

## **Course of Study-Specific Examination Regulations**

**for the Master's course of study**

**Media Informatics**

**of RWTH Aachen University**

**dated 06.06.2019**

**Please be aware that this translation is for informational purpose only and that solely the German version is legally binding.**

On the basis of §§ 2 para. 4, 22, para. 1 p.1 no.3, 64 of the law governing the Universities of the Federal State of North Rhine-Westphalia (Higher Education Act – HEA) in the version of Article 1 of the Future Higher Education Act NRW of September 16, 2014 (GV. NRW p. 547), most recently amended by Article 3 of the Act to Ensure the Accreditation of Courses of Study in North Rhine-Westphalia from October 17, 2017 (GV. NRW p. 806), RWTH Aachen University (RWTH) has issued the following examination regulations:

## Table of Contents

<b>I. <u>General Information</u></b> .....	<b>3</b>
§ 1 <u>Scope of Application and Academic Degree</u> .....	3
§ 2 <u>Objectives of the Course of Study and Language Provisions</u> .....	3
§ 3 <u>Admission Requirements</u> .....	3
§ 4 <u>Standard Period of Study, Curriculum, Credit Points and Scope of Study</u> .....	4
§ 5 <u>Obligatory Attendance in Classes</u> .....	5
§ 6 <u>Examinations and Examination Deadlines</u> .....	5
§ 7 <u>Types of Examinations</u> .....	5
§ 8 <u>Assessment and Grading</u> .....	6
§ 9 <u>Joint Study Programme Commission and Examination Board</u> .....	6
§ 10 <u>Repeating Examinations or the Master's Thesis, Loss of the Right to Examination</u> .....	7
§ 11 <u>Cancellation, Non-Attendance, Withdrawal, Deception, Non-Compliance</u> .....	7
<b>II. <u>Master's Examination and Master's Thesis</u></b> .....	<b>8</b>
§ 12 <u>Type and Scope of the Master's Examination</u> .....	8
§ 13 <u>Master's Thesis</u> .....	8
§ 14 <u>Acceptance and Assessment of the Master's Thesis</u> .....	8
<b>III. <u>Final Provisions</u></b> .....	<b>9</b>
§ 15 <u>Viewing of Examination Files</u> .....	9
§ 16 <u>Coming into Effect, Publication and Transitional Provisions</u> .....	9

### Appendices:

1. Curriculum
2. Guidelines for internships/practical professional experiences
3. Equivalence List

## I. General Information

### § 1

#### Scope of Application and Academic Degree

- (1) These examination regulations apply to the joined Master's course of study Media Informatics at RWTH and University of Bonn (hereinafter referred to only as Uni Bonn). It only applies in conjunction with the General Examination Regulations (GER) in the relevant applicable version, and includes additional course of study-specific regulations. In cases of doubt, the regulations of the general examination regulations take priority.
- (2) For the successful completion of the Master's course, the Faculty of Mathematics, Computer Science and Natural Sciences awards the academic degree of Master of Science, RWTH Aachen University (M. Sc. RWTH).

### § 2

#### Objectives of the Course of Study and Language Provisions

- (1) This is a Master's course of study according to § 2 para. 3 GER (Master's course building upon a Bachelor's course in Computer Science).
- (2) The overall educational objectives are set out in § 2 para. 1, 3 and 4 GER. For further information and provisions on the objectives of the Bachelor's course of study, please refer to the Appendix 3 of the present examination regulations.
- (3) Teaching takes place in English.
- (4) Examinations may be taken in German or English, in agreement with the examiner in question.

### § 3

#### Admission Requirements

- (1) Basic requirement for admission is a recognized university degree according to § 3 para. 4 GER.
- (2) To meet the educational prerequisites and successfully complete the Master's course of study, the student applicant must have the necessary competence in the following areas:
  - At least 28 credit points for the area of Applied Computer Science, including:
    - a. min. 8 credit points in Programming,
    - b. min. 8 credit points in Data Structures and Algorithms,
    - c. min. 6 credit points in Databases and Information Systems,
    - d. min. 6 credit points in software engineering.
  - At least 18 credit points for the area of Computer Engineering, including:
    - a. min. 6 credit points in Introduction to Computer Engineering,
    - b. min. 6 credit points in Operating Systems and System Software,
    - c. min. 6 credit points in Data Communication and Security.
  - At least 18 credit points for the area of Theoretical Computer Science, including:
    - a. min. 6 credit points in Formal Systems, Automata, Processes,
    - b. min. 6 credit points in Computability and Complexity,

- c. min. 6 credit points in Mathematical Logic.
- At least 26 credit points for the area of Mathematics, including:
  - a. min. 6 credit points in Discrete Structures,
  - b. min. 8 credit points in Calculus for Computer Science,
  - c. min. 6 credit points in Linear Algebra,
  - d. min. 6 credit points in Introduction to Applied Stochastics.

The proven competences must be comparable to the Bachelor's course of study Computer Science at RWTH.

- (3) In addition, proof of the Graduate Record Examination (GRE) General Test is required at the time of application. In the Quantitative Reasoning (GRE-QR) test field, applicants must be among the 25% best (above 75th percentile) and in the Verbal Reasoning (GRE-VR) test field they must be among the 85% best (above 15th percentile) of a test year. Applicants who are nationals of a member state of the European Union or of the European Economic Area (EEA), as well as German students are exempt from this rule.
- (4) For admission conditional on additional requirements, § 3 para. 6 GER applies. If additional requirements corresponding to more than 30 credit points are required, admission to the Master's course of study is not possible.
- (5) For this Master's course of study, adequate knowledge of the English language must be proven according to § 3 para. 9 GER.
- (6) § 3 para. 12 GER applies for determining whether admission requirements are met.
- (7) General regulations for the recognition of prior examinations are given in § 13 GER.

#### § 4

#### Standard Period of Study, Curriculum Credit Points and Scope of Study

- (1) The standard period of study is four terms (two years) full-time, including preparation of the Master's thesis. The course of study may only be commenced in winter semester.
- (2) The course consists of one compulsory area, four elective areas and two practical labs, of which at least one should be done in cooperation with one of the Fraunhofer Institutes FIT and IAIS participating in the Master's course Media Informatics. A total of 120 credit points are required for successful completion of the program. The Master's examination is composed as follows:

Compulsory Modules		24 – 28 CP
Compulsory Elective Modules: Computer and Communication Technology	At least 58 CP	8 – 16 CP
Compulsory Elective Modules: Multimedia Technology		14 – 22 CP
Compulsory Elective Modules: Multimedia Use and Impact		4 – 12 CP
Compulsory Elective Modules: Practical Labs		20 CP
Compulsory Elective Modules: Communication Skills		12 CP
Master's Thesis		30 CP
<b>Sum</b>		<b>120 CP</b>

In the case of lecture modules, the assignment to the areas results from the module catalogue.

- (3) The degree course, including the Master's thesis module, comprises 14 to 19 modules. All modules are defined in the module catalogue. The weighting of the examinations with credit points to be taken in the individual modules is carried out according to § 4 para. 4 GER.

## **§ 5 Obligatory Attendance in Classes**

- (1) According to § 5 para. 2 GER, obligatory attendance can only be stipulated in courses of the following type:
1. Tutorials
  2. Seminars
  3. Colloquia
  4. (Practical) Labs
  5. Excursions
- (2) The courses for which attendance is required according to para. 1, are identified as such in the module catalogue.

## **§ 6 Examinations and Examination Deadlines**

- (1) General regulations on examinations and examination periods are included in § 6 GER.
- (2) Provided successful participation in modules or examinations or passing of module components according to § 5 para. 4 GER is stipulated as a precondition for participation in other examinations, this is indicated accordingly in the module catalogue.

## **§ 7 Types of Examinations**

- (1) General regulations on types of examination are included in § 7 GER.
- (2) The duration of a written exam is at least 60 minutes and at most 120 minutes according to § 7 para. 3 GER. In general, the duration of the exam is 60 to 90 minutes for the up to 5 CP, 90 to 120 minutes for up to 6 or 7 CP, and 120 minutes or more for up to 8 or more CP.
- (3) The duration of an oral examination is at least 15 minutes and at most 45 minutes. An oral examination as a group examination is carried out with no more than four candidates.
- (4) The following applies to seminar and term papers in detail: Depending on the topic, the number of pages varies between 5 and 20. The paper is concluded with a presentation.
- (5) The scope of a written assignment is 5 and 40 pages. The preparation time for a written assignment is between one week and three months.
- (6) The scope of written preparation for a presentation is at most 40 pages. The duration of a presentation is at least 10 and at most 60 minutes.

- (7) The following applies to colloquia in particular: The duration of a colloquium is at least 15 minutes and at most 45 minutes.
- (8) The following applies to project work and practical labs in particular: Students should independently apply subject-specific knowledge and methods of conception, implementation and testing of software and hardware systems as well as of experiments and measurements. Usually, the work is done in small groups in order to train the team skills of the students.
- (9) The examiner specifies the duration of the examination and, if applicable, of other modalities of the examination at the start of the course in question.
- (10) Admission to module examinations may be conditional on the successful completion of module components as examination requirements in accordance with § 7 para. 15 GER. This is outlined for the relevant modules in the module catalogue. At the start of term, or by the time of the first course session, the lecturer provides precise criteria regarding possible improvement of grades through the completion of module components, particularly the number and type of bonus-enabling tutorials as well as the mode of correction and assessment.

## **§ 8**

### **Assessment and Grading**

- (1) General regulations for assessing the examinations and the formation of grades are included in § 10 GER.
- (2) If an examination consists of several partial exams, each partial exam must be passed, i.e. be completed with the grade of at least "sufficient" (4.0).
- (3) A module has been passed if all associated partial examinations have been passed with a grade of at least "sufficient" (4.0), and all other credit points or module components have been achieved according to the relevant course of study-specific examination regulations.
- (4) The overall grade is formed taking into account all module grades and the grade of the Master's thesis according to § 10 para. 10 GER.

## **§ 9**

### **Joint Study Programme Commission and Examination Board**

- (1) A joint study programme commission will be established for the study programme.
- (2) The Joint Degree Programme Commission will be composed of:
  1. three professors each from the RWTH and the University of Bonn (a total of six), one of whom must be a member of the Fraunhofer Society,
  2. one member each from the group of scientific employees of the RWTH and the University of Bonn,
  3. a member of the group of students of the programme.
- (3) A professorial member of RWTH shall be appointed as Chair of the Study Programme Commission. The deputy is a professorial member of the University of Bonn.

- (4) The Joint Study Programme Commission coordinates the organisational work of the cooperation partners with regard to the implementation and management of the joint study programme. In particular, it may submit to the Faculty Council concerned recommendations on the courses offered and the teaching content, submit proposals for revisions to the examination regulations, make recommendations on module responsibility and make proposals on the further development and design of the study programme.
- (5) The responsible Examination Board according to § 11 GER is the Master's Examination Board of the Faculty of Mathematics, Computer Science and Natural Sciences of RWTH Aachen.
- (6) At least one member of the Examination Board should be member of the joint study programme commission.

### **§ 10**

#### **Repeating Examinations or the Master's Thesis Loss of the Right to Examination**

- (1) General regulations for resit examinations, the Master's thesis, and the loss of the right to examinations are included in § 14 GER.
- (2) Modules that can be freely selected within an area (specialization, occupational field, field of application, minor) from this Master's course of study can be replaced provided this is permitted in the relevant module catalogue. It is not possible to change mandatory modules.

### **§ 11**

#### **Cancellation, Non-Attendance, Withdrawal Deception, Non-Compliance**

- (1) General provisions on cancellation, non-attendance, withdrawal, deception or non-compliance are included in § 15 GER.
- (2) The following applies to canceling practical work and seminars: Cancellation is possible up to three weeks after the topic assignment or preliminary meeting. In the case of block courses, however, a cancellation until the first day of the course is possible.

## II. Master's Examination and Master's Thesis

### § 12

#### Type and Scope of the Master's Examination

- (1) The Master's examination consists of
  1. examinations that are to be completed based on the structure of the course of study according to § 4 para. 2 and 3 and detailed in the module catalogue, as well as
  2. the Master's thesis.
- (2) The assignment for the Master's thesis can only be issued if:
  1. one of two compulsory elective modules in the area of Practical Labs has been successfully completed,
  2. all compulsory elective modules in the area of Communication Skills have been successfully completed, and
  3. a total of 54 CP in examinations have been successfully completed.

### § 13

#### Master's Thesis

- (1) General regulations for the Master's thesis are included in § 17 GER.
- (2) Reference is made to § 17 para. 2 GER with regard to supervision of the Master's thesis. Supervision can also be provided by examiners from the Institute for Computer Science at the University of Bonn and the Fraunhofer Institutes FIT and IAIS.
- (3) The Master's thesis can be written in the English or German language, in agreement with the examiner in question.
- (4) The turnaround time (time frame for completion) for the Master's thesis is usually six months. In justified exceptional cases, the turnaround time can be extended by a maximum of up to six weeks upon application to the Examination Board in accordance with § 17 para. 7 GER. The size of the written thesis should not exceed 80 pages without Annexes.
- (5) The scope of work for execution and written preparation of the Master's thesis corresponds to 30 credit points.

### § 14

#### Acceptance and Assessment of the Master's Thesis

- (1) General provisions on acceptance and assessment of Master's thesis are included in § 18 GER.
- (2) The Master's thesis is to be submitted on time with three copies to the Central Examination Office. Printed, bound copies must be submitted. Furthermore, the thesis must be submitted as a PDF file on a data carrier.



### III. Final Provisions

#### § 15 Viewing of Examination Files

Review of exam documents is carried out in accordance with § 22 GER.

#### § 16 Coming into Effect, Publication and Transitional Provisions

- (1) These examination regulations are published as an Official Announcement of RWTH Aachen University ("Amtliche Bekanntmachungen") and come into effect on the day after publication.
- (2) The examination regulations for the Master's programme in Media Informatics dated 17.03.2003, in the version of the second regulations to amend the examination regulations dated 27.07.2005 published as an overall version, shall be incorporated into these examination regulations.
- (3) These examination regulations apply to all students who enrolled in the Media Informatics Master's course of study at RWTH.
- (4) Modules that were passed before the winter semester 2019/2020 shall be valid for all examination attempts offered for a course.
- (5) The provision in § 14 para. 2 applies to all students who register their Master's thesis as of 1 October 2019. For all students who register their Master's thesis before 01.10.2019, four copies of the Master's thesis must be submitted in due time to the Study Course Committee.

Issued based on the resolutions of the Faculty Council of the Faculty of Mathematics, Computer Science and Natural Sciences dated ...

The Rector  
RWTH Aachen University

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Aachen,

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

**Appendix 1:****Curriculum**

<b>Curriculum</b>	<b>Semester</b>	<b>Credit Points</b>
<b>Compulsory Modules</b>		
Data Communication and Internet Technology	1. Semester	6
Introduction to Computer Graphics	1. Semester	6 (or 8)
Designing Interactive Systems	1. Semester	6
Foundations of Data Science <sup>(1)</sup>	2. Semester	6 (or 8)
<b>24 – 28</b>		
<b>Compulsory Elective Modules: Computer and Communication Technology</b>		
2-4 Compulsory Elective Modules	1.-3. Semester	each 4, 6 or 8
<b>8 – 16</b>		
<b>Compulsory Elective Modules: Multimedia Technology</b>		
3-5 Compulsory Elective Modules	1.-3. Semester	each 4, 6 or 8
<b>14 – 22</b>		
<b>Compulsory Elective Modules: Multimedia Use and Impact</b>		
2-3 Compulsory Elective Modules	1.-3. Semester	each 4, 6 or 8
<b>4 – 12</b>		
<b>Compulsory Elective Modules: Practical Labs</b>		
Practical Lab	2.-3. Semester	10
Practical Lab Fraunhofer	2.-3. Semester	10
<b>20</b>		
<b>Compulsory Elective Modules: Communication Skills</b>		
Technical Writing	1. Semester	4
Seminar	2.-3. Semester	4
German Language Course (or additional seminar <sup>(2)</sup> )	2.-3. Semester	4
<b>12</b>		
<b>Master's thesis</b>		
Master's thesis	4. Semester	30
<b>30</b>		
<b>Sum</b>		<b>120</b>

**Remarks:**

- (1) The module "Foundations of Data Science" will replace the module "Object-Oriented Software Construction" as of summer semester 2019. All students who have already completed the module "Object-oriented Software Construction" do not have to complete the module "Foundations of Data Science".
- (2) Students who have acquired their study qualification at a German-speaking institution or who have learned German as their native language must attend an additional seminar instead of the German Language Course for English-language Master's Courses at the Language Centre of RWTH Aachen University.

## Appendix 2:

### Objectives of Study Programme

The international Master Programme in Media Informatics at the Bonn-Aachen International Center for Information Technology (B-IT) is offered by RWTH Aachen University and the University of Bonn in co-operation with the Fraunhofer Institutes at Sankt Augustin near Bonn. This interdisciplinary programme will educate the participant to successfully master the novel technical and economic challenges at the crossroads of computer science, data science, next-generation communication systems, and media. The programme is distinguished by its international orientation, its focus on IT competence, and its high level of integration of research and teaching.

The master programme in Media Informatics consists of six main blocks and the Master's thesis: computer and communication technology, multimedia technology, multimedia use and impact, communication skills, practical labs and master's thesis. The first three blocks are focussed on lectures and practice-oriented tutorials/exercises in compulsory and elective area of the mentioned fields. Communication skills address Technical Writing, Foreign Language Skills (for international students: German Language skills), seminars and special courses on subjects such as project management.

The programme is characterised by a significant proportion of research lab courses embedded in both basic and applied research of the participating Fraunhofer Institutes for Applied Information Technology (FIT), and for Intelligent Analysis and Information Systems (IAIS), and with other research and industry partners in the region. The final six months of the programme are dedicated to the master thesis which can be done in co-operation with industry. The course contents is structured according to the ECTS (European Credit Transfer System).

NON-BINDING DRAFT