

N.B.: This translation is for your convenience only. The original German "Studien- und Prüfungsordnung der Universität Tübingen für den Studiengang Mathematical Physics mit akademischer Abschlussprüfung Master of Science (M.Sc.) – Besonderer Teil –" remains the sole legally binding document.

University of Tübingen exam regulations for the study program in Mathematical Physics culminating in an examination for a Master of Science (M.Sc.) degree – Special Provisions –

In accordance with §§ 19 (1)(2)(7, 9), 32 (3) LGH as amended, the University of Tübingen Senate on 09.02.2017 passed the Special Provisions of these exam regulations for the study program in Mathematical Physics at the University of Tübingen culminating in an examination for a Master of Science (M.Sc.) degree.

Approved by the President and Vice-Chancellor on 30.03.2017.

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Special Provisions

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§ 1 Validity of General Provisions

The University of Tübingen exam regulations for the Mathematical Physics degree program culminating in the academic degree of Master of Science (M.Sc.) – General Provisions – as amended are part of these exam regulations, insofar as no other special provisions have been made.

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I. Goals, contents and structure of the program

§ 2 Contents and goals, prescribed minimum period for completion, volume, and start date of program

(1) ¹The Mathematical Physics Master's program culminating in an examination for a Master of Science (M.Sc.) degree (hereinafter: the Master's program) is a research-oriented program following on from the six-semester Bachelor's degree in Mathematics at the University of Tübingen. ²The Master's program allows students to obtain long-term academic qualifications aimed at obtaining and increasing knowledge in a systematic and critical way, and justifying a general scientifically-based occupational qualification for students in the field of Mathematical Physics; building upon a first degree in the field. ³The Mathematical Physics program builds upon the basics and the methodological knowledge obtained during the relevant Bachelor's degree, teaching advanced skills in the areas of mathematical structure of physical theories and mathematical modelling and mathematical analysis of physical problems. ⁴Students in the Master's program are required to learn how to adequately model, structure, and analyze physical problems mathematically. ⁵The goals to be met are set out in the module handbook.

(2) ¹The regular duration of study in the Master's program is set out in § 1 (5) of the General Provisions of these exam regulations. ²A total of 120 credit points must be obtained to successfully complete this Master's degree program. ³The start of the program (winter or summer semester) is set out in the regulations governing admission and enrollment at the University of Tübingen, as amended.

(3) ¹A prerequisite for enrollment in this Master's program is a Bachelor's degree in the subjects of Mathematics or Physics or an equivalent degree with a grade of 2.5 or better, respectively. ²The board of examiners will decide on the equivalency of a degree and on whether the prerequisite in (1) above has been met. ³The board may transfer this decision revocably to the head of the board. ⁴If there is a set number for admission, the statutes may specify that the selection committee formed for the relevant selection process decides instead.

(4) ¹To take part in the Master's program, you must also document that your knowledge of English is at least at the level of B2 of the Common European Framework of Reference for Languages (CEFR). ²For the requirement in (1) above, paragraph (3)⁽²⁻⁴⁾ applies accordingly.

§ 3 Structure

(1) ¹The Master's program is structured over two years. ²It concludes with the Master's examination.

(2) ¹Students complete a program of 120 credit points. The program consists of the following modules:

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Study area	recommended semester (subject to availability and change, see mod. handbook)	Module code	Module description	Class type (subject to change, see module handbook)	ECTS credits
Study area: Basics of Mathematical Physics	1	G1	Geometry in Physics	see module handbook	9
	1	G2	Mathematical Quantum Theory *	see module handbook	9
	2	G3	Mathematical Relativity *	see module handbook	9
	2	G4	Mathematical Statistical Physics *	see module handbook	9
Study area: Further Knowledge	1 / 2 / 3	E1	Advanced Topics in Mathematics	see module handbook	9
	1 / 2 / 3	E2	Advanced Topics in Theoretical Physics	see module handbook	9
	2 / 3	E3	Seminar	see module handbook	3
Study area: Required electives	2 - 3	Required elective modules **		see module handbook	total of 30
Study area: Academic writing	3	SP	Scientific Project	see module handbook	9
	3 - 4	MC	Mathematical Physics Colloquium	see module handbook	3
	4	MT	Master's thesis (Master's thesis and, if provided for in the module handbook or exam regulations, possibly further classes or assessment)		30

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* Of the three modules G2 (Mathematical Quantum Theory), G3 (Mathematical Relativity) and G4 (Mathematical Statistical Physics) the student must complete either both G2 and G3 or both G3 and G4 or both G2 and G4.

** In the Required Elective study area, modules carrying a total of 30 ECTS credit points must be completed. The module handbook sets out which modules may be selected in the Required Electives study area.

(3) If such elective options exist, students must make use of them so that the required number of credit points is reached in each module or study area (Study areas: Basics of Mathematical Physics; Further Knowledge; Required Electives; Academic Writing), unless the head of the board of examiners approves a differing points schedule.

(4) ¹The modules and classes taken in the Required Electives and Further Knowledge study areas must be selected by the student (giving details of the study program the respective module belongs to) at the latest by the start of the lecture period in the fourth semester via a written declaration to the head of the examination board; such an application must be approved by the head of the examination board. ²This selection is binding upon approval by the head of the examination board; any changes the student seeks thereafter must be applied for and they must be approved (the student does not however have any right to have any such changes approved) by the head of the examination board.

(5) ¹Failed attempts in a class will be counted even if that class is taken again as part of another module or in another study area. ²Classes which a student has already successfully completed may not be taken again as part of another module, or in another study area.

(6) ¹It is prohibited for students to take, as part of their Master's studies, any module or class which is the same as, or substantially similar to, one they took in their Bachelor's studies; such modules and/or classes may therefore not be selected as part of Master's program studies under these exam regulations, nor be completed under § 3(2-4). ²In borderline cases and particularly cases in which the content of the modules/ classes overlaps to a large degree, the examination board is to decide on whether the module/ class may be selected/ completed as part of the program. ³The examination board may in individual cases define another appropriate module or class to replace a module or class which is excluded, if otherwise on the basis of these exam regulations and the module handbook there would not be a module yielding the necessary credits for an individual student to complete the program.

(7) The provisions in the module handbook for any module of the “Required Electives” study area may also be valid for that module when it is also used as part of another degree program; likewise, the Mathematical Physics degree program's module handbook may refer to the module handbook of another degree program for the provisions governing shared modules.

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II. Teaching of material

§ 4 Types of classes within the modules

¹Classes of the following types in particular are scheduled regularly:

1. Lectures
2. Seminars
3. Colloquiums, practical work

²For classes which are wholly or largely made up of elements of the types listed in (1)(2-3) above, participant numbers may be limited under § 30(5)(1) LHG if training could not otherwise be guaranteed in accordance with the regulations or if a limitation is necessary for other reasons of research, teaching or patient care. ³Subject-related techniques in particular are to be taught in these classes along with interdisciplinary, professionally-oriented qualifications.

⁴In addition, students are to have the opportunity to work in small groups to develop the ability to present the knowledge obtained both verbally and in written form. ⁵In addition, within the framework of § 30 (5)(1) LHG the right to participate in classes may be restricted or admission to part of the course may be made dependent on the completion of certain coursework, if training could not otherwise be guaranteed in accordance with the regulations or a limitation is necessary for other reasons of research, teaching or patient care.

§ 5 Languages of instruction and examination

¹German and English are the languages of instruction and examination in this degree program.

²Classes and exams may take place in German or English; students are required to be sufficiently competent in German and English. ³In classes aimed at teaching a language other than German, the teaching and exams may be conducted in the relevant other language. ⁴The degree may also be obtained by completing the parts of the program offered in English; it is possible to gain enough credit points in the program's English-language classes to complete the degree, with all compulsory classes held in English and in these mandatory and other classes the coursework may be assessed in English.

§ 6 Types of assessment

The assessed coursework required in each of the modules is set out in the module handbook.

III. Organization of program

§ 7 Volume of material

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The required volume of study is set out in the General Provisions of the exam regulations, the structure of the program and the modules - particularly in § 3 of the Special Provisions of the exam regulations and in the module handbook.

IV. Master's examination and overall grade

§ 8 Nature and execution of Master's examination

In addition to the prerequisites set out in the General Provisions of these exam regulations, prerequisites for admission to the Master's thesis process and other possible oral examinations to be completed in the final phase of the program under § 15 of the General Provisions are:

- the successful completion of the 3 required modules in the study area Basics of Mathematical Physics according to § 3(2), and
- the successful completion of modules worth a total of at least 18 ECTS credits from the study areas Further Knowledge and Required Electives (cf. overview in § 3), and
- the successful completion of the Scientific Project module (cf. overview in § 3).

§ 9 Master's thesis

Provisions governing the Master's thesis are set out in § 17 of the General Provisions of these exam regulations.

§ 10 Calculation of the overall grade

The overall grade of the Master's examination is calculated on 33% of the grade for the Master's thesis module (Master's thesis and any further work required for this module according to the table set out under § 3) and 67% of the average (as weighted by credit points) of the grades of the other graded modules, taking account of the further provisions in § 21 of the General Provisions of these exam regulations.

V. Closing remarks

§ 11 Effective date

¹These exam regulations come into effect on the date of their publication in the University of Tübingen's official bulletin, the Amtliche Bekanntmachungen. ²Their first semester of validity is the winter semester 2017/2018.

Tübingen, 30.03.2017

Professor Dr. Bernd Engler
President and Vice-Chancellor