated case, and that they took both the technical minutiae and overarching correlations of the assigned topic into due consideration. The thesis is usually an independent scientific inquiry into the assigned topic with a detailed description and explanation of the results. The thesis topic will be assigned and supervised by a professor or other suitably qualified teacher (with the title of *Hochschuldozent/in* or *Privatdozent/in*) of the Faculty of Communication and Environment who also teaches within



the master's degree programme. Students are entitled to suggest possible thesis topics.

(2) The thesis topic can be assigned and supervised by any professor or suitably qualified teacher (with the title of *Hochschuldozent/in* or *Privatdozent/in*) who is authorised to act as an examiner according to Section 7 (1). At the student's request, the Examination Board can also appoint as a supervisor an honorary professor or a lecturer with previous experience as a thesis supervisor. The thesis can also be completed at a company or institution outside of the university, provided that a sufficient level of supervision can be assured and with approval of the Examination Board. Students shall be given the opportunity to suggest possible topic areas for their thesis.

(3) The Chair of the Examination Board shall ensure that students are assigned a thesis topic in a timely manner upon request.

(4) The master's thesis can also be permitted as group work if each student's individual contribution meets the requirements in subsection (1) above and is clearly distinguishable – and thus assessable – due to distinct separation by section, page numbers or other criteria.

(5) The text portion of the thesis should generally be between 70 and 90 pages (DIN A4) in length; the exact requirement will be set by the supervisor. The thesis may also be supplemented with other media, subject to the approval of the supervisor and provided their use can be considered appropriate and helpful as additional documentation within the context of the assigned task.

## **Section 20**

### **Admission to the thesis**

(1) Students are eligible for admission to the master's thesis if they:

1. have fulfilled the admission requirements defined under Section 3; and
2. are officially enrolled as students at Rhine-Waal University of Applied Sciences or as visiting students (refer to Section 52 (2) HG NRW) in this master's degree programme for the duration of the thesis; and
3. have obtained at least 50 credit points in this master's degree programme.

(2) Requests for admission to an examination must be submitted to the Chair of the Examination Board via the appropriate online registration tool before the deadline set by the Examination Board. This request must also include a declaration of any previously failed

attempts at a master's thesis. Further, the request must clearly indicate the name of the examiner who will be assigning the topic and acting as thesis supervisor.

(3) Students may withdraw their requests via the appropriate online registration tool at any time without loss of an examination attempt until a decision has been disclosed.

(4) The Chair of the Examination Board, or the Examination Board itself when in doubt, is responsible for decisions regarding admission to the thesis. Requests for admission shall be denied if:

- a) the prerequisites in subsection (1) have not been met; or
- b) required documents are missing or incomplete; or
- c) the student in question has previously failed the final attempt at a master's thesis in the same degree programme, or the final attempt at a master's thesis in a related or comparable degree programme at a university subject to German Basic Law.

## **Section 21**

### **Date of assignment and conditions for writing the thesis**

(1) The master's thesis is formally assigned by the Chair of the Examination Board. The assignment date is defined as the day on which the Chair of the Examination Board notifies the student of the topic assigned by the thesis supervisor; this date shall be put on official record.

(2) Students shall be given a period of 20 weeks (from the assignment date to the submission deadline) to complete the thesis. The thesis may not be submitted within eight weeks of the assignment date. The topic and task of the thesis must be set in such a way that it is feasible to complete the thesis before the deadline. In exceptional cases, the Chair of the Examination Board can extend the deadline by up to four weeks on the basis of a duly justified request that was submitted before the original deadline. The thesis supervisor shall be consulted in connection with this request.

(3) Students may request a new thesis topic for any reason, but only once and only within four weeks of the assignment date. Students on their second attempt at the master's thesis may only request a new topic if not done so on the first attempt.

(4) With regard to thesis candidates with a disability as defined by Section 3 of the Equal Rights for Persons with a Disability Act, Section 15 (4) shall apply accordingly.

## **Section 22**

### **Submission and assessment of the thesis**

(1) Two printed copies of the master's thesis must be submitted to the Chair of the Examination Board before the deadline as well as a disc containing the entire thesis as a PDF and in the original format (PAGES or WORD). The date of submission shall be put on official record; if a thesis is submitted by post, then the time of posting is considered the date and time of submission. Students must also include a written confirmation that all work – or, in the case of group work, his or her appropriately identified individual contribution – was produced independently and made use of no resources or sources other than those which were clearly cited, with quotations duly marked as such.

(2) The thesis shall be evaluated by two examiners. One of the examiners should be the thesis supervisor. If the supervisor is an honorary professor or sessional lecturer, the second examiner must be a professor or other equivalent teacher (in particular *Hochschuldozent/in* or *Privatdozent/in*) at the Faculty of Communication and Environment. If the marks awarded are not identical, but the difference is less than 2.0 points, then the final mark shall be calculated by averaging the two scores. If the difference is greater than or equal to 2.0 grade points, then a third examiner shall be arranged by the Examination Board. In this case, the final mark is calculated by averaging the best two out of three marks. A final mark of "Sufficient" (4.0) or better can only be awarded if at least two of the marks were "Sufficient" (4.0) or better. All marks shall be justified in writing.

(3) Twenty-seven credits are awarded for passing the thesis.

## **Section 23**

### **Colloquium**

(1) The colloquium supplements the thesis, is assessed separately, and should be held within two months of submission of the thesis. It serves to ascertain whether the student can orally express the findings of their thesis as well as the specialist particulars and cross-disciplinary correlations, substantiate these details in an independent manner, and provide an assessment of their broader practical significance. The colloquium should take the form of an in-depth discussion on the thesis topic.

(2) Students are eligible for admission to the colloquium if they:

1. have met the general admission requirements set forth in Section 3; and
2. are officially enrolled as students at Rhine-Waal University of Applied Sciences or as

visiting students (refer to Section 52 (2) HG NRW) in this master's degree programme at the time of the colloquium; and

3. have obtained 87 credits.

(3) The proper request form must be submitted to the Chair of the Examination Board. This request must include a declaration of any previous attempts at completing a colloquium. Students may submit their request for admission to the colloquium when requesting admission to the thesis; in this case, the application shall be approved automatically when the prerequisites in subsection (2) have been met. Section 20 (4) applies analogously to the approval or rejection of a request for admission to the colloquium.

(4) The colloquium is an oral examination jointly conducted and evaluated by the two examiners of the thesis. Should the situation in Section 22 (2) sentence 5 arise, the colloquium shall be jointly conducted and evaluated by the two examiners whose individual scores were used to calculate the final mark for the thesis. The colloquium is approximately 45 minutes in length. The provisions governing oral examinations (Section 17) apply analogously to the colloquium.

(5) With regard to thesis candidates with a disability as defined under Section 3 of the Equal Rights for Persons with a Disability Act, Section 15 (4) of these Regulations applies accordingly.

(6) Three credits are awarded for passing the colloquium.

## **Section 24**

### **Conclusion of the master's examination**

(1) The master's examination is passed when students have successfully obtained 90 credits.

(2) The master's examination is failed when a student's final attempt at passing an examination in a module or a component thereof, the thesis or the colloquium has been assessed as "Failed" (5.0) or is otherwise considered to be assessed as "Failed" (5.0). In this case, the affected student shall receive a written declaration informing him or her of the failed master's assessment or the loss of the right to sit for additional examinations as per Section 11 (1) and providing an explanation of available legal recourse. On written request, the Chair of the Examination Board can issue to the affected student a certificate containing all successfully completed examinations and the marks awarded to-date, as well as the remaining examinations required to pass the master's assessment. This certificate must clearly

show that the affected student has definitively and irreversibly failed the master's assessment or has exhausted all remaining examination attempts as per Section 11 (1).

## **Section 25**

### **Final certificates, overall grade and diploma supplements**

(1) Students shall be promptly issued a final grade certificate (*Abschlusszeugnis*) upon passing the master's examination, where possible within four weeks of the colloquium. This certificate contains a full accounting of completed modules and awarded marks; the thesis topic, its mark and the names of the examiners; the mark for the colloquium; and the overall cumulative mark for the master's examination. If credits were transferred from a different university as per Section 8, their origin shall also be noted here.

(2) The overall cumulative grade for the master's examination is calculated on the basis of the individual marks in subsection (1) sentence 2 and the grading scale defined in Section 10 (4). Marks are weighted according to their credit point values in the curriculum.

(3) The final grade certificate shall be signed by the Chair of the Examination Board and affixed with the official seal of the Examination Board. It shall also indicate the date on which the colloquium occurred.

(4) In addition, each graduate shall receive a diploma supplement and a transcript of records in English.

(5) Students who withdraw from the University without passing the master's examination may apply for a "leaving certificate" (*Abgangszeugnis*) that lists all examinations completed during their studies. Subsection (3) sentence 1 applies accordingly.

## **Section 26**

### **Master's degree certificate**

(1) A master's degree certificate bearing the same date of issue as the final grade certificate shall also be issued to students. This certificate is official confirmation that the title specified in Section 2 (4) has been conferred.

(2) The master's degree certificate shall be signed by both Dean and the Chair of the Examination Board of the faculty and affixed with the official seal of Rhine-Waal University of Applied Sciences.

**Section 27**  
**Additional examinations**

Students may voluntarily sit examinations in modules and courses which are not compulsory for their degree programme. Upon request, the results of these examinations can be noted on the final grade certificate or leaving certificate, as appropriate, but will not contribute to the final cumulative mark. This also applies to examinations completed in accordance with a learning agreement.

**Section 28**  
**Viewing examination records**

(1) After successful or unsuccessful conclusion of the master's examination, students may request an opportunity to view their previous examinations, the assessment-related notes of the examiners, and the minutes for the examination procedure.

(2) Students must submit a viewing request for their examination records to the Chair of the Examination Board within one month of the date of issue of the final grade certificate, leaving certificate or declaration of a failed master's examination. Section 32 of the Administrative Procedure Act of North Rhine-Westphalia applies with respect to students' right to submit a request after expiry of this deadline. The Chair of the Examination Board shall arrange the time and place for viewing.

(3) Students may request an opportunity to view examination documents for modules or components thereof once the examination in question has been completed. Requests must be submitted within one month of announcement of the examination results. Subsection (2) applies accordingly.

**Section 29**  
**Nullification of examinations**

(1) If a student has cheated on one or more examination and this first comes to light after the final grade certificate, leaving certificate or certificate defined under Section 24 (2) has been issued, then the Examination Board is entitled to nullify the marks for the affected examinations retroactively and declare the master's examination, in part or in whole, as failed.

(2) If the prerequisites for admission to an examination were not fulfilled and it can be shown that this was not the result of deliberate deception by the student, and this first comes to light after the final grade certificate, leaving certificate or certificate defined under Section 24 (2)

has been issued, then this error shall be remedied by the successful completion of the examination. However, if the student used deliberate deception to obtain wrongful admission to the examination, the Examination Board shall decide upon any subsequent legal action in accordance with the Administrative Procedure Act of North Rhine-Westphalia.

(3) An incorrect final grade certificate, leaving certificate, master's degree certificate or certificate defined under Section 24 (2) shall be revoked and, where appropriate, reissued. The statute of limitations for decisions relating to subsection (1) and subsection (2) sentence 2 is five years from the date of issue of a final grade certificate, leaving certificate or certificate defined under Section 24 (2).

### **Section 30**

#### **Entry into force / Transitional provisions**

(1) These Examination Regulations shall enter into force on the day after publication of the German-language original in the Official Notices of Rhine-Waal University of Applied Sciences. They apply to students who first enrolled in Information Engineering and Computer Science M.Sc. of the Faculty of Communication and Environment of Rhine-Waal University of Applied Sciences in or after winter semester 2021-2022.

(2) Students who first enrolled in Information Engineering and Computer Science M.Sc. before winter semester 2021-2022 may continue their studies according to the Examination Regulations dated 14 May 2014 (Official Notice 17/2014) until 28 February 2025 at the latest. Accordingly, the Examination Regulations dated 14 May 2014 (Official Notice 17/2014) shall expire on 1 March 2025.

(3) Students currently studying according to the Examination Regulations dated 14 May 2014 may submit a written request to the Examination Board to switch to the Examination Regulations defined in this document. The Examination Board is responsible for all credit recognition decisions for previously completed modules and examinations.

*Note: These Examination Regulations entered into force on 8 May 2021.*

**Curriculum for Information Engineering and Computer Science M.Sc.**  
Version dated 15 October 2020

**Annex: Study and examination plan for Information Engineering and Computer Science M.Sc.**

Code No (Kennnummer)	Module	SW	Type (Veranstaltungsart)						TE	CP	Sum CP	SS 1	WS 2	SS 3	
			L	SL	S	Ex	PT	Pro							
M.E._1.01	System Simulation System Simulation	5	2					1		E	5	5	5		M.E._1.01 - Master Thesis (3 CP) and Colloquium (3 CP)
M.E._1.02	Data Analysis & Information Engineering Datenanalyse & Information Engineering	4	2			2				E	5	5	4		
M.E._1.03	Scientific and Technical Communication Wissenschaftliche und Technische Kommunikation	3	3							E	5	5	3		
M.E._1.04	Applied Research Project A Angewandtes Forschungsprojekt A	4						4		E	5	5	4		
M.E._2.01	Data Mining	4	2			2				E	5	5	4		
M.E._2.02	Geoinformatics Geoinformatik	4	2			2				E	5	5	4		
M.E._2.03	Intercultural Management and Intercultural Competence Interkulturelles Management und Interkulturelle Kompetenz	4								E	5	5			
	Intercultural Management and Intercultural Competence Interkulturelles Management und Interkulturelle Kompetenz Localisation and Internationalisation Lokalisierung und Internationalisierung		2			1							3		
M.E._2.04	Innovation Management Innovationsmanagement	3						1		E	5	5		1	
	User-Centred Innovation and Design Management Nutzerzentriertes Innovations- und Design-Management		2										2		
	Digital Culture and New Markets Digitale Kultur und Neue Märkte		1										1		
M.E._2.05	Applied Research Project B Angewandtes Forschungsprojekt B	4						4		E	5	5	4		
	Specialisation Track (1st semester) Spezialisierung	8									10	10			
	Course 1 Modul 1		2			2				E			4		
	Course 2 Modul 2		2			2				E			4		
	Specialisation Track (2nd semester) Spezialisierung	4									5	5			
	Course 3 Modul 3		2			2				E			4		
	<b>Semester hours per week (Semesterwochenstunden)</b>	<b>47</b>								<b>CP</b>	<b>60</b>	<b>24</b>	<b>23</b>	<b>38</b>	

47 SW  
98 CP

**Specialisation Tracks**

Module		SW	CP
<i>Track Computer Science</i>			
M.E._CS.01	Advanced System Security Systemicherheit für Fortgeschrittene	4	5
M.E._CS.02	Mobile and Internet Computing Mobile und Internet-basierte Systeme	4	5
M.E._CS.03	Advanced Software Engineering Software Engineering für Fortgeschrittene	4	5
<i>Track Environmental Analysis</i>			
M.E._EA.01	Environmental Analysis, Impact and Risk Umwelt, Analyse, Wirkungsabschätzung und Risikoanalyse	4	5
M.E._EA.02	Environmental Monitoring Research Project Umweltmonitoring	4	5
M.E._EA.03	Data Processing in Ecosystem Management Datenverarbeitung im Ökosystem Management	4	5
<i>Track Logistics</i>			
M.E._LG.01	Logistics Network Modeling Modellierung von Logistiknetzwerken	4	5
M.E._LG.02	Advanced Logistics Control Logistiksteuerung für Fortgeschrittene	4	5
M.E._LG.03	Advanced Logistics Concepts Logistikkonzepte für Fortgeschrittene	4	5
<i>Track Cyber-Physical Systems</i>			
M.E._CP.01	Distributed Systems Verteilte Systeme	4	5
M.E._CP.02	Real Time Embedded Systems Echtzeitliche Eingebettete Systeme	4	5
<i>Track Artificial Intelligence</i>			
M.E._AI.01	Artificial Intelligence and its Application Klassische Intelligenz und ihre Anwendung	4	5
M.E._AI.02	Machine Learning Maschinelles Lernen	4	5
M.E._AI.03	Advanced Topics of Artificial Intelligence Klassische Intelligenz für Fortgeschrittene	4	5

Abbreviations	
SW	Semester hours per week (Semesterwochenstunden)
WS	Winter semester (Wintersemester)
SS	Summer semester (Sommersemester)
TE	Type of examination (Prüfungsform)
CP	Credit points (Kreditpunkte)
L	Lecture (Vorlesung)
SL	Seminars lecture (seminaristische Lehrveranstaltung)
S	Seminar (Seminar)
Ex	Exercise (Übung)
PT	Practical training (Praktikum)
Pro	Project (Projekt)
E	Examination (Prüfung)
C	Certificate (Testat)