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23 September 1999

Master Examination Regulations for the Integrated International Master and PhD Program in Mathematics at the Chemnitz University of Technology

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**Master Examination Regulations of the Integrated International Master and PhD Program in Mathematics at the Chemnitz University of Technology  
from September 23-rd 1999<sup>1</sup>**

According to §24 par. 1 of the the Law on higher education in the Free State of Saxony (Saxon Law on higher education - Sächsische Hochschulgesetz (SächsHG)) from June 11-th, 1999 (Sächs GVBl. 11/1999, pp. 293), the Senate of the Chemnitz University of Technology enacts the following Examination Regulations:

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Within these Regulations masculine person designations are used for both genders.

**I. General Clauses**

**§1**

**Purpose of the examination**

The Master examination constitutes the professional qualifying conclusion of the Master studies within the International Master and PhD Program in Mathematics. The Master examination ascertains whether the students have acquired the basic knowledge necessary for the transition towards the professional practice, have reviewed the essential connections between the studied subjects and possess the ability to apply the scientific methods and insights.

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<sup>1</sup>This translation is not official, one should consider it just only as orientative, the only official version being the German one available at <http://www.tu-chemnitz.de/mathematik/ordnungen/ab110intmath.pdf>

## §2 Academic Degree

The academic degree “Master of Science” (M.Sc.) will be conferred on the basis of passing the Master examination.

## §3 Standard period of studies

(1) The standard period of studies for the Master studies as the first phase of the Integrated International Master and PhD Program in Mathematics amounts, including the Master final examination, two years and the standard time for the PhD studies as the second phase amounts three years.

(2) The contents of the courses will be described and bounded in the Studies Regulations so that the studies may be concluded within the standard time period. The total volume of classes is of 70 SWS for the Master studies and 28 SWS for the PhD studies.

## §4 Examinations and test periods

(1) The Master examination should be passed during the standard period of studies.

(2) Examination claims expire when the student has not passed the Master examination from several attempts six semesters after the expiration of the standard period of studies, except when the reasons for this do not depend on him.

(3) The registration for the Master examination must be done at least five weeks before the annual announced examinations periods by submitting a written request to the examination board.

(4) All the examinations concerning mathematical subjects will take place within the Faculty of Mathematics, preferably during the examination period in the end of the lectures period. The lecturer will announce in the beginning of the semester the type and manner the subject certificate may be obtained.

(5) The mathematical subjects examinations will be carried on study-accompanying.

(6) The examination IV for the non-mathematical minor subject follows the rules of the corresponding faculty. If necessary the note will be designated according to §18, par. 2 of the separate examination achievements.

(7) Particular examinations as parts of the Master final examination may be passed before the

admission to it (early examinations). The admission to these early examinations must be asked at least ten days before the announced annual exams period from the examination board.

(8) The European Credit Transfer System (ECTS) of the Faculty of Mathematics is valid.

## §5 Examination board

(1) The Faculty of Mathematics will appoint an examination board to organize the exams according to these regulations. The examination board consists of the chairman, the deputy chairman and other five members. The chairman, the deputy chairman and two members must be Professors of the Faculty of Mathematics, a member must belong to the scientific employees, and the other two members must be students from two different courses of studies of the Faculty of Mathematics. The incumbency of the members takes three years, except for the student members for which it lasts one year. Reelection is admitted.

(2) The chairman, the deputy chairman and the other members of the faculty will be designated by the faculty council. The student members will be suggested by the student body organization.

(3) The examination board watches the obeying of the present regulations and looks after the proceeding of the exams according to the rules. The examination board must report regularly to the faculty council, at least once every year, about the development of the examinations and the compliance of the examination periods. It brings suggestions concerning the reform of the examination and studies regulations. The examination board can transfer the execution of its tasks to the chairman, as a rule. This is not valid for the decisions in case of objections and for the report to the faculty council.

(4) The students' representatives in the examination board have only consultative votes. They do not have the right to vote by pedagogical-scientific decisions, in particular during the estimation or acceptance of the studies and examination achievements, as well as by the establishment of the examinations subjects. They have the right to vote for fixing and organizing the examinations.

(5) The examination board has a quorum when the chairman or the deputy chairman and at least one additional Professor and two other voting members are present. The decisions in the

examination board are taken with simple majority. At a parity of votes, the vote of the chairman is decisive. The meetings of the examination board are not public.

(6) The members of the examination board have the right to attend the examinations taking place.

(7) The members of the examination board, their deputy, the examiners and the assessors are subject to civil official secrecy. Provided that they are not in the civil service, they are to be obligated to discretion by the chairman.

(8) An examination office will be constituted within the faculty due to the organizational securing of the examination issues.

## §6

### Examiner and assessor

(1) The examination board appoints the examiner and the assessor. This decision can be transferred to the chairman. As a rule as examiners are called Professors or habilitate scientific researchers, which, as long as no imperative reasons ask for a declination, have had an independent teaching activity within the subject domain the examination consists in. As assessor may be appointed only someone that has taken his Diploma examination in a mathematical course of studies or some assimilable examination at a scientific university. For the non-mathematical exams corresponding regulations are valid.

(2) The examiner and the assessor are independent in their activity as examiners.

(3) The students can propose an examiner or a group of examiners for the defence of the Master thesis and for the oral examinations. The recommendations of the students must be taken into consideration if possible. The proposed examiners are listened to. The propositions do not constitute legal claims.

(4) The chairman of the examination board takes care that the students were informed about the name of the examiner at least two weeks before the respective examination is scheduled.

(5) All the examiners and assessors involved in at least an exam constitute an examination commission.

## §7

### Consideration of study periods, studies and examinations results

(1) Periods of studies, study and examination performances in mathematical course of studies

at an university or some equated German institutions will be counted without other equivalation tests. The recognition of parts of the Master examination may fail in case more than half of the exams or the Master thesis have to be taken into account.

(2) Periods of studies, study and examination performances in some other course of studies may be recognized as far as their equivalence is ascertained. The equivalence is ascertained when the contents, comprehensiveness and requirements of the periods of studies, study and examination performances correspond essentially to the ones of the Master studies at Chemnitz University of Technology. There is no scheme of comparison but a general survey and a total evaluation to be carried out. When periods of studies, study and examination performances are acquired outside Germany, the equivalence agreements given by conference of ministers of cults and the conference of university rectors and the agreements between universities are respected.

(3) The paragraphs 1 and 2 apply adequately for periods of study, courses and examinations taken at authorized distance learning institutions.

(4) As long as the subjects, exams and grades are recognized or equated, they will be taken into consideration for the calculation of the final grade. In case the note systems are not comparable, the passed exams will be accepted with the epithet "passed" (bestanden). A mention of the equivalation is admissible into the certificate.

(5) When the paragraphs 1-3 are applicable there is a legal right to claim the recognition. The recognition of the study periods, taken courses and examination results that were achieved in Germany will be performed by the examination office. The students must submit the necessary documents for the recognition.

(6) The negative decisions of the examination board will be immediately announced in writing to the solicitant with plea instructions for oversight. The opportunity of a legal hearing is given.

## §8

### Absence, cancellation, deceit, contraventions

(1) An exam is evaluated as "not sufficient" (5.0) when the student misses it without a valid explanation or when he retires from the examination after its beginning without valid reasons.

(2) The asserted reasons for retirement or dereliction must be plausible and have to be immediately announced in writing. In case of illness of the examinee, a medical certificate is required to be presented, which must be certified by a public health officer in case of doubt. As far as the adherence of the time limits for the first call for examination, the repetition of the examinations, the reasons for the dereliction of the examinations and the adherence of the operating times are affected, the illness of the examinee is equally treated to the illness of an alone accommodatively child. If the reason is accepted, a new time is scheduled. The already presented examination results are in this case credited.

(3) If the examinee tries to influence the result of his examination through mystification or by using not allowed auxiliary helpful means the examination will be evaluated with “not sufficient” (5.0). An examinee that disturbs the proper procedure of the examination time can be excluded from the continuation of the examination by the examiner or supervisor. In this case the grade he will get is “not sufficient” (5.0). In grave cases the examiner may ask the examination board to expel the student from other examinations, too.

(4) The examinee can demand within two weeks the review of the decisions according to paragraph from the examination board. Negative decisions are immediately announced, in written form, to the examinee, justified and provided with a plea instruction.

## §9

### Free attempts

(1) A major subject examination from the master examination is evaluated with “not sufficient” (5.0), when the examinations I and II before the expiration of two semesters, the examination III before three semesters and the examination IV before four semesters are undertaken (free attempts).

(2) Within the framework of the free attempts the grades of the passed examinations may be ameliorated by repeating the examinations before the expiration of the periods announced in paragraph 1. The best result will be counted.

(3) With regard to the adherence to the periods according to paragraph 1, the following will be not counted:

1. the periods of leave (of absence) according to §16 par. 2 of the Saxon Law on higher education,

2. abroad study periods,

3. other urgent reasons for an interruption of the studies that are plausibly presented by the examinee.

## II. Master Examination

### §10

#### Admission

(1) To the Master examination can be allowed someone who

1. was matriculated in the Integrated International Master and PhD Program at Chemnitz University of Technology during the semester previous to the Master examination,

2. claims the examination before the expiration of the period designated to discard the Master examination and

3. gives at due date a written application to the Master examination to the examination board. The application must be accompanied with proofs of the validity of the admission prerequisites mentioned within the previous points of this paragraphs and within paragraph 2.

(2) The conditions for the acceptance to the Master examination are:

1. proofs of the successful participation to three semesters in length of 2 SWS each, from which two seminars in the specialization area of the Master thesis,

2. proofs with grades, each with 6 SWS in the specialization area.

(3) When the applicant cannot enclose the required certificates from paragraphs 1 and 2 as requested, the examination board may allow another manner of administration of these proofs.

### §11

#### Admission procedures

(1) The examination board or, according to §5 par. 3, its chairman, decide upon the admission.

(2) The admission can be rejected only when

1. the requirements given in §10 par. 1 are not fulfilled or

2. the documents are incomplete or

3. the Master examination or the Diploma examination within some mathematical course of studies or some scientific German university was failed or
4. there are floating examination processes in the same or some related course of studies.

## §12

### Examinations: extent and type

The Master examination consists in

1. the Master thesis (§13, §14) and
2. the examinations (§15 to §17).

## §13

### Master thesis

(1) The ability to independently handle scientific methods on a problem belonging to a special area of Mathematics within a given period of time will be certified through the Master thesis.

(2) The Master thesis can be proposed and supervised by any Professor or examination entitled member of the University involved in teaching or research. The approval of the examination board is needed if the Master thesis is prepared outside the Faculty. The examination board names a second reviewer from outside the Faculty. The students are given the opportunity to suggest a subject for their Master thesis to the supervisor.

(3) When necessary, the chairman of the examination board must take care that all the candidates have a theme for the Master thesis in proper time.

(4) The Master thesis may be accepted also as a team work if the contribution of each student is clearly differentiable and rateable and can be evaluated due to indications such as paragraphs, page-numbers or other objective criteria that make a clear demarcation possible and fulfills the requirements from paragraph 1.

(5) The subject of the Master thesis will be displayed only after the admission to the Master examination and, as a general rule, after the subject examination I has been discarded. This issue takes place through the chairman of the examination board. The given period of time must be officially announced.

(6) The Master thesis must be finished within six months after its subject has been agreed and given to the student. The subject and the problem must be given in order to be solvable within

the given period of time. The subject may be returned only once during the first two months' time of the work process. In justified individual cases, the examination board can extend with up to three months the time to prepare the Master thesis.

(7) When delivering the Master thesis, the authors must certify in writing that the respective thesis - by a team work the marked parts of the paper - has been independently written and no other resources than the mentioned ones, nor other auxiliary help sources, were used.

## §14

### Acceptance and evaluation of the Master thesis

(1) The Master thesis and its summary (Thesen) must be delivered in due time to the examination board in duplicate. The period of time until this must be done will be officially announced. If the Master thesis is not delivered in due time, it will be rated with "not sufficient" (5.0).

(2) The Master thesis will be examined within four weeks by two reviewers. One of them must be the one that has proposed the subject of the thesis to the student, while the second one will be designed by the chairman of the examination board. Each reviewer must assign a note to the Master thesis, according to §18 par. 1.

(3) The results of a Master thesis will be publicly defended, by means of the summary (Thesen), in front of an examination committee that contains alongside the two reviewers another member of the examination board. The defence must not exceed 60 minutes. The defence will be evaluated with a note according to §18 par 1.

(4) The Master thesis will be rated with "not sufficient" when at least one reviewer has evaluated it with the note "not sufficient". Otherwise the grade of the Master thesis results from the arithmetic mean of the notes given by the reviewers and the note for the defence. Right away it will be rounded after the comma.

## §15

### Subject examinations (Fachprüfungen)

(1) The Master examination consists of four subject examinations:

- I. Abstract Mathematics,
- II. Applied Mathematics,
- III. Specialization\*,

#### IV. Minor Subject.

\*) Specialization areas: Algebra, Analysis, Geometry, Numerical Mathematics, Optimization and Stochastics.

They are reached through lectures in amount of 8 SWS in each case and must be study-accompanying carried out.

(2) The students must submit their propositions for the examinations in the major subjects for each of the subject examinations I to IV.

(3) The assignment to the examinations in abstract and applied mathematics must be announced in the university calendars after being arranged with the study commission. In case of disputes the examination board will decide. Discarding the subject examinations I and II is a prerequisite of the defence of the Master thesis.

(4) The subject examinations will be separated and, as a rule, oral examinations (cf. §16) only in the exceptional cases being discarded as written tests (Klausurarbeiten).

(5) If a plausible medical certificate asserting that because of a constant corporal handicap an exam or parts of it cannot take place for a candidate in the designed form is brought, the chairman of the examination board can allow him to sustain equivalent examinations in some other form.

(6) The subject examinations I and II cannot be taken with the same examiner. The contents for the subject examination II must prevail on a different mathematical subject area as the contents already tested in the first one. A subject already checked within a subject examination cannot be tested again within another.

#### §16

##### Oral examinations

(1) Within the oral examinations the examinee must prove that he perceives the connections between the tested areas and is in position to answer to special questions from these connected areas. Through the oral examinations it should further asserted that the examinee disposes waste basic knowledge.

(2) Oral examinations will be given either in front of some members of the examination commission (Kollegialprüfung) or in front of an examiner and a competent assessor. In the first case the students shall be tested in each period of time and subject area in principle by only an examiner. Before the assessment of the note according to §18 par. 1, the chairman of the

board, respectively the examiner, must consult the other examiners, respectively the assessor.

(3) An oral examination can follow several domains. For each candidate and subject it takes, as a rule, 30 minutes, but no more than 90 minutes altogether.

(4) The basic items and results of the examination are retained in a protocol for each individual domain. The result of each particular examination must be announced to the examined one at the end of the oral examination.

(5) Students that want to take the same test at some later time will be allowed in the audience provided that the room permits that as long as the examinee does not object. The approval does not apply for counselling or announcement of the results of the examination.

#### §17

##### Written Tests (Klausurarbeiten)

(1) Through the written tests called “Klausurarbeiten” the students must certify that they are able to treat a problem using methods specific to the examined domain and find its solution during a limited period of time and using limited aids.

(2) The aids allowed during the written tests will be announced in due time.

(3) The written tests and other written examinations whose passing is required for the continuation of the studies are, as a rule, evaluated by two examiners. The note of the written test (Klausurarbeit) results as the arithmetic mean of the individual values.

(4) The results of the written tests (Klausurarbeiten) are announced, as a rule, no more than three weeks after the examination.

#### §18

##### Evaluation of the examinations

(1) The notes for the individual examinations will be given by the respective examiners. The following notes are to be used in order to evaluate the examinations:

1 = very good	=	a first-rate performance,
2 = good	=	a performance lying considerably above the medium requirements,
3 = satisfactory	=	a performance corresponding to the medium requirements,
4 = sufficient	=	a performance that suffices, despite its deficiencies,
5 = not sufficient	=	a performance that does not suffice because of its considerable lacks.

The grades may be refined by decrements or enhances of 0.3 to some intermediary values. The notes 0.7, 4.3, 4.7 and 5.3 are excluded.

(2) When a subject examination consists of several examinations, its note is calculated as the mean value of the grades of each particular examination. Different amplitudes of the particular examinations may be weighted proportionally oriented to their corresponding SWS. Only the first digit after the comma will be kept in mind. All the other digits will be rounded. The specialized note reads, for the mean value:

up to 1.5 inclusive	=	very good,
from 1.6 to 2.5 inclusive	=	good,
from 2.6 to 3.5 inclusive	=	satisfactory,
from 3.6 to 4.0 inclusive	=	sufficient,
above 4.1	=	not sufficient.

### §19

#### Final grade of the Master examination

(1) The Master examination is considered not passed when the Master thesis or any of the subject examinations are rated as “not sufficient”.  
 (2) If the Master thesis and all the subject examinations are rated at least as “sufficient”, the Master examination is considered as passed. The overall grade results as the arithmetical mean of the notes from subject examinations I, II, III and IV and the one for the Master thesis, which is weighted twice. The attainment of the overall grade is in accordance with paragraph 2.  
 (3) Instead of the overall grade “very good” according to paragraph 2, when the Master thesis and all the subject examinations are passed with “very good”, the candidate may be awarded with the distinction “graduated with excellence” if the examination board agrees.

### §20

#### Repetition of the Master examination

(1) The subject examinations I, II, III and IV and the Master thesis can be repeated once if they are evaluated as “not sufficient”. A renouncement of the theme of the Master thesis is allowed within the given period of time announced in §13 par. 6 (3) however only when nothing from the former one is used in the new one.  
 (2) A second repetition of the Master thesis is excluded. A second repetition of the subject examinations can be approved by the examination board by written request only in very solid justified and exceptional cases and only when at least one of the subject examinations I and II has been passed with at least “sufficient” (4.0). The result of the second repetition of an examination can be only “sufficient” or “not sufficient”.  
 (3) For the repetitions of the examinations the students can ask for another examiner. §6 par. 3 is valid, correspondingly.  
 (4) A first repeated examination can take place only within an year, earliest four weeks after the failed examination. An eventual second repetition of an exam can be included only within the next regular examination period.

### §21

#### Certificate

(1) After passed Master examination, a certificate with the results will be issued. In the certificate there will be recorded the theme of the Master thesis, its note as well as the name of the supervisor. The certificate contains also the notes of each subject examination, of the defence of the Master thesis and the overall grade of the Master examination.  
 (2) The certificate wears the date of the last examination. It must be delivered immediately, within four weeks if possible. It will be under-signed by the Dean of the Faculty and the chairman of the examination board and it must be provided with the seal of the University.  
 (3) The students that do not pass the Master examination or are considered as not passed will be announced in written by the examination board if and, where applicable, when can be the Master examination repeated.  
 (4) The notification concerning the not passed Master examination is provided with a plea right.  
 (5) If the Master examination is not passed, a written attestation mentioning the performed

examinations and their grades, as well as the parts of the Master examination still not passed, will be delivered at written request by presenting the corresponding certificate and the disenrollment attestation, indicating that the Master examination has not been passed.

### **§22 Master diploma**

- (1) A diploma concerning the conferment of the academic degree will be delivered concomitantly with the certificate. The diploma encloses an English translation.
- (2) The diploma will be undersigned by the Dean of the Faculty and the chairman of the examination board and it must be provided with the seal of the University.

### **III. Final Clauses §23**

#### **Invalidity of the Master examination**

- (1) If a student has cheated at some examination and this is found only after the delivery of the certificate, the examination board can adjust his notes corresponding to that exam and the entire examination or parts of it as not passed stated.
- (2) If the requirements for the admission to an examination were not fulfilled without student's intention to cheat and this comes out only after the delivery of the certificate, this deficiency will be repaired by passing the exam. If the student has wrongly obtained the acceptance deliberately, the examination board will decide by having in attention the Administrative Procedures Act.
- (3) The student is allowed a statement in front of the commission before the decision is taken.
- (4) The incorrect certificate and, if necessary, the diploma concerning the conferment of the academic degree are retired and a new one is issued. A decision after paragraph 1 or paragraph 2(2) is excluded after a period of five years from the date of the delivery of the certificate.

### **§24 Access to the examination documents**

The examinee is granted within an year after the completion of the examination procedures, in four weeks after request, an insight on his written examination theses enclosing the review of the examiner and the examinations protocol.

### **§25 Coming into force**

- (1) These Studies Regulations apply for the students matriculated from the winter semester 1999/2000
- (2) The display of theses Studies Regulations is acknowledged by the Saxon State Ministry of Science and Culture through Decision AZ: 2-7841-11/84-2 from July 16-th, 1999. It becomes valid in the day of its publication in the official proclamations of Chemnitz University of Technology.

Chemnitz, September 23-rd, 1999

The Rector of Chemnitz University of Technology

Prof. Dr. C. von Borczyskowski