Technische Universität Dresden
Faculty of Computer Science

Examination Regulations for the Consecutive Master's Programme Distributed Systems Engineering

of #date

Pursuant to section 34 par. 1 sentence 1 of the *Gesetz über die Freiheit der Hochschulen im Freistaat Sachsen* [Law on the Freedom of HE Institutions in the Free State of Saxony] (*Sächsisches Hochschulfreiheitsgesetz - SächsHSFG*) as first published on 15 January 2013 (SächsGVBl. p. 3), modified by section 24 of the law on 18 December 2013 (Sächs. GVBl. p. 970, 1086), Technische Universität Dresden enacts the following Examination Regulations as statutes.

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Section 1: General provisions

§ 1
Standard period of study

During the standard period of study for the Master's programme Distributed Systems Engineering, students are required to accomplish face-to-face studies, self-study and the Master's examination.

§ 2
Examination structure

The Master's examination comprises module examinations, the Master's thesis and the defence. By taking a module exam the student completes a module. As a rule, a module exam consists of several assessments. The assessments are taken throughout the course.

§ 3
Dates and deadlines

(1) Students are expected to pass the Master's examination within the standard period of study. Unless the Master's examination is passed within four semesters after the end of the standard period of study, the exam is considered a fail. A failed Master's examination can be retaken once within one year. After this deadline passed, the exam is assessed as fail once again. A second attempt is only possible at the next scheduled exam date. Afterwards the Master's examination is considered failed at the final attempt.

(2) It is necessary that module examinations are taken by the end of the semester that is defined in the curriculum structure.

(3) On the basis of the study regulations and the courses offered, the Technische Universität Dresden ensures that academic qualifications and exams and also the Master's thesis and the defence can be accomplished within the defined periods of time. Students are informed in time about type, number and dates of academic qualifications and exams, and also about the dates of issue and submission of the Master's thesis and the day and time of the oral defence. Students are informed about the number of possible retakes before each module exam.

(4) During maternity and parental leave times, periods do not start and maternity and parental leave times do not count towards running periods.

§ 4
General requirements for admission and admission procedures

(1) The Master's examination can only be taken by students who

1. are enrolled in the Master programme *Distributed Systems Engineering* at Technische Universität Dresden,
2. have fulfilled the relevant subject-related prerequisites (§ 23) and

3. have made a declaration relating to section 4 no. 3 either in writing or recorded in a data processing system.

(2) For taking exams or rendering other assessments, students must register. Registration procedures and deadlines are defined by the board of examiners and are publicly announced by the faculty in the known manner at the beginning of each semester. Later cancellation is possible without stating reasons. Cancellations must be announced two weeks before the exam date for oral assessments and three working days before the exam date for all other assessments.

(3) Students are admitted to
1. an assessment because of the relevant exam registration.
2. the Master's thesis because of the application for a thesis topic or, in case of § 18 sec. 3 sentence 5, as the topic is handed over and
3. to the defence of the Master's thesis because the student was given grade „pass" (4.0) or better for the Master's thesis.

(4) Admission is refused if
1. the prerequisites mentioned in section 1 or the rules of procedure in accordance with section 2 are not fulfilled or
2. the papers are incomplete or
3. students already failed an exam at the final attempt and this exam is prerequisite for the successful completion of the Master programme Distributed Systems Engineering.

(5) The board of examiners decides on admission. Admission may be publicly announced. § 15 sec. 4 remains unaffected.

§ 5
Types of examinations and assessments

(1) Examinations and assessments can be completed as
1. written exams (§ 6),
2. seminar papers (§ 7),
3. oral assessments (§ 8) and/or
4. lab courses and internships (§ 9)

. Written assessments of the multiple-choice type are generally accepted. The Multiple-Choice Rules of the Faculty of Computer Science shall apply as amended.

(2) Academic performances, exams and assessments shall be completed in English – as a rule. Oral assessments can also be completed in German upon the student's application.

(3) If a student can produce prima facie evidence that s/he is unable to either partly or entirely complete assessments in the defined manner because of a long-time or permanent physical defect or chronic illness, the chairperson of the board of examiners will allow her/him to render the assessments within a longer period or to render equivalent assessments in a suitable manner. Students may be asked to produce a medical certificate from a doctor and, if there is reasonable doubt, evidence from a public health officer. Equivalent provisions apply to exam prerequisites. You may submit one application for several or all assessments of the Master's examination at the same time.

(4) If a student can produce prima facie evidence that s/he is unable to complete assessments in the defined manner because s/he cares for own children, who are 14 years old or younger, or for close relatives, the chairperson of the board of examiners will accept applications to complete assessments in an equivalent manner. Close relatives are children, parents, grandparents, spouses and domestic partners. The chairperson of the board of examiners will decide on how the assessment shall be completed by appointment with the responsible examiner according to their reasonably exercised discretion. Suitable measures for the compensation for disadvantages are, e. g. longer times and breaks when working on projects or theses, use of alternative media, alternative exam locations within the university or alternative exam dates. Equivalent provisions apply to exam prerequisites.

§ 6
Written exams

(1) Written exams are designed to show that students are able to solve tasks and work on topics on the basis of the necessary basic knowledge within a limited time frame and with the use of certain aids and making use of the common methods of the subject studied. It is possible that several tasks or topics are given to work on.

(2) Written exams, the passing of which is a prerequisite requirement for being allowed to continue studies, are assessed by two examiners as a rule, however always in case of the second and last attempt. The grade is calculated from the arithmetic mean of the individual assessments pursuant to § 10 sec. 2. The procedure of evaluation including the announcement of exam results shall not last longer than four weeks.

(3) The module descriptions define the duration of a written exam. The minimum duration is 60 minutes and the maximum duration 180 minutes.

§ 7
Seminar papers

(1) Seminar papers are designed to demonstrate the student's skills to work on specific tasks using the subject-related literature and other sources within a limited time frame. Furthermore, they serve to find out if the student can manage the basic tools of scientific work. If the module descriptions indicate so, seminar papers also demonstrate the student's competence to present and discuss conclusive results.

(2) § 6 sec. 2 sentence 1 shall apply accordingly for seminar papers.

(3) The total of hours for seminar papers should not exceed 120 hours. The actual number of hours is defined in the module description.

§ 8
Oral assessments

(1) Oral assessments are designed to demonstrate that the student is able to discern interrelations of the field of knowledge examined and to link specific questions with these interrelations

and to answer them. Moreover, it shall be ascertained whether the student has developed the basic knowledge that is typical for students at this stage of the programme.

(2) Oral assessments are, as a rule, conducted as individual examinations by at least two examiners (in a so-called *Kollegialprüfung*) or by one examiner who is accompanied by an expert associate examiner (§ 16).

(3) Oral assessments may last from 15 to 60 minutes. The actual duration is defined in the module description.

(4) The substantial subjects and results of the oral assessments should be recorded in minutes. The student is informed about the result right after the oral assessment.

(5) Students, who wish to take the same assessment at a later time, shall be admitted to the exam as listeners except that the examinee objects. Listeners are not admitted to the internal examiner consultation and the announcement of the exam results.

§ 9
Lab courses and internships

(1) Lab courses and internships are designed to allow students to demonstrate their ability to analyse practical tasks and identify efficient solutions in a limited time. Moreover, practical classes serve to assess whether students can employ the techniques taught.

(2) Students complete lab courses at the university and take industrial placements. Lab courses and internships are supervised by a university teacher.

(3) § 6 par. 2 sentence 1 shall apply accordingly for lab courses and internships.

(4) The module descriptions define the duration of lab courses and internships which is 24 weeks as a maximum.

(5) If the project is done as a group project, there should be a clear distinction of each student's contribution for grading purposes and the requirements according to section 1 should be fulfilled.

§ 10
Assessment of assessments, calculation and weighting of grades, announcement of examination results

(1) The individual assessments are evaluated by the examiners. The grades below shall be used:

1 = very good	= a very good performance;
2 = good	= a performance that stands out considerably from the average
3 = average	= a performance that meets average requirements;
4 = pass	= a performance that still meets the requirements despite some inadequacies;
5 = fail	= a performance that does not meet the requirements because of grave inadequacies.

For a more detailed assessment, grades can be raised or lowered by 0.3 to obtain intermediate values; grades 0.7, 4.3, 4.7 and 5.3 cannot be given. A single assessment is rated as „passed“ or „failed“ (ungraded assessment) if the relevant module description provides for this as an exception. Ungraded assessments that are rated as „passed“ do not enter further grade calculations; ungraded assessments that are rated as „failed“ enter further grade calculations as grade 5 (fail);

(2) The module grade is calculated from the average of the grades given for the assessments of the module, to which a weighting factor may be applied if prescribed so in the module description. Only the first decimal place is indicated; all other decimal places are eliminated without rounding. On the basis of the averages below, the module grades are
grades 1.5 and better = very good,
grades between 1.6 and 2.5 inclusively = good,
grades between 2.6 and 3.5 inclusively = average
grades between 3.6 and 4.0 inclusively = pass
grades 4.1 and worse = fail.

(3) Module examinations, which solely consist of an ungraded assessment, are rated as „passed“ or „failed“ (ungraded module examinations) in accordance with the evaluation of the assessment. Ungraded module examinations do not enter further grade calculations.

(4) An overall grade is calculated for the Master's examination. The overall grade of the Master's examination consists of the final grade given for the Master's thesis, to which a weighting factor of 30 is applied, and the module grades that are weighted on the basis of the credits according to § 26 sec. 1. The final grade given for the Master's thesis is a combination of the grade given for the Master's thesis with a weighting factor of 3 and the grade given for the defence with a weighting factor of 1. For the calculation of the overall and final grades, sec. 2 sentences 2 and 3 shall apply mutatis mutandis.

(5) The overall grade given for the Master's examination is additionally shown as a relative grade on the basis of the ECTS grading scale pursuant to the pertinent provisions.

(6) The students shall be informed about the details concerning the announcement of the examination results in the usual way of announcement.

§ 11
Non-appearance, withdrawals, cheating, breach of regulations

(1) An assessment is evaluated with grade „fail“ (5.0) or as „exam failed“ if the student fails to appear for a binding exam date or if s/he withdraws from a registered exam without good cause. The same applies when an assessment is not completed within the defined period of time.

(2) The student has to announce and substantiate the good cause for the withdrawal or the non-appearance in writing and immediately to the Examination Office. In case of illness, the student may be asked to produce a medical certificate and, if there is reasonable doubt, evidence by a medical officer of health. As regards the adherence to deadlines for the first registration for exams, retake of exams, reasons for no-shows and the adherence to time limits for working on

exams, illness of the student is equivalent to illness of the child for which the student has the sole parental responsibility most of the time. If the reason is accepted, a new exam date is set. In this case, if exam results are already available they will be counted towards the final result. The board of examiners decides upon the acceptability of the withdrawal or the reason for no-show.

(3) If a student attempts to manipulate the result of the assessment by fraud or the use of unfair means, the relevant assessment will be evaluated as „insufficient" (5.0). Accordingly, ungraded assessments are evaluated as "fail". Students who obstruct the proper process of an exam, can be excluded from completing the assessment by the examiner or the proctor; in this case, the assessment is rated as „fail" (5.0) or „exam failed". In cases of serious cheating or breaches of rules, the board of examiners can exclude students from completing further assessments in the pertinent module and in very serious cases also from other modules.

(4) Sections 1 to 3 shall apply mutatis mutandis for exam prerequisites, the Master's thesis and the defence.

§ 12
Pass and fail

(1) A module exam is passed if the module grade is „sufficient" (4.0) or better or if the ungraded module exam is assessed as „pass". If the student passed the module exam, s/he earns the credits that are associated with the module in the module description.

(2) The Master's examination is passed after the module examinations, the Master's thesis and the defence are all passed. Master's thesis and defence are passed if they are assessed as „pass" (4.0) or better.

(3) A module exam is not passed if the module grade is worse than „pass" (4.0) or if the ungraded module exam is assessed as „exam failed". A module examination which consists of more than one assessment is considered as "failed" already in the first attempt as soon as it is certain pursuant to § 10 par. 2, that a module grade of "pass" (4.0) or better is mathematically no longer possible.

(4) A module exam is failed at the final attempt unless the module grade is „pass" (4.0) or better or if the module exam is assessed as „fail" and it is no longer possible to retake the exam. The Master's thesis and defence are failed at the final attempt unless they were assessed with grade „pass" (4.0) or better and unless it is possible to retake the exam.

(5) A Master's examination is failed or failed at the final attempt if either a module exam, the Master's thesis or the defence are failed or failed at the final attempt, respectively. § 3, par. 1 remains unaffected.

(6) If a student failed a module exam, or if the Master's thesis or the defence were assessed with a grade worse than „pass" (4.0), the student shall be informed about whether and to which extent and within which time limits s/he can retake the relevant part.

(7) If a student failed the Master's examination, s/he can apply for a certificate that confirms the completion of parts of exams and their assessment and – if applicable – the uncompleted/failed parts of exams and which also states that the Master's examination was not yet successfully passed, upon the production of the necessary proofs of academic achievements and the certificate of withdrawal from the student register.

§ 13
Resitting module examinations

(1) Failed module examinations can be retaken once within one year after the completion of the first attempt. The deadline starts on the day students are notified of the first fail of the module exam. After the deadline passed, the exams are considered as failed once again. An assessment, which has not yet been evaluated pursuant to § 12 par. 3 sentence 2, can be retaken once more at the next available exam date if the repeated module exam is failed pursuant to sentence 1 because this assessment was not graded with „pass" (4.0) or better. Failure to meet the deadline pursuant to § 3, par. 1 sentence 2 is also regarded as an evaluation. If assessments are retaken pursuant to sentence 4, they are regarded and graded as the first resit of the module exam.

(2) The exam can be retaken for the second time only at the next available exam date. Afterwards, the module exam is considered to be failed in the final attempt. Students can no longer resit exams they failed at the final attempt.

(3) Within a failed module exam, which consists of several assessments, only those assessments shall be retaken which are graded „pass" (4.0) or better or that are considered „passed".

(4) Unsuccessful attempts of the module exam of the same or other programmes will be taken over.

§ 14
Recognition of graded and ungraded work, study periods and qualifications obtained outside a HE institution

(1) Ungraded coursework and examinations completed at a university can be credited toward your programme upon application unless there are crucial differences regarding the competencies acquired. Where appropriate take notice of further agreements of Technische Universität Dresden, HRK, KMK and also those ratified by the Federal Republic of Germany.

(2) Qualifications gained outside a university can be credited toward your programme upon application if they are equivalent. There is equivalence when contents, number of hours and requirements are in substantial accordance with parts of the Master programme Distributed Systems Engineering at the Technische Universität Dresden. No schematic comparison shall be made but an overall analysis and an overall evaluation. Qualifications gained outside a university cannot replace more than 50 % of the programme.

(3) Ungraded coursework and examinations completed in the same degree programme in the Federal Republic of Germany are credited toward a programme without filing an application.

(4) Ungraded coursework and examinations completed at a university may be credited toward a programme despite crucial differences if they are in general accordance with the purpose and aim of an option offered in this programme on the basis of their contents and qualification aims and are hence a structural equivalent. The certificate will show the work and exams the student actually completed.

(5) The recognition or transfer of ungraded coursework and examinations pursuant to paragraphs 1,3 or 4 or the recognition of qualifications obtained outside a university pursuant to paragraph 2 is accompanied by the official recognition of study periods. Provided the grade systems are comparable, grades will be adopted and will enter the calculation of grades. Unless grade systems are comparable, the addition 'pass' is made and grades will not enter the grade calculation. Recognition may be marked as such in the certificate.

(6) Recognition is made by the board of examiners. It is necessary that the student produces the relevant documents required for the recognition. After the student handed in the documents, the recognition process must not exceed one month. If recognition is denied, § 15 par. 4 sentence 1 shall apply.

§ 15
Boards of examiners

(1) For the Master programme Distributed Systems Engineering a board of examiners is formed the members of which will organise and conduct examinations and also fulfil tasks that arise from the examination regulations. Three university lecturers, a research fellow and a student form the board of examiners. With the exception of the student, the members remain in this office for three years. The student will remain in the office for one year.

(2) The chairperson, his / her deputy and the other members and their deputies are appointed by the Faculty Council of the Faculty of Computer Science, the student member is suggested by the council of student representatives. Normally, the chairperson manages the affairs of the board of examiners.

(3) The board of examiners ensures that the provisions of the examination regulations are met. At regular intervals, the board reports to the faculty about the development of examination and study periods including the actual times needed for completing the Master's thesis and also about the distribution of the module and overall grades. The report shall be disclosed by the Technische Universität Dresden in a suitable manner. The board of examiners makes suggestions as to reforms of the examination regulations, the study regulations, the module descriptions and the curriculum plan.

(4) Undesirable decisions shall be notified in writing to the student in question and shall be accompanied by reasons and by information on legal remedies. The board of examiners as examination authority decides on appeals within reasonable time and issues the determinations to appeals.

(5) The members of the board of examiners have the right to attend exams, assessments and the defence of the Master's thesis.

(6) The members of the board of examiners and their deputies are subject to professional discretion. Unless they are civil servants, the chairperson shall direct members to use professional discretion.

(7) The examination office organises the examinations and keeps examination files on the basis of the decisions made by the board of examiners.

§ 16
Examiners and co-examiners

(1) The board of examiners appoints university teachers and other persons as examiners who are authorised to conduct examinations pursuant to *Land* law. Co-examiners must have passed a Master's examination or a comparable exam in the relevant subject area.

(2) Students can suggest the supervisor for their Master's thesis and the examiners for oral assessments and also the defence of the Master's thesis. The proposal does not substantiate a claim.

(3) The names of examiners shall be announced to students in good time.

(4) For examiners and co-examiners § 15 sec. 6 applies accordingly.

§ 17
Purpose of the Master's examination

Passing the Master's examination marks the completion of the programme and the award of the job-qualifying degree. This is to ascertain that the student has achieved the aims set in the Study Regulations and can undertake independent academic work on a specific topic in the field of Distributed Systems Engineering.

§ 18
Purpose, issue, submission, assessment and re-submission of a Master's thesis and the defence

(1) The purpose of the Master's thesis is to demonstrate that the student is able to conduct independent work on complex tasks in the subject area using scientific methods and within a specified time.

(2) The supervisor for the Master's thesis can be a professor or another person who is entitled to hold examinations pursuant to *Sächsisches Hochschulfreiheitsgesetz* provided this person works at the Faculty Computer Science of Technische Universität Dresden. If the student wishes that the supervisor for the Master's thesis is a person that is entitled to hold examinations but does not work in the university, the chairperson of the board of examiners shall agree.

(3) The board of examiners hands out the topic of the Master's thesis. The topic and the date of handing it out shall be placed on record. Students can suggest preferred topics. Upon application of the student, the board of examiners arranges for the issue of the topic for the Master's

thesis in good time. The topic is issued ex officio at the latest at the beginning of the semester that follows the completion of the last module exam.

(4) The topic can be returned only once and only within two months after it was issued. However, in case of a repeated Master's thesis students are allowed to return the topic only unless they returned the topic in their first Master's thesis attempt.

(5) The Master's thesis can also be performed in a team as long as the individual part worked out by the student as his/her Master's thesis can be clearly defined on the basis of paragraphs, page numbers or other objective criteria which allow an individual assessment and fulfil the requirements stated in paragraph 1.

(6) Students shall submit two printed and bound copies of the Master's thesis and also a digital version on a data carrier to the Examination Office within the agreed time limit; the hand-in time shall be placed on record. In submitting, students declare in writing that the Master's thesis – in case of group work the marked part of the work – is their own work and that they used only the indicated references and devices.

(7) The Master's thesis and the defence shall be completed in English – as a rule. Where appropriate, the Master's thesis and the defence can also be completed in German in agreement with the supervisor; this agreement shall be documented.

(8) Two examiners will decide on the grade given for the Master's thesis pursuant to § 10 sec. 1 sentences 1 to 3. The supervisor of the Master's thesis shall be one of the examiners. The duration of the evaluation procedure should not be longer than two weeks.

(9) The grade of the Master's thesis is the calculated average of the two individual grades given by the examiners. If the individual grades given by the examiners differ by more than two grades from each other, the average grade shall be given provided both examiners agree. If they do not agree, the board of examiners appoints another examiner for a third grade. As a result, the grade for the Master's thesis is the calculated average of the three individual grades. § 11 sec. 2 sentences 2 and 3 apply accordingly.

(10) If one examiner gave grade „pass" (4.0) or better for the Master's thesis and the other examiner gave grade „fail" (5.0), the board of examiners will appoint another examiner for a third grade. This third assessment decides whether the Master's thesis is a pass or fail. If the Master's thesis as a result of the third assessment is a pass, the average grade is calculated from the individual grades given by the 'pass' voters, otherwise it is calculated from the grades given by the 'fail' voters. § 11 sec. 2 sentences 2 and 3 apply accordingly.

(11) Students can repeat the Master's thesis once within one year if the grade given for it is „pass" (4.0) or worse.

(12) Students shall defend their Master's thesis in public in front of their thesis supervisor in his/her capacity as examiner and a co-examiner. Minutes shall be taken of the defence. Section 10 and § 8 sec. 4 and § 10 sec. 1 sentences 1 to 3 apply accordingly.

§ 19
Master degree certificate and certificate of grades

(1) A certificate of the passed Master's examination is issued immediately, if possible within four weeks, and handed over to the student. The certificate of the Master's examination shall contain the module assessments pursuant to § 24 sec. 1, the topic of the Master's thesis, the grade, the supervisor and also the final grade. Students may apply for the addition of extra information in an annex to the certificate, such as the assessment of additional modules and the duration of subject-specific studies by the time the Master's examination is completed. The grades earned for individual assessments are also listed in the annex to the certificate

(2) Concurrently with the certificate of the Master's examination students are handed over the Master's degree certificate indicating the date the certificate is issued. This document is to certify that the student is awarded the Master's degree. The Master's degree certificate is signed by the rector and the chairperson of the board of examiners and bears the round raised seal of Technische Universität Dresden. Moreover, students are awarded the Master's degree certificate and the certificate of the Master's examination in English.

(3) The certificate bears the date when the student completed the last part of the examination pursuant to §12 par. 2. The certificate is signed by the chairperson of the board of examiners and by the dean of the faculty of computer science and bears the faculty's round official stamp of Technische Universität Dresden.

(4) The Technische Universität Dresden issues a Diploma Supplement (DS) following the „Diploma Supplement Model" of the European Union/Council of Europe/UNESCO. The text, which has been agreed upon by KMK and HRK, shall be used in its current version to describe the national education system (DS section 8).

§ 20
Invalid Master's examination

(1) If a student cheated during an exam or assessment and this becomes known only after s/he has been given the certificate, the assessment of the exam can be modified pursuant to § 11 par. 3. Where appropriate, the board of examiners can declare the module exam as „fail" (5.0) and the Master's examination as „failed". The same shall apply mutatis mutandis for ungraded module examinations and the Master's thesis and also the defence .

(2) If the prerequisites for taking an examination were not fulfilled and the student did not attempt to disguise this fact, and provided this fact becomes known only after the student has been handed the certificate, this defect of title is cured by the passing of the examination. If the student wilfully and wrongfully brings about taking an examination, the board of examiners can declare the examination together with the module exam to be a grade „fail" (5.0) and the Master's examination „failed". The same shall apply mutatis mutandis for ungraded module examinations and the Master's thesis and also the defence.

(3) The student shall have the opportunity to comment on the case before a decision is made.

(4) The chairperson of the board of examiners will confiscate the false certificate and issue a new one if appropriate. The Master degree certificate, the translations and the diploma supplement shall be confiscated together with the false certificate provided the Master's examination has been declared to be a „fail" as the result of cheating. It is impossible to make a decision pursuant to section 1 and section 2 sentence 2 or 3 later than five years after the day the certificate was issued.

§ 21
Examination of exam records

The student has the right to file an application within one year after the examination procedure has been closed to be allowed to examine written examinations and the assessments thereof and the exam records within adequate time.

Section 2: Subject-specific provisions

§ 22
Duration, structure and scope of studies

(1) Pursuant to § 1 the standard period of study is 4 semesters.

(2) The programme has a modular structure and is completed with the Master's thesis and the defence.

(3) By passing the Master's examination the student earns a total of 120 credits in the required and optional modules, and also by doing the Master's thesis and the defence. The programme includes five required modules with a total of 42 credits and optional modules with a total of 48 credits.

§ 23
Subject-related prerequisites for the Master's examination

Academic achievements can be prerequisites for exams and assessments. Their number, type and organisation shall be defined in the module descriptions, it is also possible to limit the number of possible retakes. Before the defence, the Master's thesis and the module examinations of the required modules given in § 24 par. 2 must have been passed with grade „sufficient" (4.0) or better.

§ 24
Subject, type and scope of the Master's examination

(1) The Master's examination comprises all required module examinations, the chosen required elective modules and also the Master's thesis and the defence.

(2) The required modules are
1. Systems Engineering
2. Ubiquitous Systems
3. Transactional and Secure Platforms
4. System Design
5. internship

(3) The required elective modules are
1. Advanced Security & Cryptography
2. Wireless Sensor Networks
3. Distributed Operating Systems
4. Component-Based Software Engineering
5. Selected Areas of Internet-based Systems

6. Concurrent and Distributed Systems
7. Software Fault Tolerance
8. Microkernel-Based Operating Systems
9. Real-Time Systems
10. Application Development for Mobile & Ubiquitous Computing
11. Principles of Dependable Systems
12. Foundations of Computational Logic
13. Advanced Topics in Systems Architecture
14. Advanced Topics in Distributed Systems

of which students must choose modules with a total of 48 credits.

(4) The module descriptions define the required assessments, which are classified with the modules, their type and organisation. Unless otherwise specified in the module descriptions, content and skills of the module are subject of the exams and assessments.

(5) Students can take exams in modules other than those listed in section 1 (additional modules). The modules for these exams can be chosen freely from the overall module catalogue of Technische Universität Dresden or a co-operating institution of higher education. They are not incorporated into the calculation of the student workload. They are not incorporated into the calculation of the final grade.

§ 25
Time for working on the Master's thesis and duration of the defence

(1) The time allowed for working on the Master's thesis is 23 weeks; the student earns 29 credits. It is the supervisor's responsibility to limit the topic, the assigned task and the extent of the Master's thesis such that students are able to keep the deadline for completing the Master's thesis. In exceptional cases, the board of examiners can extend the time for working on the thesis for a further 13 weeks maximum, the number of credits remain unaffected.

(2) The defence lasts 30 minutes. The candidate earns one credit for the defence.

§ 26
Master's degree

After the student has passed the Master's examination, s/he is awarded the degree "Master of Science" (short: M.Sc.) .

Section 3: Final provisions

§ 27
Coming into force and public notice

These examination regulations become effective as of 01 October 2010 and are publicly announced in the Official Notices of Technische Universität Dresden.

Issued on the basis of the decision of the Faculty Council of the Faculty Computer Science made on 27.09.2010 and the approval of the Rectorial Board of 12.11.2013 .

Dresden, #date of issue#

The Rector
of Technische Universität Dresden

Prof. Dr.- Ing. habil. DEng/Auckland Hans Müller-Steinhagen

Appendix 2
Curriculum Plan

with the nature and extent of the courses in weeks per semester, as well as the required achievements, the nature, extent and structure of which are given in the module descriptions

Module number	Module name	1st Semester	2nd Semester	3rd Semester	4th Semester	Credit points
		V/Ü/S/L	V/Ü/S/L	V/Ü/S/L	V/Ü/S/L	
DSE-M1	Systems Engineering	4/4/0/0 PVL, PL				9
DSE-M2	Ubiquitous Systems	4/2/0/0 PL				7
DSE-M3	Transactional and Secure Platforms	4/4/0/0 PVL, PL				9
DSE-M4	System Design	2/2/0/0 PVL, PL				5
DSE-Int	Internship			0/0/0/8 PL		12
DSE-E1*	Advanced Security and Cryptography	2/2/0/0 PVL, PL				*6*
DSE-E2	Wireless Sensor Networks	2/0/2/0 PL				6
DSE-E3	Distributed Operating Systems	2/1/1/0,PL				6
DSE-E4	Component-Based Software Engineering	2/2/0/0 PVL, PL				6
DSE-E5	Selected Areas of Internet-based Systems	4/4/0/0 PL				12
DSE-E6	Concurrent and Distributed Systems	4/0/0/4 PVL, PL				12
DSE-E7	Software Fault Tolerance	2/2/0/0 PVL, PL	*0/0/2/4 PL*			15
DSE-E8	Microkernel-Based Operating Systems		*2/1/0/0 PL*			6
DSE-E9	Real-Time Systems		*2/1/0/0 PL*			6
DSE-E10	App. Dev. for Mobile & Ubiquitous Computing		*2/2/0/0 PL*			6
DSE-E11	Principles of Dependable Systems	0/0/2/0 PL	*2/2/0/0 PVL, PL*			9
DSE-E12	Foundations of Computational Logic		*4/4/0/0 PL*			9
DSE-E13	Advanced Topics in Systems Architecture		*2/0/0/0 PL*			3
DSE-E14	Advanced Topics in Distributed Systems		*2/2/0/0 PL*			6
					Master thesis, defence	29+1
	Credit points	30	30	30	30	

* Modules with a total of 48 credit points must be selected from the elective modules in accordance with the desired thematic focus.

Abbreviations:
V = Lecture Ü = Discussion section S = Seminar L = Laboratory hours
PVL = pre-examination task(s) PL = assessment(s)