Course-Specific Examination and Study Regulations
for the Master's Degree Course
Computer Science International
at the University of Rostock

Unofficial reading version following incorporation of the First Amending Statutes

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I. General Provisions

§ 1
Scope of Application

(1)   These Regulations apply to objectives, content, procedures and course-specific regulations for completing the research-focused master's in Computer Science International at the University of Rostock based on the General Examination Regulations for the bachelor's and master's courses at the University of Rostock (General Examination Regulations (Bachelor/Master)).

(2)   For the language modules that can be studied within the framework of the compulsory elective area, the examination regulations for the courses offered by the Language Centre of the University of Rostock including the University Foreign Language Certificate UNIcert® apply.

§ 2
Admission Requirements

(1)   According to § 3 of the General Examination Regulations (Bachelor/Master), admission to the master's degree course Computer Science International requires the applicant to have a first university degree and to meet the following additional admission requirements:

1.   Study applicants whose native language is not English must provide proof of their English language skills with a TOEFL IBT with at least 94 points or an IELTS with at least 7.0 points, which is not older than two years, or an equivalent test.

2.   Proof of a first degree in Computer Science with at least 180 credit points or another equivalent degree is required.

3.   Evidence of in-depth knowledge in the following subject areas must be provided: mathematics (at least 18 credit points), computer science theory, in particular computability, complexity, formal language, formal semantics and formal modelling (in total at least 12 credit points). A maximum of nine credit points in theoretical computer science can be made up for during the first year.

(2)   If admission to the master's degree course Computer Science International is not subject to admission restrictions, admission can only be denied if it is unlikely that studies will be completed successfully. It is assumed that a successful completion of the master's course is not to be expected if:

1.   one of the criteria set out in sub-section (1) numbers 1 to 3 is not met, or
2.   the undergraduate degree was not completed with a mark of at least 85 % of the CGPA (Cumulative Grade Point Average) or an equivalent mark in a different marking system, unless the applicant has taken the Graduate Aptitude Test in Engineering (GATE) instead of achieving the required final mark and obtained at least 500 points,

and the applicant has not provided any further evidence of the subject-specific and course-specific qualifications from which a positive prognosis of success can be deduced when considering the overall picture. The Examination Board may decide to invite the applicant to an interview to discuss the application. Admission can also be granted subject to conditions if the course has admission restrictions in accordance with § 4 of the *Hochschulzulassungsgesetz* (University Admission Act).

II. Degree Course, Progression of Studies and Organisation of Studies

§ 3
Degree Course Objectives

(1)   Upon successful completion of the master's degree in Computer Science International, students are awarded the university degree Master of Science (M.Sc).

(2)   The master's degree course Computer Science International is research-oriented. It qualifies students for positions in academic and industrial fields of computer science as well as for subject-related activities in the public sector. The degree course should provide graduates with the skills and competencies required to grasp, appropriately assess and work on and solve problems of the subject area in a systematic and target-oriented manner, according to theory-based and recognised engineering knowledge. They should be able to contribute towards the development of the field of computer science following independent familiarisation with specific problems. In comparison to graduates of bachelor's degree courses, graduates of the master's degree course Computer Science International are expected to have a significantly higher ability to judge circumstances as a result of in-depth knowledge, as well as a significantly higher degree of independence and scientific prowess when tackling tasks. They are enabled to contribute independently towards the scientific development of the field of computer science and to take on managerial tasks. Graduates of this degree course typically pursue careers in academic research and teaching; research, development, project-planning, sales, installation and service departments of industrial companies in the IT branch; or IT departments in companies belonging to other branches; in the research, development and advisory departments of research institutions, authorities and associations.

§ 4
Start of Studies, Course Organisation, Standard Length of Study

(1)   The master's degree course Computer Science International can be started in the summer or winter semester. Enrolments are made on the dates set annually by the University of Rostock's administration. The application is usually made online via the university portal or another portal mentioned there.

(2)   The master's degree course Computer Science International is offered in English. Individual modules including their module exams are offered in German. Details are given in the respective module description. The range of modules for the Master's course Computer Science International is designed in such a way that the entire degree course can be completed exclusively in English, although not all elective modules can then be chosen.

(3)   The standard length of study within which the degree course is to be completed is four semesters.

(4)   The master's degree course Computer Science International is divided into compulsory, compulsory elective and elective modules. In the compulsory area, four modules totalling 54 credit points must be completed, in the compulsory elective area, modules totalling 54 credit points must be completed, and in the elective area, modules totalling 12 credit points must be completed. 30 credit points of the compulsory modules are allocated to the final examination. In order to pass the master's examination, a total of at least 120 credit points must be earned.

(5)   The compulsory elective area "Specialisation" aims to provide students with in-depth and networked competences in the area of specialisation outlined in § 5. By studying four modules in the area of specialisation, students acquire a comprehensive insight into the chosen area of specialisation and are provided with the skills required to transfer knowledge, methods and competences between related subjects within the area of specialisation. Students can select the English-language modules belonging to the compulsory elective catalogue of the chosen area of specialisation. If students are able to prove German language proficiency at level B2 or above of the Common European Framework of Reference for Languages, they are also able to select modules taught in German.

(6)   The compulsory elective area "Complement" aims to provide students with certain competences in the field of computer science that has not been chosen as an area of specialisation. This makes it possible for students to acquire the necessary competences to be able to classify and evaluate developments in the entire field of computer

science. In addition to the compulsory elective modules listed in Appendix 1 that are taught in English in the area of specialisation that has not been selected by the students, upon proof of German language proficiency at level B2 or above of the Common European Framework of Reference for Languages, the students are also able to select modules taught in German from the area of specialisation they had not selected.

(7)   The compulsory elective area "Individual Specialisation" serves to provide students with further competencies that prepare them for an individually determined occupation in the field of computer science as well as for subject-related jobs in the public sector. Students can select any of the elective modules of this degree course and of the master's degree course in Computer Science that have not already been selected for one of the two areas of specialisation, as well as modules that are related to computer science from the master's degree courses in Business Informatics and Visual Computing at the University of Rostock's Faculty of Computer Science and Electrical Engineering, provided that they are able to meet the necessary language and other participation requirements for the module.

(8)   The non-technical elective area of 12 credit points primarily aims to enable students to acquire or improve their language skills in German and English and, to a lesser extent, to acquire soft skills. The modules taken are intended to improve students' language, extracurricular and social skills, or their self-competence. Possible topics include, for example, setting up a business, time management, mentoring, managerial tasks, presentation techniques, the social impact of computer science, or the didactics of computer science. By acquiring or improving their German language skills, the students are prepared for later jobs in the predominantly small and medium-sized enterprises of Mecklenburg-Vorpommern and will also be able to find their way around everyday life more easily. Therefore, following a language test at the University of Rostock's Language Centre, students must primarily take German language courses covering a scope of 12 credit points. Students who can prove that they were unable to attain a place on a German language course at the Language Centre may instead take suitable English language courses at the Language Centre or select one of the other modules from the non-technical elective area. Instead of the elective modules expressly offered for this degree course, in consultation with the Departmental Advisory Service and the corresponding responsible module teachers, students, who are already able to prove German language skills at level B2 of the Common European Framework of Reference for Languages, may select and allow further modules from the Language Centre, modules from the non-technical offer provided by the Faculty of Computer Science and Electrical Engineering, or modules from other degree courses at the University of Rostock or other universities to be recognised, if they correspond to the qualification goals of the elective area. The Examination Board decides on recognition in individual cases. The decision of the Examination Board shall be taken at the request of the student before the beginning of the semester in which the module to be recognised is to be taken. The attendance of such modules at the University of Rostock requires that they are not modules of a degree course with admission restrictions, unless a teaching export is stipulated by laws ruling the capacities of classes and sufficient study places are available. The prerequisites, examination requirements, examination periods and regulations regarding the form, duration and scope of the module examination apply as they are set down in the examination regulations of the respective degree course.

(9)   At the beginning of each semester, the students are informed about the planned course offers for the elective modules of the current and the following semester. In each semester, compulsory elective modules amounting to at least 18 credit points are offered for each compulsory elective area. In addition to the compulsory elective modules listed in Appendix 1, additional modules for the compulsory elective areas may be offered. These will be announced in good time before the start of the semester by the Computer Science Office in a form typically used by the University.

(10) If there are fewer than three enrolments in a compulsory elective module in the respective semester, the lecturer may decide not to offer the compulsory elective module. In this case, students who have chosen that compulsory elective module must choose another compulsory elective module with sufficient enrolees. Furthermore, admission to individual modules in the compulsory elective area may be restricted by the examination board for capacity reasons. If individual students are not admitted to the chosen elective compulsory module because of limited capacity, the students must choose another compulsory elective module with sufficient capacity.

(11) Participation in individual modules of this degree course is dependent on proof of certain previous knowledge or skills. Details are given in the respective module descriptions.

(12) An appropriate time distribution of the modules to the individual semesters, which in particular enables the standard length of study to be adhered to, can be found in the examination and course schedule attached as Annex 1. The examination and course schedule represents the foundation of the respective semester course schedules, which is made available to the students in a form typically used by the University. The chronological order and the coordination of the content of the courses ensure that the students can achieve the respective study objectives. There are sufficient possibilities for students to tailor the course to their individual interests.

(13) Detailed module descriptions are published in a form typically used by the University.

§ 5
Areas of Specialisation

(1) The master's degree course Computer Science International can be studied in one of the two areas of specialisation:

- Information Systems, or
- Complex Systems.

Students must indicate their selection of an area of specialisation in writing when registering for the master's dissertation in the Study Office. It is only possible to change a previous selection of an area of specialisation up until this step.

(2) In the area of specialisation "Information Systems", teaching and studying focuses on the design of software, algorithms and data structures for information systems, techniques for the efficient analysis of large amounts of data as well as related topics. The specialisation covers topics from the field of databases such as managing, retrieving and analysing large amounts of data, as well as modern Big Data procedures and data mining, which combine and analyse complex models and large data sets. Furthermore, it addresses the transparency of processes and results as well as the protection of privacy. This specialisation also includes topics related to software engineering, such as user-oriented design, human-computer interfaces and software development methods, as well as the basics of machine learning (or artificial intelligence in general), interactive visual analysis and the development and use of simulation models. Students learn to use, analyse and develop relevant techniques, methods and approaches appropriately and to assess their impact on society.

(3) In the area of specialisation "Complex Systems", teaching and studying focuses on architectures, models, methods, algorithms and tools for IT systems, which, due to their size and complexity, require a systematic approach to design, implementation and operation; as well as related topics. The complexity of these systems results from the distribution and the multitude of interacting components as well as from their heterogeneity and their manifold interdependencies. The specialisation includes topics from the fields of modelling, analysis and simulation techniques for the design and evaluation of complex systems, as well as verification techniques for proving important system properties (such as correctness). In order to ensure that the respective systems work efficiently, securely and reliably, the specialisation also covers methods of self-organisation, security and fault tolerance mechanisms, cryptographic and distributed algorithms, as well as technologies in the areas of middleware and the World Wide Web. Students learn to use, analyse and develop relevant techniques, methods and approaches appropriately and to assess their impact on society.

§ 6
Individual Part-Time Studies

(1) In accordance with § 29(7) sentence 1 of the Higher Education Act and the following paragraphs, the student may declare to the examination board, no later than two weeks before the beginning of a semester, that s/he will only be able to spend approximately half of the working time planned for his/her studies in the following two semesters. In the request, details must be provided of the required modules or partial modules that are not going to be attended and which later semesters are to be used to make up the modules or partial modules that will be missed. If the Examination Board approves the request, it may require different modules or partial modules to be

retaken other than those included in the request, especially if this is necessary to ensure that the degree course is completed properly. In hardship cases, the request may also be submitted at a later date.

(2)   The request must be addressed to the Examination Board and submitted to the Study Office. If the decision differs from the request, the student must be heard beforehand. The request can be withdrawn up to two months after the beginning of the semester.

(3)   In the case of sub-section (1), a semester is not counted towards the standard length of study and is therefore not taken into account in the calculation of the deadlines specified in §§ 9 and 10 of the General Examination Regulations (Bachelor/Master). During part-time studies, examinations other than those indicated in the decision of the Examination Board are not permitted; working on another degree course during this period is not permitted. Otherwise, the rights and obligations of the students concerned shall remain unaffected.

(4)   Each student may avail him/herself of the provision under sub-section (1) a maximum of two times.

(5)   If the degree course is subject to admission restrictions, the Examination Board may limit the number of part-time students per semester, but not to less than 5% of the students in the semester. If the demand exceeds this number, the Examination Board will decide on the students who will be permitted to complete their studies part-time, taking into account the importance of the reasons put forward by the students.

§ 7
Forms of Teaching and Learning

(1)   In addition to the course types listed in § 6a(1) of the General Examination Regulations (Bachelor/Master), the following additional type of course is used:

- *Integrated course*
  An integrated course combines the course form of a lecture with more active forms (for example, seminar or practical), during which the student works out given topics him/herself on the basis of literature and can support and discuss them among the participants of the course.

§ 8
Compulsory Attendance

If specified in the module descriptions, attendance is compulsory in seminars and practical courses in accordance with § 6b of the General Examination Regulations (Bachelor/Master).

§ 9
Admission to Courses

The admission limit for courses in compulsory and compulsory elective modules is the size of the course as specified in the *Kapazitätsordnung* (Capacity Ordinance); the limited number of laboratory places may also limit admission to courses. If more students register for courses than there are places available, the Examination Board will examine whether the excess number of students can be reduced by other or additional courses. If it is not possible to reduce the excess number of students, the person responsible for the course shall make the selection from among those students who are enrolled in a degree course in which the course is planned in a compulsory or compulsory elective module, who have registered on time, and who have fulfilled the prerequisites for participation stipulated in the module description, in the following order:
  1. If a course is attended by students from more than one degree course, first the available places will be distributed among the various degree courses in advance according to the quotas in the module descriptions (advance quotas). For each degree course, first students are considered who did not pass the corresponding examination/assessed coursework in the previous semester and therefore have to attend the course again.

2. In all other cases, the allocation of free places will be by random selection within the advance quota.

The Examination Board makes decisions regarding exceptions.

§ 10
Organisation of Studying and Teaching

(1) At the beginning of each semester, a schedule of dates for the entire semester is posted on a notice board. It includes: the lecture times, the examination periods, the non-teaching periods, and the start of the next semester.

(2) On the basis of the examination and course schedule (Appendix 1), the Study Office shall draw up a semester study plan for each cohort and semester in consultation with the responsible module teachers. It contains information on the subjects taught, the teaching staff, the number of hours broken down according to the different types of tuition, and the times in which the courses are taught.

(3) Courses outside of the study plan are planned by the lecturers themselves and in agreement with the Study Office. If necessary, they are supported by the administrative organisation of the Faculty of Computer Science and Electrical Engineering.

(4) The exchange or rescheduling of courses in justified exceptional cases is organised by the teaching staff independently in consultation with the Study Office.

(5) All special information passed on to students by the lecturers on the organisation of teaching must be communicated in advance to the Study Office. Special information means data and facts that deviate from the specifications of the study organisation.

III. Examinations

§ 11
Examination Structure and Examinations

(1) The compilation of the modules to be taken, the type of preliminary assessed work for examinations, the type, duration and scope of the module examinations, the regular examination date and the credit points to be attained are defined in the examination and course schedule (Appendix 1). The final examination (master's dissertation and colloquium) according to § 14 is part of the master's examination.

(2) In a module, coursework can be determined that must be completed in order to be admitted to the module examination (preliminary assessed work for examinations). Preliminary assessed work for examinations may be evaluated and marked, but will not be included in the module mark. Types of preliminary assessed work for examinations can be: compulsory attendance in accordance with § 8, or:

-   *Computer science project:* students work independently or in groups on project tasks (e.g. programming tasks), which are presented and evaluated in class in the form of presentations, written assignments or the submission of source code, as determined by the lecturer. This enables the students to show that they have understood the subject matter that has been taught and are able to apply it creatively.

The specific preliminary assessed work for examinations can be found in the respective module description and the examination and course schedule (Appendix 1).

§ 12
Examinations and Examination Periods

(1)   The module examinations during the degree course shall be taken during the examination period specified for this purpose. A semester's examination period begins immediately after the lecture period and ends at the end of the semester.

(2)   Notwithstanding sub-section (1), the module examinations during the course of studies may be taken in the form of presentations, assignments and project work as part of the course, provided that the students are informed of the type of examination applicable to them, its scope and the respective deadline for submission no later than in the first week of lectures.

(3)   By agreement between students and examiners, examinations may also be held at other times, subject to the deadlines and registration modalities specified in the General Examination Regulations and following approval from the Examination Board. The Study Office must be informed in due time of any such arrangements.

(4)   The declaration of withdrawal of the registration for module examinations must be made in writing with signature and submitted to the Study Office. The same applies to the request for evaluating a module examination as a *Freiversuch* (free attempt).

(5)   In the case of the last examination attempt, the examiner decides whether an oral examination should be held in deviation from the examination form specified in the module description. This selection then applies to all students of a semester.

(6)   If a module description is changed, resit examinations shall be held in accordance with the module description in the version that applied to the examination to be resat.

§ 13
Admission to Final Examination

(1)   Admission to the final examination is granted to those who meet the following additional admission requirement in accordance with § 25 of the General Examination Regulations (Bachelor/Master):

-   Proof of completion of at least 60 credit points in this degree course.

(2)   The students shall apply in writing to the Study Office for admission to the final examination. The application must be submitted no later than two weeks prior to the start of the semester in which the dissertation is to be written.

§ 14
Final Examination

(1)   The final examination is completed in the module "Master's Dissertation Computer Science International". It consists of the written master's dissertation and the colloquium.

(2)   The choice of topics for the master's dissertation is made on the basis of offers from academics from the Faculty of Computer Science and Electrical Engineering and other faculties of the University of Rostock, other scientific institutions outside the university or according to the students' own suggestions, always provided that a supervisor can be found for the dissertation according to § 27 of the General Examination Regulations (Bachelor/Master).

(3)   The specific task approached in the master's dissertation is developed by the students together with their supervisor. In this process, the supervisor ensures that the task meets the requirements for such work.

(4)   The master's dissertation is written in the fourth semester. The time limit for writing up the dissertation is 20 weeks. In individual cases, the Examination Board may, upon justified request, extend the writing-up period by a maximum of eight weeks. The master's dissertation must be submitted to the Study Office prior to the deadline.

(5)   The master's dissertation must be completed according to the University of Rostock's rules to secure good scientific practice and avoid academic misconduct.

(6)   The colloquium consists of an approximately 20-minute presentation by the student and an approximately 30-minute discussion.

(7)   30 credit points are awarded for the successful completion of the module "Master's Dissertation Computer Science International". The associated workload of 900 hours consists of 860 hours for the master's dissertation and 40 hours for the colloquium.

§ 15
Evaluation of Examinations, Mark Calculation

The examination and course schedule (Annex 1) shows whether a weighting of the individual marked coursework that may deviate from § 13(4) of the General Examination Regulations (Bachelor/Master) is applied to modules with two marked pieces of coursework and which modules are marked and which are assessed as "passed" or "failed". All marked modules are taken into account in accordance with § 13(5) of the General Examination Regulations (Bachelor/Master) when forming the final mark.

§ 16
Examination Board and Examination Organisation

(1)   The Examination Board has five members, including three members from the group of professorial staff, one member from the group of academic staff and one student member. The members' term of office is two years with the exception of the student member, whose term of office is one year.

(2)   The planning and organisation of the examinations and the verification of the preliminary assessed work for examinations is carried out by the Study Office in consultation with the Examination Board. In particular, registration for the module examinations takes place in the Study Office. The Study Office draws up the examination schedules based on the received registrations and makes them public.

§ 17
Diploma Supplement

The Diploma Supplement (German and English) contains the information specific to the degree course as shown in Appendices 2 and 3.

IV. Final Provisions

§ 18
Entry into Force

These Regulations enter into force on the day after their publication in the University of Rostock's official bulletin.

Rostock, 15 April 2021