

## **University of Tübingen exam regulations for the study program in Astro and Particle Physics culminating in an examination for a Master of Science (M. Sc.) – Special Provisions –**

In accordance with §§ 19 (1)(2)(7, 9, 32), para. (3) LHG of 04.01.2014 (GBl. p. 99), most recently amended by article 2 of the law dated 23 February 2016 (GBl. p. 108, 118), the University of Tübingen Senate on 09.02.2017 passed the Special Provisions of these exam regulations for the study program in Astro and Particle 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 04.05.2017.

### Contents:

#### **Special Provisions**

§ 1 Validity

#### **I. Goals, contents and structure of the program**

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

§ 3 Structure

#### **II. Teaching of material**

§ 4 Types of classes within the module

§ 5 Languages of instruction and examination

§ 6 Types of assessment

#### **III. Organization of program**

§ 7 Volume of material

#### **IV. Master's examination and overall grade**

§ 8 Nature and execution of Master's examination

§ 9 Master's thesis

§ 10 Calculation of the Master's overall grade

#### **V. Closing remarks**

§ 11 Effective date

#### **§ 1 Validity of General Provisions**

The University of Tübingen exam regulations for the study program in Astro and Particle Physics culminating in an examination for a Master of Science (M. Sc.) – General Provisions – as amended are part of these exam regulations, insofar as no other special provisions have been made.

## I. Goals, contents and structure of the program

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

(1) <sup>1</sup>The study program in Astro and Particle Physics culminating in an examination for a Master of Science (M. Sc.) (hereinafter: Master's program) is a research-oriented program following on from a Bachelor's degree in the same field. <sup>2</sup>The 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 Astro and Particle Physics; building upon a first degree in the field. <sup>3</sup>The Master's program encompasses the teaching of in-depth theoretical and methodical research-oriented knowledge in the field of Astro and Particle Physics. <sup>4</sup>The goals to be met are set out in the module handbook.

(2) <sup>1</sup>The regular duration of study in the Master's program is set out in § 1 (5) of the General Provisions of these exam regulations. <sup>2</sup>A total of 120 credit points must be obtained to successfully complete this Master's degree program. <sup>3</sup>The 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) <sup>1</sup>A prerequisite for enrollment in this Master's program is a Bachelor's degree in the subject of Physics or an equivalent degree with a grade of 2.5 or better. <sup>2</sup>The board of examiners will decide on the equivalency of a degree and on whether the prerequisite in (1) above has been met. <sup>3</sup>The board may transfer this decision revocably to the head of the board. <sup>4</sup>If there is a set number for admission, the statutes may specify that the selection committee formed for the relevant selection process decides instead.

(4) <sup>1</sup>To 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). <sup>2</sup>For the requirement in (1) above, paragraph (3)<sup>(2-4)</sup> applies accordingly.

### § 3 Structure

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

(2) <sup>1</sup>Students complete a program of 120 credit points. The program consists of the following modules: (V = lecture, S = seminar, Ü = exercise, P= practical work, PR= project):

recommended semester (subject to availability and change, see module handbook)	Module code (subject to availability and change, see module handbook)	Module description	Type of class (subject to availability and change, see module handbook)	ECTS credits
1	APP101	Astronomy & Astrophysics	V, Ü	9
1	APP102	Particle Physics	V, Ü	9
1-2	APP103	Laboratory Work	P	6
1-2	APP104	Modern Topics in Astro and Particle Physics	V, S	6
1-2	Required elective modules * **		depending on choice	24
2	APP301	Module of neighboring field **	V, Ü	6
3	APP401	Scientific Specialisation in Thesis Topic	PR	15
3	APP402	Methods and Project Planning	PR	15
4	APP403	Master's Thesis		30

		(Master's thesis and, if provided for in the module handbook or exam regulations, possibly further classes or assessment)  (including 30 ECTS for Master's thesis)		
--	--	--	--	--

\* In the Required Elective study area, modules carrying a total of 24 ECTS credit points chosen by the student must be completed.

\*\* The module handbook sets out which modules may be selected in the Required Electives and "neighboring field" study areas.

(3) If such elective options exist, students must make use of them so that the exact number of graded modules and of ECTS credits in the required elective study area is reached as required, unless the head of the board of examiners approves a differing points schedule.

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

(5) <sup>1</sup>It 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). <sup>2</sup>In 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. <sup>3</sup>The 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.

## II. Teaching of material

### § 4 Types of classes within the modules

<sup>1</sup>Classes of the following types in particular may be scheduled:

1. Lectures
2. Seminars
3. Colloquiums, exercises, internships / laboratory practical work, tutorials, excursions.

<sup>2</sup>For 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. <sup>3</sup>Subject-related techniques in particular are to be taught in these classes along with interdisciplinary, professionally-oriented qualifications.

<sup>4</sup>In 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. <sup>5</sup>In 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 course-

work, 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**

<sup>1</sup>English is the language of instruction and examination in this Master's degree program.

<sup>2</sup>Classes and exams may also take place in German; students are required to be sufficiently competent in German. <sup>3</sup>In classes aimed at teaching a language other than German, the teaching and exams may be conducted in the relevant other language. <sup>4</sup>The 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**

The required volume of study arises from the General Provisions of the exam regulations, the structure of the program and the modules - particularly from § 3 of the Special Provisions of the exam regulations.

## **IV. Master's examination and overall grade**

### **§ 8 Nature and execution of Master's examination**

<sup>1</sup>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 Astronomy & Astrophysics module (cf. overview in § 3), and
- the successful completion of the Particle Physics module (cf. overview in § 3), and
- the successful completion of the Laboratory Work module (cf. overview in § 3), and
- the successful completion of the Modern Topics in Astro and Particle Physics module (cf. overview in § 3), and
- the successful completion of 3 further modules from the required elective modules area, worth a total of at least 18 ECTS credits (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**

<sup>1</sup>The overall grade of the Master's examination is calculated on 67% 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 33% of the average (as weighted by credit points) of the grades of the other graded modules under item 2, taking account of the further provisions in § 21 of the General Provisions of these exam regulations. <sup>2</sup>For the calculation of the module grade average in item 1 above, the following module grades are included:

- the Astronomy & Astrophysics module, and
- the Particle Physics module, and
- Module grades from the compulsory-elective area to a total of 12 ECTS credits (students themselves must ensure that they obtain module grades in modules with this exact number of ECTS credit points);

the module grades included are weighted by the number of ECTS credit points they carry.

<sup>3</sup>The student must notify the head of the Examinations Board upon finishing the program at the latest, which of the module grades in the required electives study area are to be included in the overall grade; this notice is binding on the student upon issue of the certificate.

## **V. Closing remarks**

### **§ 11 Effective date**

<sup>1</sup>These exam regulations come into effect on the date of their publication in the University of Tübingen's official bulletin, the Amtliche Bekanntmachungen. <sup>2</sup>Their first semester of validity is the winter semester 2017-18.

Tübingen, 04.05.2017

Professor Dr. Bernd Engler

President and Vice-Chancellor