

Study and examination regulations

for the master's study course

Applied Mathematics for Network and Data Sciences

at the Mittweida University of Applied Sciences

Faculty of Applied Computer Sciences and Biosciences

of 10 August 2017

On the basis of §34 para. 1 sent. 1, §36 para. 1 of the Act on the Freedom of Higher Education in the Free State of Saxony (Saxony Higher Education Act - SächsHSFG), in the version of the notice of 15 January 2013 (SächsGVBl. p. 3), as last amended by the act of 29 April 2015 (SächsGVBl. p. 349, 354), the Mittweida University of Applied Sciences, hereinafter referred to as HSMW, issues the following study and examination regulations.

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Section 1: General provisions

§1

Scope, study and examination objectives

- (1) These regulations are valid for the Applied Mathematics for Network and Data Sciences study course at HSMW.
- (2) The graduates of the Applied Mathematics master's program have in-depth theoretical and practical knowledge in current areas of applied mathematics, which are fundamental to the design and operation of digital media. They have application-oriented and research-relevant knowledge in the field of automation theory, coding theory, cryptology, mathematical network analysis, stochastic modeling, simulation and visualization, as well as in the fields of artificial intelligence. They are able to independently recognize new knowledge from other areas of mathematics and computer science and to recognize and integrate them into future scientific and technical developments.
- (3) The graduates have a special ability to abstract and are capable of conceptual, logical, structural and algorithmic thinking. They are capable of formulating, proving or refuting mathematical hypotheses. They have excellent programming skills as computer scientists; in addition, they have very profound knowledge of the underlying mathematical structures and the algorithms that are based on them. They are able to cooperate with computer scientists and engineers in larger programming projects interdisciplinarily and to take over project management in such projects.
- (4) Graduates are able to read current English-language research literature. They have mastered the international mathematical vocabulary in word and writing and can communicate their results in mathematical texts and lectures as well as using modern media at a high technical level. Their way of working is characterized by persistence and perseverance. They have the skills for conducting independent scientific work and furthering their education, for cooperation in scientific and public institutions, and for pursuing a doctorate in mathematics or computer science at a the university.
- (5) The HSMW supports the goal of integrating persons with disabilities. The students are taught the necessary knowledge to ensure accessibility for persons with disabilities (§3 SächsIntegrG).
- (6) The master's examination represents the concluding professional qualification of the study course. It is used to determine whether the candidate has acquired the necessary specialist knowledge required for transition to professional practice, has an overview of the contexts of her/his subject area and has the ability to apply scientific methods and findings independently.
- (7) If the master's examination is passed, the master's degree "Master of Science" (M.Sc.) is awarded for the Applied Mathematics for Network and Data Sciences study course.

§2

Access to studies

- (1) The Applied Mathematics for Network and Data Sciences master's program is a consecutive study course.
- (2) The qualification necessary for studying in the master's study course in Applied Mathematics for Network and Data Sciences at HSMW is demonstrated through a first professional degree awarded by a university or a degree from a state or federally accredited professional school in the area of mathematics or computer science.
- (3) Candidates must have at least the grade "satisfactory" in the basic English language course from their secondary school or an equivalent qualification as well as the grade of "satisfactory" in an English course according to paragraph 2. English education at a technical school is equivalent to the basic course at the secondary school. If these prerequisites or equivalent knowledge are not present, enrollment is subject to the condition that the English course in the general studies module is completed with at least the grade of "satisfactory" within the first two semesters of the master's study course.
- (4) The study course may be started in the winter semester unless otherwise stipulated by the faculty council of the Faculty of Applied Computer Science and Biosciences.
- (5) Admission is granted by HSMW department of candidate services and legal matters.

§3

Structure of the studies

- (1) Studies in the Applied Mathematics for Network and Data Sciences master's study course are conducted in English.
- (2) The study course is structured in a modular way. Credits are awarded according to the European Credit Transfer and Accumulation System (credits) according to the time required for:
 1. Participation in courses,
 2. Preparation and follow-up for courses,
 3. Independent study
 4. Preparation for and taking of examinations.

The number of credits received per module is taken from the study plan. Credits are only awarded if the module (§21 para. 1) is passed. One credit is equivalent to 30 hours of work for an average student.

- (3) The offered modules are either compulsory, compulsory elective or supplemental modules. Compulsory modules are modules that are required for all students. Compulsory elective modules are modules that are offered as alternatives. The modules elected by the student are treated as compulsory modules. Supplemental modules are courses offered so

students can supplement, improve, deepen or specialize their knowledge and are voluntary. There is no guarantee that all compulsory elective and supplemental modules will be offered.

- (4) Courses can be offered in particular as lectures, seminars or internships. In order to support the students, in particular beginners, tutorials are offered within the limits of the available capacities. In accordance with the module descriptions, courses may also be held in a foreign language.
- (5) Students who have not yet passed an examination by the beginning of the third semester should take part in an academic counseling session in the third semester.
- (6) The study course ends with the master's examination after reaching a total of at least 120 credits.

§4

Study plan and module catalog

- (1) The study plan applies to the study course (appendix). It contains:
 1. The compulsory and compulsory elective modules as well as the type of course and the number of hours,
 2. The required module examinations, including the type of examination, the duration of the examination, the weighting and the credits received if the module examination is passed,
 3. The distribution of the weekly hours per module and semester, and
 4. The recommended sequence of the modules.
- (2) With the decision of the faculty council of the Faculty of Applied Computer Science and Biosciences, a binding module manual is prepared for this study course. It must correspond in content and structure to the framework conditions for the introduction of credit point systems and the modularization of study courses (decision of the KMK of 15 September 2000 as amended). In the module manual, a module description is to be provided for each module. It should contain at least:
 1. The content and qualification objectives of the module,
 2. Course types,
 3. Requirements for participation,
 4. Application of the module,
 5. Prerequisites for the awarding of credits,
 6. Credits and grades,
 7. Frequency with which modules are offered,
 8. Required work,
 9. Duration of the modules.

§5

Examination structure

- (1) The master's examination consists of the module examinations including the master's project. It takes place in English.

- (2) A module is completed by a module examination. Module examinations can be composed of several examinations. The required module examinations are laid down in the study plan (appendix).
- (3) If a module examination consists of several examinations, they can be required in a certain order. Modules can also be required in a specific order. For more information, see the module descriptions.
- (4) In the study plan (appendix), prerequisites are defined for the module examination; they are required for admission to the module examination (examination prerequisites).

2. Section: Admission to the master's examination

§6

General admission requirements

- (1) The master's examination may be taken only if:
 1. The student is enrolled in the Applied Mathematics for Network and Data Sciences master's study course at HSMW;
 2. The student has fulfilled the prerequisites that are defined in the study plan for the respective module.
- (2) Admission to a module examination of the master's examination may be rejected only if:
 1. The prerequisites in para. 1 or procedural requirements referred to in §7 para. 1 are not fulfilled, or
 2. The documents are incomplete, or
 3. The candidate has definitively failed the final examination in the same study course or a comparable study course or is in an examination procedure in the same study course or a study course with the same professional orientation, or
 4. The student has already definitively failed a module examination required for completing this study course in another study course.
- (3) A module examination may also be taken by a student who is registered as an auditor at the HSMW, has a university entrance qualification, and the examination participant has been approved by the examiner upon request.

§7

Registration for and withdrawal from examination, admission procedure

- (1) For the examinations offered pursuant to §19 para. 4 sent. 1, a registration form shall be provided in a suitable manner within the period of four weeks to one week before the respective examination period by the department of study organization. The student must register for the examination electronically with a personal statement within this period. She/he confirms by signing that she/he meets all requirements for admission to the examination. If the candidate is refused admission, she/he must be informed of this before the start of the examination by the examiner. Otherwise, she/he is admitted to the examination.

- (2) Up to one week before the examination date, the student may withdraw from the examination without stating reasons by withdrawal from the registration form.
- (3) The examiner may also admit a student to be examined if she/he has failed to register for important reasons, the examination procedure is not interrupted by the late admission, and there are no valid grounds against admission. Para. 1 sent. 3 applies mutatis mutandis. Admission is provisional until the subsequent verification of fulfillment of the admission prerequisites.
- (4) At the beginning of the examination, the examiner or the supervisor has the right to require the candidates to identify themselves. If a candidate participates in a test without fulfilling the admission prerequisites, she/he can be excluded from the continuation of the examination by the respective examiner or by the supervisor.

§8

Types of examination prerequisites

- (1) Examination prerequisites are the admission requirements for individual module examinations. Examination prerequisites are evaluated, not necessarily graded, requirements that must be fulfilled as a part of the study course. They can be repeated as often as required.
- (2) Examination prerequisites must be completed in the following form:
 1. Lab certifications
Lab certifications include experimental or software engineering, and completed scientific tasks, which can also be carried out by computer. They include the preparation of tasks, the evaluation of data and the evaluation and discussion of the results. Lab certifications are generally to be carried out independently.
 2. Exercise certifications
Exercise certifications are examination prerequisites that are given on the basis of a regular, usually weekly, completion of written exercises. The exercise certification is passed if at least half of the achievable total requirements is fulfilled.
- (3) The number and nature of the required examination prerequisites can be found in the study plan. The subject matter of the examination prerequisites results from their assignment to the respective learning units.

3. Section: Module examinations

§9

Types of examinations

- (1) Examinations can be oral (§10), written (§11) or other types of examinations (§12). Alternative examinations based on the student's choice are also possible. The study plan provides further details.

- (2) Oral and other examinations can be taken as group examinations. The contribution of the individual must be significantly differentiated, must be a clear individual examination contribution, and must be evaluated separately. As a general rule, the group should not comprise more than three persons.
- (3) Upon the written application of the student to the examination committee, in exceptional cases, if the scope of examination remains equivalent, individual examinations may be carried out in a different form or be replaced by academic documents, provided that the studies are equivalent to the requirements and procedures of the examination. The studies are treated as examinations in terms of evaluation, passing, and repetition. The simultaneous recognition of such studies for different examinations is not possible.
- (4) If the candidate demonstrates that she/he is unable to take part in the examination in whole or in part as a result of a long-term or permanent disability, she/he is allowed to carry out the examination work within a longer period or to carry out an equivalent examination in another form. This may require the submission of a medical attestation and, in case of doubt, an official physician's attestation. The same applies to examination prerequisites.
- (5) If the candidate demonstrates that she/he is not able to perform the examinations as described above due to the care of her/his own children up to the age of 14 or to the care of close relatives, the chairperson of the examination committee shall allow the examination to be completed in an equivalent manner. Close relatives are children, parents, grandparents and spouses and domestic partners. The manner in which the examination is to be carried out shall be decided by the chairperson of the examination committee in coordination with the responsible examiner at her/his due discretion. Suitable measures to compensate for the disadvantage are, for example, extended processing periods, processing breaks, use of other media, use of different examination rooms within the university, or another examination date. The same applies to examination prerequisites.
- (6) Requests pursuant to para. 3 to 5 must be submitted up to four weeks before the examination.

§10

Oral examinations

- (1) Oral examinations are discussions for the purpose of examination.
- (2) In the course of the examination, the candidate should demonstrate the skill to recognize the contexts relevant to the examination area and be able to classify specific questions into these contexts. The examination is also intended to determine whether the candidate has broad basic knowledge. Within the scope of the oral examination, appropriate tasks can be given for written treatment, if the oral character of the examination is not thereby disturbed.
- (3) The duration of the oral examination should be at least 15 minutes and a maximum of 45 minutes per candidate.

- (4) Oral examinations are given before at least two examiners or before an examiner in the presence of an expert assessor (§15). The names of the examiners and candidates present as well as the essential items and results of the oral examinations must be recorded in a protocol. The results are announced to the candidate after the oral examination.
- (5) Students who wish to undergo the same examination in a later examination period are to be admitted as auditors, subject to spatial conditions, unless the candidate objects. However, admission does not extend to the advising of and provision of examination results to the candidate.

§11

Written examinations

- (1) Written examinations are spatially and temporally determined evaluations of performance in which the candidate is to prove that she/he can solve tasks and deal with topics in writing or by means of a computer on the basis of the necessary basic knowledge in a limited time and with limited resources using common methods of her/his subject. Several tasks or topics can be selected. Multiple-choice written examinations are not permitted.
- (2) Written examinations are given under supervision. The processing period may not be less than 90 minutes and should not exceed 240 minutes. If a candidate is late for a written examination, she/he has no claim to the corresponding extension of the processing period. Leaving the examination room is only permissible with the permission of a supervisor.
- (3) The present candidates, the beginning and the end of the examination, as well as special occurrences shall be recorded by the supervisor.
- (4) Written examinations, the passing of which is a prerequisite for continuing studies, are usually assessed by two examiners. In the event of a second repeat examination, this rule is mandatory. The evaluation procedure shall be concluded within four weeks of the examination date; the evaluation procedure for examinations taking place during the examination period of the summer semester shall be completed within eight weeks after the end of the examination period, provided that there are no valid reasons which require a longer evaluation period.

§12

Other examination types

- (1) Other examination types include project work, documentary work and presentations.
- (2) In project work, the student systematically works on a given topic over a longer limited period of time. In particular, the development, implementation and presentation of concepts, as well as the ability to work as a team, should be demonstrated. In this case, the student should demonstrate the skill that she/he can define goals for a larger task

and work on interdisciplinary approaches and concepts. The processing period for project work should not exceed 75 hours. Project work can be combined with a short presentation (duration 10 to 15 minutes) on the conception and work as part of a course. Project work can be done in groups of up to five students.

- (3) Documentary work is independent written work without restriction of the tools, in which theoretical or experimental findings of a completed sub-area are summarized, evaluated and discussed.
- (4) Presentations are independent oral discussions of theoretical or experimental results using audiovisual media in front of an audience, in which the student should demonstrate her/his ability to prepare and present on specific questions. Presentations may include an expert discussion.
- (5) Other examination types are generally evaluated by the instructor. For other examination types, the passing of which is a prerequisite for continuation of studies, §11 para. 4 applies accordingly. Any other examinations must be documented in the course of the examination by means of written documents signed by the examiners.

§13

Subject of the module examinations

- (1) In the study plan, the module examinations as well as the type, design and weighting of the individual examinations are specified. The number of module examinations as well as examinations within the meaning of §§10 and 11 may not exceed six per semester. The total number of all examinations per semester may not exceed ten.
- (2) The subject of the module examinations is the content of the courses assigned to the modules. The subject matter of the individual examinations results from their assignment to the respective learning units in the study plan. For a module with only one examination, the subject of the examination is the entire content of the module.

§14

Additional modules

A student can undertake module examinations in modules in addition to those proscribed in the Applied Mathematics for Network and Data Sciences master's study course as well as other module examinations in other study courses (supplemental modules). The results of the module examinations in these modules are not included in the overall evaluation of the master's examination. Participation in module examinations of another study course requires university entrance qualification for this study course and the examiner's prior approval.

4. Section: Examination bodies

§15

Examiners and assessors

- (1) Examiners are entitled to evaluate examinations. Assessors have consultative votes. Only those members and employees of HSMW or another higher education institution who are entitled to independent teaching in the relevant examination area are to be appointed as examiners. If it is appropriate according to the subject of the examination, someone may also be appointed as examiner who has the power to teach independently only for a sub-area of the examination subject. In exceptional cases, instructors may also be appointed, as well as those experienced in professional practice and training, as examiners for special tasks if this is appropriate according to the nature of the examination. Examinations may only be evaluated by persons who themselves have at least the qualification to be determined by the examination or an equivalent qualification.
- (2) §16 para. 6 applies mutatis mutandis to the examiners and the assessors.
- (3) The names of the examiners are to be announced to the candidate in good time.

§16

Examination committee

- (1) The faculty council provides an examination committee for the study courses in the Faculty of Applied Computer Science and Biosciences.
- (2) The examination committee shall report to the faculty council on the development of the examination and study periods including the actual processing period for the master's thesis as well as the distribution of the module grades and overall grades. The examination committee provides suggestions for the reform of the study and examination regulations, the module descriptions and the study plans. The report shall be disclosed in an appropriate manner at HSMW.
- (3) The examination committee consists of five members, of which at least one is a student. The professors must possess the absolute majority of the votes. The student members have only a consultative voice. They are elected for one year by the council of the Faculty of Applied Computer Science and Biosciences. The other members are appointed by the faculty council for three years. Repeated membership in the examination committee is permitted.
- (4) The faculty council appoints the chairperson of the examination committee and her/his deputy. Both must be professors. The examination committee shall establish its own rules of procedure. Between the meetings of the examination committee, the chairperson, or in the absence of the chairperson her/his deputy, conducts the business. The work of the examination committee must be documented in a comprehensible manner.
- (5) The members of the examination committee have the right to attend examinations. This does not apply to student members who wish to undergo the same examination during the same examination period.

- (6) The members of the examination committee are subject to confidentiality. Unless they are in the public sector, they are obliged to confidentiality by the chairperson. The deliberations of the examination committee are not public.

§17

University examination committee

The HSMW has a university examination committee. The composition of the university examination committee is defined in a regulation. The university examination committee is an appeal authority for all decisions of the examination committee.

§18

Responsibilities

- (1) The examination committee is responsible for the monitoring of compliance with these examination regulations.
- (2) The examination committee decides on:
1. Fundamental questions regarding examination matters,
 2. The submission of an examination in a form other than the one foreseen (§9 para. 3 and 4),
 3. The review of the reasons for the extension of the evaluation period (§11 para. 4),
 4. The appointment of examiners and assessors (§15),
 5. The granting of the overall predicate "with distinction" (§20 para. 4 sent. 4),
 6. Passing and failing (§21),
 7. The consequences of the breaches of the examination regulations (§§24, 25),
 8. The rejection or acceptance of a reason for the failure to attend or the withdrawal from an examination (§24 para. 1),
 9. The recognition of study times, study and examination types and credits (§26),
 10. The recognition of performance outside the university system (§ 27),
 11. The determination of the invalidity of the master's examination after certificate is issued (§29),
 12. Viewing of the examination files (§30),
 13. Appeals against examination decisions (§31),
 14. The right to publish the master's thesis (§32 para. 4),
 15. The extension of the processing period for the master's thesis (§ 32 para. 6),
 16. The appointment of the examination committee for the colloquium (§34 para. 1),
 17. The extension of the regular study period.
- (3) The university examination committee decides on appeals about decisions regarding removal from the examination committee (§ 31 para. 2 sent. 2).
- (4) The department of study organization is responsible for the organizational tasks necessary for these regulations. These include in particular:
1. The keeping of examination files,
 2. The temporal and spatial organization and coordination of the examinations in cooperation with the faculties,

3. The information on procedures relevant to examinations,
4. The issuing of certifications,
5. The issuing of certificates and diplomas (§28), as well as
6. The issuing and signing of study certificates pursuant to §21 para.
- 7.

5. Section: Procedure regulations

§19

Deadlines

- (1) The regular study period is four semesters. It includes the theoretical study semesters and the module examinations including the master's project. The master's examination is to be taken within the regular study period and must be taken within four semesters after the completion of the regular study period. Module examinations are to be taken in the semester provided for in the study plan (appendix).
- (2) Leave of absence periods are not counted as part of the regular study period. For students who have participated for at least one election period in the bodies of HSMW, the student union or the student body or in the studies committee of the Applied Mathematics for Network and Data Sciences study course, one semester will not be counted against the regular study period. In the event of several years of participation, three semesters will not count against the regular study period.
- (3) Failure to meet the deadline for which the student is not responsible shall not be taken into account during the calculation of the deadlines for leaves of absence and the examination procedure; the regular study period shall be extended accordingly. This also applies to periods of maternity leave and parental leave, the interruption of studies due to prolonged serious illness or other compelling reason, as well as study delays due to a disability as well as study abroad.
- (4) By the end of each semester, at least those module examinations will be offered which are required according to the study plan. Examinations are to be arranged in such a way that no course meetings are missed. Examinations not taken during the course of studies take place in an examination period following the lecture period. First repeat examinations are usually to be taken in the following semester, but at the earliest three weeks after the announcement of the examination results.
- (5) The examinations taking place during this semester, their dates and times and the examiners are to be announced by the Faculty of Applied Computer Science and Biosciences as preliminary information within a period of four weeks after the start of the lecture period. If the examination takes place outside the examination period, the information on the date and times shall be supplemented with specification of the calendar week. The dates of the examinations, which take place outside the examination period, must be included in the course planning and must be announced to the student by the examiner no later than two weeks before the examination date. At least the examinations for compulsory modules provided for in the study plan are included in the central planning of the examinations. The

binding announcement of the central planning of the examinations takes place at the latest two weeks before the start of the examination period.

§20

Evaluation of the examinations and grades

- (1) The grades for the individual examinations are determined by the respective examiners. The following grades are to be used for the evaluation of the examinations:

1	Very good	Excellent work
2	Good	Work that is significantly above the average requirements
3	Satisfactory	Work that meets the average requirements
4	Adequate	Work that meets the requirements despite its deficiencies
5	Inadequate	Work that does not fulfill the requirements due to significant deficiencies

For a differentiated assessment of the examination results individual grades can be increased or decreased by 0.3 to intermediate values; the grades 0.7; 4.3; 4.7 and 5.3 are excluded. If an examination is evaluated by several examiners, the grading is carried out using the arithmetic mean of the individual grades according to paragraph 2.

- (2) If a module examination consists of several examinations, the module score is calculated from the average of the weighted grades of the individual examinations according to the study plan. Only the first digit after the decimal point is considered here; all other places are deleted without rounding.

- (3) The module score corresponds to the rating:

For an average up to and including 1.5 = Very good; For an average of 1.6 up to and including 2.5 = Good;
For an average of 2.6 up to and including 3.5 = Satisfactory; For an average of 3.6 up to and including 4.0 = Adequate; For an average of 4.1 and above = Inadequate.

- (4) A total grade is formed for the master's examination. In the calculation of the overall grade of the master's examination, all module grades of the master's examination including the grade of the master's project are included. The provisions of paragraphs 2 and 3 apply mutatis mutandis to the formation of the total grade. For a total grade of 1.2 or better, the overall predicate "with distinction" is awarded.
- (5) Within the framework of the cooperation with universities at home and abroad, in addition to the overall grade, information may be provided on request about how many students have completed the study course within the last three years and what proportion

of the students who completed the course received which grade (ECTS classification table).

§21

Passing and failing

- (1) A module examination is passed if the module grade is at least “adequate” (4.0). In justified cases, a module examination with several examinations is passed only if the examinations specified in the study plan (appendix) were evaluated as at least as “adequate” (4.0). If the module examination is passed, the credits for the module described in the module description are acquired.
- (2) A module examination is failed if the module grade is lower than “adequate” (4.0). It is definitively failed if the module grade is not at least “adequate” (4.0) and its repetition is no longer possible. A module examination is deemed definitively failed if the student has not enrolled for the second repeat examination by the deadline without due cause.
- (3) The master's examination is passed if all module examinations of the master's examination have been passed, and the master's project has been evaluated with at least the grade of “adequate” (4.0).
- (4) The master's examination is failed if a module examination including the master's project is failed. A master's examination that has not been taken within four semesters after completion of the examination period is deemed failed. The master's examination is definitively failed if a module examination including the master's project is definitively failed. The candidate can still take part in other module examinations as long as the definitive failure of the of the master's examination has not yet been established.
- (5) The candidate will receive a written notification with an explanation of the legal appeal regarding the definitive failure of a module examination and the impossibility of the successful completion of the chosen study course.
- (6) If the candidate has definitively failed the master's examination, she/he shall on request, upon submission of the relevant certificates and the certificate of exmatriculation, receive a certification that contains the examinations, grades and credits obtained, as well as the still missing examinations and indicates that the master's examination has been failed.
- (7) The university provides students who do not complete their studies with a certificate of study regarding the work and credits obtained.

§22

Repetition of the module examinations and the master's examination

- (1) A module examination that is failed can only be repeated once within one year after completion of the first examination. Upon expiration of this period, the examination shall be deemed failed. Admission

to a repeat examination is possible only on application at the next possible regular examination date at the latest within one year; after this, it is deemed definitively failed. Registration for the examination qualifies as an application.

- (2) The repetition of a module examination that is failed is not possible.
- (3) In the event of a failed module examination, which consists of several examinations, only the examinations not evaluated with at least "adequate" (4.0) may be repeated.
- (4) A failed master's examination can only be repeated once within one year. Upon expiration of this period, the repeated examination shall be deemed failed. A second repetition of the master's examination can only be carried out on application at the next possible examination date at the latest within one year; after this, the master's examination will be deemed definitively failed. Registration for a second repeat examination qualifies as an application.
- (5) Failed examinations at another university in the Federal Republic of Germany in the same study course or in a corresponding study course are counted toward the possibility of a repeat examination.

§23
(not used)

§24
Absence, withdrawal

- (1) An examination is graded as "inadequate" (5.0) if the candidate misses a binding examination date without a valid reason or if she/he withdraws without good reason after the examination has started. The same applies if the specified processing period of an examination is exceeded.
- (2) The candidate must immediately inform the examiner in writing of the reason for the absence or the withdrawal from the examination. In the event of illness, the candidate must present a medical certificate within five working days after the examination date. In cases of doubt, an official physician's attestation may be required. The illness of a child who is primarily the sole charge of the candidate or someone who is under the candidate's care is regarded as equivalent to the illness of the candidate. The reason is regarded as accepted if a written rejection is not given within one month after receipt of the application. In the event of acceptance of the reason, the examination shall be deemed not to have been taken, without prejudice to the candidate, and a new appointment shall be arranged. Examination results that already exist are to be credited in this case.

§25
Deception, violations of regulations

If a candidate attempts to influence the results of her/his examination by threat, deception, or use of unauthorized tools, or if she/he disturbs the proper course of the examination, she/he may be excluded from continuing the relevant examination by

the respective examiner or supervisor. The relevant examination may be evaluated as "inadequate" (5.0). In serious cases, the examination committee may, at the request of the examiner, exclude the candidate from participation in further examinations.

§26

**Recognition of study periods, study achievements,
examinations and credits**

- (1) Study periods, study achievements, examinations and credits from a university in the Federal Republic of Germany in the same study course are recognized by the office without an equivalence examination. Para. 2 sent. 3 and para. 4 apply mutatis mutandis.
- (2) Study periods, study achievements, examinations and credits not covered by paragraph 1 will be recognized on request, unless there are significant differences in the acquired competencies. The non-recognition will be justified in writing. The documents required for recognition must be provided by the applicant.
- (3) The equivalence examination pursuant to para. 2 does not require a schematic comparison but an overall assessment and overall evaluation. The equivalence agreements approved by the conference of the ministers of education and the conference of the rectors of higher education of the Federal Republic of Germany, as well as agreements within the scope of university partnerships, must be taken into account when recognizing study periods, study achievements, examinations and credits outside the Federal Republic of Germany.
- (4) In the event of the recognition of study achievements and examinations, the recognition of the relevant study periods will also occur ex officio. The grades shall be taken over to the extent that the number systems are comparable and shall be included in the calculation of the total grade. In the case of incomparable grading systems, the grade "passed" will be recorded. §27 para. 6 sent. 3, 2nd clause, sentence 4 apply mutatis mutandis. Notice of the recognition in the certificate is permitted.
- (5) Study achievements, examinations and credits may no longer be recognized for the examination after application for the respective examination.

§27

**Recognition of knowledge and abilities acquired outside
the university system**

- (1) Knowledge acquired outside the higher education system shall be recognized subject to the provisions of paragraphs 2 to 5 if, according to the content and level, they are equivalent to the part of the study which is to be replaced. Equivalence shall be recognized if the demonstrated educational results or competencies substantially correspond to the part of the study which is to be replaced. §26 para. 3 sent. 1 applies mutatis mutandis.
- (2) Recognition may occur upon application by the student. The student must provide the necessary documents for the recognition. §26 para. 5 applies mutatis mutandis.

- (3) The student has to demonstrate the acquisition of the knowledge and skills which she/he desires to have recognized and show that they meet the requirements of paragraph 1. If in doubt, a placement examination can take place.
- (4) If a number of students request the recognition of knowledge and skills acquired in the same way, a generalized recognition procedure may be carried out. In doing so, it is universally determined whether the knowledge and skills to be recognized meet the requirements of paragraph 1. This determination can also be carried out for several years; it therefore has to be checked at regular intervals. The student must only prove that she/he has acquired this knowledge and skills.
- (5) Knowledge and skills acquired outside the university can replace a maximum of half of the study course. The "master's project" does not recognize knowledge and skills acquired outside the university system.
- (6) If a complete module is recognized, a grade can be recognized if the knowledge and skills to be recognized have been graded in an examination and the grading system is comparable and equivalent. If no grade is recognized, the grade for the module that has been evaluated is shown with the grade "passed." When the individual examinations of a module are recognized, the grade "passed" is recorded for this module; only the examinations that have been taken are taken into account for the determination of the module grades. The taken examinations have to be weighted in this case in such a way that this corresponds to the ratio of the weightings determined for the examinations in the study plan (appendix) to the sum of the weightings of all taken examinations. The recognition **is shown** in the diploma supplement; a note in the diploma is permissible.

§28

Certificate and master's degree diploma

- (1) The candidate will receive a certificate immediately, if possible within four weeks, after the master's examination is passed. The module grades, the topic of the master's project and its grade and the overall grade must be included in the certificate for the master's examination. In addition to verbal presentation of the overall grade, the average is indicated with the first decimal place after the decimal point, as well as the ECTS degree. At the request of the student, in an appendix to the certificate, examinations in addition to the prescribed modules will be included (supplemental modules according to §14). At the request of the candidate, the grades for the respective examination year (performance score, ranking) must be specified in a supplement to the certificate.
- (2) The certificate bears the date of the day on which the final examination was completed. It is signed by the dean of the faculty and the chairperson of the examination committee and marked with the HSMW seal.
- (3) Simultaneously with the certificate for the master's examination, the candidate will receive the master's diploma with the date of the certificate. The award of the master's degree is certified here. The diploma is signed by the dean of the faculty and the chairperson of the examination committee and marked with the HSMW seal.

- (4) The certificate and the master's diploma shall be accompanied by an English-language translation. This is not signed but carries a seal. The signature line is supplemented with the word "signed" before the name, and the header line is supplemented with the word "Translation".
- (5) HSMW provides a diploma supplement according to the "European Diploma Supplement Model" of the European Union, the Council of Europe and UNESCO. As a representation of the national education system, the text agreed between conference of the ministers of education and the conference of the rectors of higher education should be used in the respective version.

§29

Determination of the invalidity of the master's examination after certificate is issued

- (1) If the candidate has practiced deception in the course of an examination and this fact is only known after the certificate has been issued, the grade of the examination may be corrected in accordance with § 25. If necessary, the module examination can be declared as "inadequate" (5.0) and the master's examination as "failed". The same applies to the master's thesis.
- (2) If the prerequisites for the acceptance of a module examination were not met without the candidate having practiced deception, and if this fact is known only after the certificate has been issued, this defect will be remedied by the passing of the module examination. If the candidate deliberately deceived in taking the examination, the module examination can be declared as "inadequate" (5.0) and the master's examination as "failed".
- (3) The candidate must be given the opportunity to make a statement before making a decision.
- (4) The inaccurate certificate and the diploma supplement must be collected and replaced by a valid certificate or a statement of the completed work. The master's diploma is also to be included if the master's examination was declared "failed" due to a deception. A decision pursuant to paragraphs 1 and 2 shall be excluded after a period of five years from the date of the certificate.

§30

Access to the examination files

Within one year after the completion of the examination procedure, the candidate shall upon request to the examination committee, within a reasonable period of time, have access to her/his written examination papers, the relevant opinions, and the examination protocol. The application for access to the documents for a single examination can be submitted to the respective examiner.

§31

Appeal procedure

- (1) Onerous administrative acts, which are undertaken in accordance with these regulations, shall be justified in writing and accompanied by a statement of legal remedies. An appeal may be lodged against the decision in writing to the examination committee or by transcript within one month after notification.

- (2) The examination committee shall decide on the appeal as an examining authority. Insofar as the appeal concerns a decision of the examination committee, the university examination committee shall make a decision if the examination committee does not remedy the situation.
- (3) If the appeal is directed against an evaluation decision by one or more examiners, the examination committee shall forward the appeal to the examiner for review. If the examiner changes her/his decision according to the application, the examination committee shall remedy the situation. Otherwise, the examination committee shall issue a notice of appeal.
- (4) The appeal decision shall be finalized within three months. Insofar as the appeal situation is not remedied, the decision must be justified and accompanied by a statement of the legal remedies.

6. Section: Deviating regulations for the master's project

§32

Issue, processing period and submission of the master's thesis

- (1) The study course is completed with the master's project. It consists of the master's thesis and a colloquium. The master's thesis is a written examination. It is intended to show that the candidate is able to deal with a problem of the field of study independently by scientific methods within a given time limit.
- (2) The master's thesis can also be given in the form of group work if the contribution of the individual candidate to be assessed can be clearly distinguished and individually assessed by specifying sections, page numbers or other objective criteria which allow a clear delineation referred to in paragraph 1.
- (3) The master's thesis can be supervised by a professor or another person who is authorized to accept examinations according to the Saxony Higher Education Act as long as this person is active at HSMW in an area relevant to the Applied Mathematics for Network and Data Sciences study course. If the master's thesis is to be supervised by a person outside the HSMW, the chairperson of the examination committee must approve. The student may suggest the supervisor for her/his master's thesis. The proposal does not constitute an entitlement.
- (4) The topic of the master's thesis is issued by the examination committee. The topic and the date of issue must be documented. The candidate may state topics of interest. At the request of the candidate, the examination committee will issue the topic of the master's thesis in a timely manner. The topic will be issued no later than four weeks after completion of the module examinations. The topic can only be exchanged once and only within six weeks of issue; in a repetition of the master's thesis, however, it may be exchanged only if it has not already been exchanged in a previous attempt. The faculty will ensure that each student can be issued a topic for the master's thesis.

- (5) The processing period for the master's thesis is five months. For experimental and empirical topics, or if the master's thesis is being worked on in a facility outside the university, the processing period can be prolonged accordingly, but can be no longer than eight months. The topic, task and scope of the work must be limited by the supervisor in such a way that the processing period can be met. Consultations, discussions and research in preparation for the determination of the topic of the master's thesis do not count toward the processing period.
- (6) If the completion of the master's thesis is not possible during the processing period for unforeseeable reasons which are not the responsibility of the candidate, an extension of up to two months may be granted on the basis of a timely written application by the candidate.
- (7) The master's thesis must be submitted to the Faculty of Applied Computer Science and Biosciences in two printed and bound copies as well as in digital text form on a physical data medium; the date of submission must be documented. When submitting the master's thesis, the candidate has to state in writing that she/he has produced her/his own marked part of the work independently, in the event of group work, has used no other sources than the sources stated, and has not yet submitted the work for other purposes.

§33

Evaluation and repetition of the master's thesis

- (1) The master's thesis is independently evaluated by two examiners, at least one of whom is a professor at HSMW. This should include the supervisor of the master's thesis. The evaluation of the master's thesis only takes place when all other module examinations of the master's examination have been successfully completed. The evaluation of the master's thesis is to be completed before the colloquium, usually within four weeks after the submission of the thesis. The master's thesis is given the grade "inadequate" (5.0) if it is not delivered by the deadline.
- (2) The grade of the master's thesis is derived from the average of the two evaluations. If the work is passed and the evaluations of the examiners differ by more than 2.0 grade levels, the average is decisive if both examiners agree. If they do not agree, the examination committee will draw up another opinion; the evaluation of the thesis is formed from the average of the three expert opinions. §20 para. 2 sent. 2 applies mutatis mutandis.
- (3) If one examiner has evaluated the master's thesis at least as "adequate" (4.0) or better and the other as "inadequate" (5.0), the examination committee will obtain another expert opinion. This third opinion will decide on whether the thesis is passed or failed. If the thesis has passed, the evaluation of the work is formed from the average of the evaluations that graded the thesis as passing. §20 para. 2 sent. 2 applies mutatis mutandis.
- (4) The grade of the master's project is the average of the grades for the master's thesis and for the colloquium, weighted according to the study plan (appendix). §20 para. 2 sent. 2 applies mutatis mutandis.

- (5) The student is obliged to submit a printed and an identical digital copy (required copies) of the master's thesis to the university library after completion of the evaluation of the master's project. The required copies will be included in the university library's collection. The student transfers to the university library the right of dissemination (§17 UrhG) and the right to make the work publicly available (§19a UrhG). Restrictions on use rights must be disclosed to the university library and must be recorded in the acquisition document.
- (6) Admission to the second repeat examination of the master's project is only possible upon request and only within two weeks after the announcement of the examination result of the first repeat examination of the master's project.

§34

Colloquium

- (1) The student is admitted to the colloquium if each of the examiners has rated the master's thesis as at least "adequate" (4.0). In the 45-minute colloquium, the student must demonstrate in the discussion that she/he is able to discuss questions related to the master's thesis independently on a scientific basis. The colloquium is conducted by an examination board as a single or group examination. The examination board consists of the supervisor of the master's thesis as an examiner and a further examiner. Additional examiners may be consulted. The examination board evaluates the colloquium with a grade.
- (2) § 10 para. 5 applies mutatis mutandis for the colloquium. The public may be excluded for important reasons.

7. Section: Final provisions

§35

Transitional provisions

These regulations apply to students who have enrolled in the Applied Mathematics and Data Sciences master's study course at the HSMW on or after 1 March 2017. For students who have started their studies before this date, the examination regulations for the Applied Mathematics in Digital Media master's study course of 5 November 2013 apply, as last amended by the regulations of 19 April 2016, and the study regulations for the Applied Mathematics in Digital Media master's study course of 5 November 2013, as last amended by the regulations of 19. April 2016, with the proviso that the examination prerequisites and module examinations described are to be fulfilled in the following modules insofar as the module examination has not yet been passed in these modules:

Module	Examination prerequisite	Module examination
0902 Network Algorithms		Ms/90
0903 Foundations of Modern Cryptography	ÜTe	Ms/90 alt. Mm/30
0904 Stochastic Models	ÜTe	Ms/90
0907 Selected Topics in Computational	ÜTe	Mm/30

Mathematics		alt. Ms/90
0910 Signals and Systems II		Ms/120
0913 Selected Topics in Computational Statistics		Mm/30 alt. Ms/90
0919 Reliability of Communication Networks		Ms/120
0920 Advanced Topics in Modern Cryptography		Ms/90 alt. Mm/30 alt. Vo/75
0921 Simulation and Visualization	ÜTe	Ms/90
0925 Wavelets in Image and Audio Compression		Mm/40

§36

Entry into force and abrogation

These study and examination regulations enter into force with effect from 1 March 2017. They are published in the internet portal www.hs-mittweida.de/ordnungen. At the same time, the examination regulations for the Applied Mathematics in Digital Media master's study course of 5 November 2013, as last amended by the regulations of 19 April 2016, and the study regulations for the Applied Mathematics in Digital Media master's study course from 5 November 2013, last amended by the regulations of 19 April 2016, cease to apply.

Issued on the basis of the faculty council decision of 29 March 2017, approval by the rectorate of 16 May 2017, and the issuing decision of the Faculty of Applied Computer Science and Biosciences of 7 June 2017.

Mittweida, 10 August 2017

The University
The Rector



Prof. Dr. phil. Ludwig Hilmer

