# Examination regulations for the consecutive Master's study programme Advanced Computational and Civil Engineering Structural Studies – ACCESS

# of #date of issue#

Pursuant to Article 34 of the Law on Institutions of Higher Education in the Free State of Saxony (Sächsisches Hochschulgesetz - SächsHG) of 10<sup>th</sup> December 2008 (Saxon law gazette p. 900), amended by paragraph 10 of the law of 26<sup>th</sup> June 2009 (Saxon law gazette pp. 375, 377), the Technische Universität Dresden enacts the examination regulations below as statutes.

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The legally binding text is the original German version.

Please note: This is an English translation from the German original. The translators shall not be liable for unintended errors and omissions.

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## I. General provisions

## § 1 Standard period of study

The standard period of study of the "Advanced Computational and Civil Engineering Structural Studies" Master's programme includes module attendance, self-study, and the Master's examination.

### ξ2 Structure of examinations

The Master's examination consists of the module examinations and the Master's Thesis including the colloquium. A module examination completes a module and normally consists of an examination performance. Module examinations are taken continuously after each term.

#### § 3 **Time limits**

(1) The Master's examination shall be taken within the standard period of study. If the Master's examination has not been taken within four semesters after the end of the standard period of study, it is deemed as failed once. A failed Master's examination can be repeated once within one year. After expiration of this period, it is deemed as failed once again. A second repeat examination is only possible at the earliest possible examination date, and then the Master's examination is deemed as definitively failed.

(2) Module examinations shall be taken by the end of the predetermined semester according to the curriculum and the examination regulations.

(3) By study regulations and the given training structure, the Technische Universität Dresden provides students with the opportunity to complete the examination prerequisites and the examination performances within the limited study period, as defined in the examination regulations. The students will be notified well in advance as to the type and number of prerequisites and examinations to be taken, as well as the relevant deadlines for each. Likewise, they will be informed about the distribution and submission dates for the Master's Thesis and the date of the colloquium. Students shall be informed of the possibilities for retaking examinations.

(4) Times of maternity and parental leave are neither subject to time limits nor are they taken into account with regard to current time limits.

#### § 4 General admission requirements and admission procedure

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

- 1. Has enrolled for the "Advanced Computational Civil Engineering Structural Studies" Master's programme at the Technische Universität Dresden, and
- 2. Has fulfilled the professional gualification prerequisites (article 26), and
- 3. Has presented a written declaration according to paragraph (4) no. 3.

(2) Students must register for the examinations. The form and deadline for registration will be defined by the Examination Board and published according to faculty custom at the beginning of the semester.

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(3) Admission is granted

1. To a module examination on the basis of the first registration for an examination of this module examination,

2. To the Master's Thesis on the basis of the application for issuing the topic, or in the case of article 21, paragraph 3, sentence 5, with the issue of the topic, and

3. To the colloquium on the basis of an evaluation of the Master's Thesis with grade "sufficient" (4.0) or better.

(4) Admission is refused if

- 1. The requirements defined in (1) are not fulfilled or the procedural regulations pursuant to (2) are not fulfilled, or
- 2. The application is incomplete, or
- 3. The student has already definitively failed an examination necessary for the completion of the "Advanced Computational and Civil Engineering Structural Studies" Master's programme.

(5) Admission is decided by the Examination Board. The announcement can be made publicly. Article 18 (4) remains unaffected.

## §5 Types of assessments

(1) Assessments are to be made by

- 1. Written examinations (article 6)
- 2. Assignments (article 7)
- 3. Project works (article 8)
- 4. Oral examinations (article 9)

5. Seminar presentations (article 10), and/or

6. Other examinations (article 11).

Written examinations based on a multiple choice procedure are excluded.

(2) English is the only language for any part of the Master's programme.

(3) If a student furnishes prima facie evidence that s/he is unable to sit for all or part of an examination due to prolonged or permanent physical disability, the Chairman of the Examination Board permits examinations to be taken within a prolonged period or in an equivalent form. For this, submittal of a doctor's note may be required and in instances of doubt, a certificate issued by a Public Health Officer (Amtsarzt). The same applies to examination prerequisites.

(4) If a student furnishes prima facie evidence that s/he is unable to sit for a scheduled examination due to care of their own children (up to age 14) the Chairman of the Examination Board permits examinations to be taken in equivalent form at a student's request. In consultation with a competent examiner the Chairman of the Examination Board, according to his/her best judgement, decides on the manner in which the examination is to be taken. Suitable measures for compensating the disadvantage are, e.g. the permission to take examinations within a prolonged time period, with interruptions in between, by using other media, other examination rooms within the university, or at another date. The same applies to examination prerequisites.

#### § 6 Written examinations

(1) A student shall prove in written examinations that s/he can solve problems and work on a topic within a limited time and with limited auxiliary means and with the current methods of the domain.

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(2) Written examinations, which must be successfully passed in order to continue the study programme, shall generally be evaluated by two examiners, at least in the case of the last repeat examination. The grade is calculated as the average of the individual results according to article 12 (1). The evaluation procedure shall be terminated within four weeks.

(3) The duration of a written examination is regulated by the module descriptions. Written examinations shall generally last at least 90 minutes and no more than 180 minutes.

### § 7 Assignments

(1) Students shall prove in assignments that they are competent to solve selected problems with the help of technical literature and other working materials within a limited period of time. Students shall prove whether they are able to apply fundamental scientific working techniques. If included in the module description by assignments, students also have to prove their competence in coherently presenting and discussing the results.

(2) Article 6 (2) applies mutatis mutandis for assignments.

(3) The duration of assignments is limited to a maximum of 60 hours. The exact durations are specified in the module descriptions.

### § 8 **Project work**

(1) Project work generally demonstrates teamwork ability, in particular, the ability to develop, implement and present concepts. Students shall prove that they are competent to define targets and work out interdisciplinary strategies and concepts.

(2) Article 6 (2) applies mutatis mutandis for project work.

(3) The duration of project work is regulated by the module descriptions. Project work lasts 18 weeks at most.

(4) In a project paper submitted by a team the contribution of individual students must be clearly discernible and assessable and fulfil the requirement pursuant to paragraph (1).

#### ξ9 **Oral examinations**

(1) Oral examinations shall prove that students are competent to provide an overview of the subject area being examined, and that they are further able to categorise special problems. Furthermore, students shall prove they have an adequate basic knowledge that demonstrates their progress of studies. Oral examinations can include written parts (e.g. in a preparatory time before an examination) if the oral character of the examination is kept.

(2) As a rule, oral examinations are taken in front of at least two examiners (a Board of Examination), or in front of one examiner in the presence of an associate examiner (§ 19). The module description determines if the examination is a collective examination with up to three candidates participating or an individual examination.

(3) Oral examination procedures shall last between 15 and 45 minutes. The module description determines the exact duration.

(4) The essential subjects and results of the oral examinations shall be written in a record. A student shall be informed of the result following the oral examination.

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(5) Students who will sit for the same examination at a later examination date can be admitted to listen, space permitting, unless the student being examined objects. Admission does not include the deliberations about and notification of the examination results.

### § 10 **Seminar presentations**

(1) Oral presentations shall prove a student's ability to work on and present special issues. Scope and content are determined by the task.

(2) As a rule, presentations are assessed by the lecturer who is responsible for the module where the presentation is issued and given. Article 6 (2) sentences 1 and 2 apply mutatis mutandis.

(3) Article 9 (4) applies mutatis mutandis.

§ 11 Other assessments

(1) A student should prove the academic achievements set out in the examination regulations by other assessments which are evaluated by the same standards and specifically named in the module descriptions including the requirements and, if necessary, the duration. Other assessment performances are final reports on mentoring sessions during the course of studies.

(2) Final reports on mentoring sessions during the study programme are formalised reports on study and methodological competences acquired in the process of mentoring.

(3) Article 6 (2) applies mutatis mutandis to other written assessments.

#### § 12 Evaluation of examinations, calculation and weighting of grades, and announcement of examination results

(1) The respective examiners determine the grades for the individual examinations. The following grades shall be used for the evaluation of examinations:

1 = very good:excellent performance;

2 = qood: a performance well above average requirements;

a performance which fulfils the average requirements; 3 = satisfactory:

4 = sufficient:a performance which fulfils the requirements despite some deficiencies;

5 = insufficient:a performance which does not fulfil the requirements due to significant deficiencies.

To differentiate the evaluation of the examinations, intermediate values can be formed by lowering or raising the individual grades by 0.3, excluding the grades 0.7, 4.3, 4.7 und 5.3. An examination can be evaluated with "pass" or "fail" (non-graded module examination) if it is especially stipulated in the module description. Non-graded examination performances evaluated with "pass" are not included in the calculation of the overall grade. Non-graded examination performances evaluated with "fail" are included in the calculation of the overall grade with grade 5 (insufficient).

(2) The module grade is the arithmetic mean of the individual examinations of the module examination, weighted according to the ECTS credits granted and truncated to one decimal place. The module grade is:

For an average of 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:	sufficient
For an average below 4.1:	insufficient.

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(3) Module examinations consisting of a non-graded examination performance are evaluated as "pass" or "fail" (non-graded module examination). Non-graded module examinations are not included in the calculation of the overall grade.

(4) An overall grade for the Master's examination is calculated. The overall grade of the Master's examination is calculated by the weighted mean of the number of credit points for the final grade of the Master's Thesis and the number of credit points for the module grades according to article 27 (1). The final grade of the Master's Thesis is calculated by a weighting factor of 4 for the grade of the Master's Thesis and a weighting factor of 1 for the grade of the colloquium. Paragraph (2), sentences 1 and 2 apply mutatis mutandis for the calculation of overall and final grades.

(5) The overall grade of the Master's examination is additionally recorded into ECTS grades.

(6) The modalities of announcing the examination results are to be communicated to students through publications that are customary for the faculty.

#### § 13 Default, withdrawal, deceit, breach of regulation

(1) If a student misses an examination date that is binding for him/her without serious cause or if s/he withdraws from the examination after the beginning of the examination without cause, the examination is deemed to be evaluated as "insufficient" (5.0), respectively failed. This clause is also applicable if an examination performance is not taken within the prescribed time limit.

(2) The good reason presented for the withdrawal or the default must be immediately made available to the Examination Board in written form and prima facie evidence must be furnished. For this, submittal of a doctor's note may be required and in instances of doubt, a certificate issued by a Public Health Officer (Amtsarzt). As far as the observation of deadlines for first-time exam registrations, repeat exams, reasons for the absence from examinations, and the observation of processing periods for examination papers are concerned, the illness of the student and the illness of a student's child that is mostly cared for by the student are to be treated equally. If the reason is accepted, a new date is fixed. The existing results of the examination shall be recognised in this case. The Examination Board decides on the approval of the good reason presented for the withdrawal or the default.

(3) If a student attempts to influence examination results by deceit or the use of means that are not permitted, the respective examination is deemed to be "insufficient" (5.0). Accordingly, non-graded module examinations are deemed to be failed. A student who disturbs the due course of examinations can be excluded from the examination by the respective examiner or supervisor; in this case the examination is deemed to be "insufficient" (5.0), respectively failed. In severe cases the Examination Board can exclude such a student from taking further examinations.

(4) (1) to (3) apply mutatis mutandis to examination prerequisites, the Master's Thesis and the colloquium.

## § 14 **Passing and failing**

(1) A module examination is passed if the module examination has been evaluated as "sufficient" (4.0) or better and/or the non-graded module examination has been evaluated as "pass". If the module examination is passed, ECTS credits, assigned for the module in the module description, are granted.

(2) The Master's examination is passed if the module examinations, the Master's Thesis,

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and the colloquium have been passed. The Master's Thesis and colloquium are passed if they have been evaluated as "sufficient" (4.0) or better.

(3) A module examination is deemed as failed if it has been evaluated as below "sufficient" (4.0).

(4) A module examination is deemed as definitively failed if it has been evaluated as below "sufficient" (4.0) and cannot be repeated again. Master's Thesis and colloquium are deemed as definitively failed if they have been evaluated as below "sufficient" (4.0) and cannot be repeated again.

(5) A Master's examination is deemed as failed and/or definitively failed if either a module examination, the Master's Thesis or the colloquium are deemed as failed and/or definitively failed. Article 3 (1) remains unaffected by this.

(6) If a student has failed one module examination or the Master's Thesis has been evaluated as below "sufficient" (4.0), such a student is informed whether, and if applicable, in which scope, and within which period, the module examination or the Master's Thesis can be repeated.

(7) If a student has failed the Master's examination, s/he can apply for an attestation that contains the examinations taken and the evaluation as well as, if necessary, the missing examinations which clearly state that the Master's examination has been failed. The student's application must include the relevant documents as well as the ex-matriculation attestation.

### § 15 **Trial examination**

(1) In compliance with the requirements for admission, module examinations may be taken before the time limits defined in the curriculum (appendix 2 of the study regulations) - (trial examination).

(2) By application, module examinations taken before the time limits defined in these regulations, that have been evaluated as "sufficient" (4.0) respectively passed or better, can be repeated once at the following regular examination date to improve the grade. In this case, the better grade is taken into account. Procedure and time limits for the application are defined by the Examination Board and announced through publications that are customary for the faculty. After expiration of the following regular examination date or application deadline, it is no longer possible to improve the grade. By application examinations that have been evaluated as "sufficient" (4.0) or better will be taken into account when the module examination is repeated to improve the grade.

(3) A module examination taken before the time limits defined in these regulations, which has been failed, is deemed as not taken. Examinations that have been evaluated as "sufficient" (4.0) respectively passed or better will be recognised in a new examination procedure. When making use of the opportunity to improve the grade pursuant to paragraph (2) the better grade is taken into account.

(3) Besides article 3 paragraph (4), periods during which the studies have been interrupted due to a long-term illness of the student, or an illness of his/her child that is mostly cared for by him/her, or due to study periods abroad, are not taken into account in case trial examinations are being applied.

### § 16 **Repetition of module examinations**

(1) Failed module examinations can be retaken within one year after completion of the first examination attempt. The time limit shall run from the time of the announcement that the

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module examination was failed for the first time. When this time limit has expired, they are deemed as definitively failed.

(2) A second repeat examination is only possible at the earliest possible examination date. Thereafter the module examination is deemed as definitively failed. A further repeat examination is not permitted.

(3) Repetition of a failed module examination consisting of several examinations applies only to examinations evaluated worse than "sufficient" (4.0) respectively not passed.

(4) Repetition of a passed examination is only permitted in the case pursuant to article 15 (2) and includes all examination performances.

(5) Failed attempts of the module examination in the same or another study programme are taken into account.

### § 17

### Recognition of study periods, study and examination performances, and nonuniversity qualifications

(1) Study periods and study and examination performances are recognised without assessment of their equivalence if they have been taken in the same study programme in the Federal Republic of Germany.

(2) By application, study periods and study and examination performances completed outside of a programme that does not come under the scope of paragraph 1, are recognised if equivalence is given. Equivalence is given if study periods and study and examination performances are basically equivalent to components of the "Advanced Computational and Civil Engineering Structural Studies" Master's study programme at the Technische Universität Dresden in content, scope and requirements. Equivalence is not determined by a schematic comparison but by an overall consideration and overall assessment. For the recognition of study periods and study and examination performances completed outside the Federal Republic of Germany, the Lisbon Convention of 11<sup>th</sup> November 1997 and the equivalence agreements approved by the Standing Conference of Ministers of Education and Cultural Affairs and the German Rector's Conference as well as university co-operation agreements shall be observed. A maximum 50 per cent of the studies may be compensated by nonuniversity qualifications.

(3) If study and examination performances or gualifications completed outside of a study programme are recognised pursuant to (2), the recognition of respective study periods occurs ex officio. The grades - if the grading system is comparable - shall be taken over and included in the calculation of the overall grade. If grading systems are not comparable, the remark "passed" is added. They are not included in further calculations of grades. Identification of the recognition in the certificate of Master's examination is permitted.

(4) The recognition is made by the Examination Board. The student must furnish the documents required. The recognition of study periods and study and examination performances according to (1) occurs ex officio.

#### § 18 **Examination Board**

(1) An Examination Board shall be established for the organisation of the examinations in the "Advanced Computational and Civil Engineering Structural Studies" Master's study programme as well as for the tasks assigned by these examination regulations. The Examination Board is composed of four professors, an academic lecturer and two students. The term of the members of the Examination Board is generally three years; that of the student members is generally one year.

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(2) The chairman, his/her deputy as well as all further members and their deputies are appointed by the Faculty Board of the Faculty of Civil Engineering; the student members are appointed on the recommendation of the Faculty Students' Council. The chairman generally manages the day-to-day business of the Examination Board.

(3) The Examination Board ensures that the provisions of the examination regulations are adhered to. It regularly reports to the Faculty of Civil Engineering about the development of examination and study periods and also about the distribution of module and overall grades. The report shall be disclosed in a suitable way by the Technische Universität Dresden. The Examination Board makes suggestions for the reform of the examination regulations, the study regulations, the module descriptions, and the curriculum.

(4) Onerous decisions shall be substantiated and immediately notified to the student, and the student shall be instructed about the legal remedies available. As the examination authority, the Examination Board rules on contradictions in an adequate period and issues notices of appeal.

(5) The members of the Examination Board have the right to attend examinations and the colloquium.

(6) The members of the Examination Board and their deputies are subject to official secrecy. If they do not work in the public sector, they shall be obliged to official secrecy by the chairman.

(7) On the basis of the decisions of the Examination Board, the Examinations Office organises the examinations and administers the examination documents.

#### § 19 Examiners and associate examiners

(1) Professors and other people who are entitled to conduct examinations, teach autonomously and in their own responsibility at an institution of higher education in the domain examined, or are referred to in the Master's Thesis and the colloquium may be appointed by the Examination Board as examiners; this is provided by state law, unless good reasons require deviation from this rule. Only a person who has passed the respective Master's examination or an equivalent examination may be appointed as an associate examiner.

(2) The student may propose the supervisor for his/her Master's Thesis as well as the examiners for oral examinations and the colloquium. The proposal constitutes no legal claim.

(2) The names of the examiners shall be notified to the student in due time.

(4) Article 18 (6) applies in the same way to examiners and associate examiners.

# § 20 Purpose of the Master's examination

The passing of the Master's examination is proof of the professional qualification obtained in the Master's study programme. The Master's examination shall prove that the graduate has the in-depth and profound knowledge and abilities which meet the disciplinary scientific requirements and which are required in the aspired professional field.

#### § 21 Purpose, issue, submittal, evaluation and repetition of the Master's Thesis and colloquium

(1) The Master's Thesis shall demonstrate that the student is able to deal with problems

from the field of the study programme independently and using scientific methods within a given time frame.

(2) The Master's Thesis can be supervised by a professor or other people who are entitled to conduct examinations and teach autonomously and in their own responsibility pursuant to the Law on Institutions of Higher Education in the Free State of Saxony (Sächsisches Hochschulgesetz) provided they are employed in the "Advanced Computational and Civil Engineering Structural Studies" Master's study programme at the Technische Universität Dresden. If the Master's Thesis is to be supervised by a qualified person who is employed externally, the chairman of the Examination Board must give his consent.

(3) The Examination Board arranges for the issuance of the Master's Thesis topic. The topic and the time and date of issue must be recorded. The student may propose topics. On the student's application, the Examination Board arranges for the timely issuance of the Master's Thesis topic. The topic will be issued not later than the beginning of the semester following the completion of the last module examination.

(4) The topic can be returned once and only within two months after the date of issue. The return of a topic in case of repetition of the Master's Thesis is only permitted if the student has not made use of this possibility when writing his/her first thesis.

(5) The Master's Thesis can also be performed in teams. In this case, students shall be graded on their individual contribution to the Master's Thesis on the basis of paragraphs, numbers of pages or other objective criteria, which allows for the clear identification of their contribution and which is distinguishable and assessable and which fulfils the requirements according to (1).

(6) The Master's Thesis must be submitted in English in two typewritten and bound copies to the Examinations Office of the Faculty of Civil Engineering within the time limit. The time of submission must be recorded. On submission, the student must confirm in writing that s/he has written the Thesis – in instances of teamwork his/her individual marked part – independently and has used no other than the indicated sources and aids.

(7) The Master's Thesis is generally evaluated by two examiners according to article 12 (1) sentences 1 to 3. The evaluation procedure shall not exceed four weeks.

(8) The final grade of the Master's Thesis results from the average of the two grades given by the two examiners. If the evaluations made by the two examiners differ by more than 2 grades, the average will be decisive, given the consent of the two examiners. If this is not the case, the Examination Board appoints a third examiner. The Master's Thesis grade is calculated as the mean of the three individual grades. Article 12, (2) sentences 2 and 3 apply mutatis mutandis.

(9) If one of the examiners evaluated the Thesis with grade "sufficient" (4.0) or better and the other one with "insufficient" (5.0), the Examination Board requests a third evaluation. This will decide whether the Master's Thesis is passed or failed. If the Thesis is passed, the grade of the Master's Thesis is calculated from the average of the individual grades of the accepting votes, otherwise of the rejecting votes. Article 12 (2) sentences 2 and 3 apply mutatis mutandis.

(10) The Master's Thesis can be repeated once within a year if it is evaluated worse than grade "sufficient" (4.0). A further repetition is not permitted.

(11) The student must explain the results of their Master's Thesis in a public colloquium in front of the supervisor, acting as examiner, and an associate examiner. Further examiners can participate. Paragraph (10) as well as article 9 (4) and article 12 (1) sentences 1 to 3 apply mutatis mutandis. The colloquium is to be scheduled within four weeks after submission of the Master's Thesis.

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#### § 22 Certificate of Master's examination and Master's Certificate

(1) The student is awarded a certificate of Master's examination immediately, if possible within four weeks. The certificate on the passed Master's examination shall list the module grades according to article 27 (1), topic, supervisor and grade of the Master's Thesis as well as the overall grade. At the student's request further module results, the number of terms required until the Master's examination was taken, and - if the legal requirements are given - the examination grades received by all students of the respective term (transcript of records, ranking) can be added to the certificate of Master's examination on a supplementary sheet. A supplement to this certificate lists all examination performances.

(2) In addition to the certificate of Master's examination, the student is awarded the Master's Certificate, which certifies the award of the academic degree of "Master of Science" (M.Sc.). The Master's Certificate is signed by the Rector and the chairman of the Examination Board and it bears the seal of the Technische Universität Dresden and the date of the certificate of Master's examination. English translations of the certificates and the certificate of Master's examination are added.

(3) The certificate of Master's examination indicates the date on which the last part of an examination was taken according to article 14 (2). It is signed by the Dean and the chairman of the Examination Board and bears the seal of the faculty of the Technische Universität Dresden.

(4) The Technische Universität Dresden issues a Diploma Supplement (DS) in compliance with the "Diploma Supplement Model" of the European Union/European Council/UNESCO. As a presentation of the National Educational System (DS, section 8), the text agreed upon between the Standing Conference of the Ministers of Education and Cultural Affairs and the German Rectors' Conference shall be used in the applicable version.

### § 23 Invalidity of the Master's examination

(1) If a student cheated in an examination and this fact is disclosed only after the certificate of Master's examination has been awarded, the examination grade can be rectified pursuant to article 13 (3). If applicable, the module examination and the Master's examination can be declared as failed by the Examination Board. The same applies to non-graded module examinations, the Master's Thesis and the colloquium.

(2) If the requirements for sitting a module examination were not fulfilled without a student's intention to cheat, and this fact is disclosed only after the award of the certificate of Master's examination, this cheating is remedied by the successful module examination. If a student has deliberately and wrongfully effected that s/he could take the module examination, the module examination can be declared as "insufficient" (grade 5.0) and the Master's examination as "failed" by the Examination Board. The same applies to non-graded module examinations, the Master's Thesis and the colloquium.

(3) Before a decision is taken, a student shall be given the opportunity to comment on the incident.

(4) The wrongly issued certificate of Master's examination shall be withdrawn by the chairman of the Examination Board and, if applicable, a new one shall be awarded. Together with the wrongly issued certificate of Master's examination, the Master's Certificate, the Diploma Supplement, and the English translations of the Master's Certificates and the certificate of Master's examination shall be withdrawn if the Master's examination is declared as a "fail" due to deceit. A decision pursuant to (1) and (2) sentence 2 or 3 cannot be made after five years from the date the transcript was issued.

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## § 24 Inspection of examination files

Inspection of the written examinations, their evaluations and the examination records shall be granted to a student within a reasonable period of time on their application within one year after completion of the examination procedure.

## II. Specific provisions

### § 25 Duration of study programme, structure and number of hours scheduled

(1) The standard period of study is four semesters (two years) pursuant to article 1.

(2) The Master's programme follows a modular format and is completed by the Master's Thesis and the colloquium.

(3) A total of 120 ECTS credit points is awarded in modules, the Master's Thesis and the colloquium if the Master's examination is passed.

#### § 26 Qualification prerequisites for the Master's examination

If applicable, module examinations can only be taken if the required examination prerequisites are fulfilled. The amount, type, object, and scope are to be described in the module descriptions. The number of repetitions allowed may be limited. Before the colloquium the Master's Thesis must be evaluated as "sufficient" (4.0) or better.

## § 27 Object, type and scope of the Master's examination

(1) The Master's examination consists of the examinations of obligatory modules and selected elective modules as well as the Master's Thesis including the colloquium.

(2) Obligatory modules are

- 1. BIWO-01 (Building Materials)
- 2. BIWO-02 (Continuum Mechanics, Tensor Calculus)
- З. BIWO-03 (Energy Methods, FEM)
- 4. BIWO-04 (Software Engineering)
- BIWO-05 (Mentoring Study Competence) 5.
- BIWO-06 (Mentoring Methodological Competence) 6.
- BIWO-07 (Application of Computational Methods in Engineering) 7.
- BIWO-08 (Project Work). 8.

(3) Elective modules are

- 1. BIWE-01 (Design of Concrete Structures)
- BIWE-02 (Design of Masonry Structures) 2.
- 3. BIWE-03 (Timber and Lightweight Structures)
- BIWE-04 (Advanced Geotechnical Analysis) 4.
- 5. BIWE-05 (Structural Use of Glass)
- 6. BIWE-06 (Resilience during Extreme Events)
- BIWE-07 (Computational Building Physics) 7.
- BIWE-08 (Multiscale Mechanics) 8.
- BIWE-09 (Computational Dynamics, Safety Concepts) 9.
- 10. BIWE-10 (Modelling and Simulation in Pavement Engineering).

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Seven of the above electives have to be selected.

(4) Type and scope of the examinations assigned to each module are defined in the module descriptions. The examinations cover the content and the qualification aim of the module unless otherwise described in the module descriptions.

(5) A student may take further module examinations (additional modules) other than those described according to (1). Those additional module examinations can be chosen from the whole offer of modules of the Technische Universität Dresden or a cooperating university. They will not be considered for a student's workload and the calculation of the final grade.

#### § 28 Time period for completion of the Master's Thesis and colloquium

(1) The completion period for the Master's Thesis is 20 weeks; 27 credits are to be acquired. Topic, problem and scope of the Master's Thesis must be defined by the supervisor such that the deadline for its completion can be met. In exceptional cases, the Examination Board can extend the completion period by up to 12 weeks on a well-founded application. The number of ECTS credits remains unaffected by this.

(2) The colloquium lasts 20 minutes. 3 credits can be acquired.

## § 29 Master's degree

The academic degree "Master of Science" (abbreviated as "M.Sc.") is awarded if the Master's examination is successfully completed.

## III. Final provisions

### § 30 Enactment and Publication

These examination regulations come into effect on XX MONTH 20XX and shall be published in the Official Publications (Amtliche Bekanntmachungen) of the Technische Universität Dresden.

Issued according to the decision of the Faculty Board of the Faculty of Civil Engineering of the Technische Universität Dresden of XX MONTH 20XX and the approval of the Rector's Council of XX MONTH 20XX.

Dresden, XX MONTH 20XX

The Rector of the Technische Universität Dresden

Prof. Dr. Dr.-Ing. Hans Müller-Steinhagen

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