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

In accordance with § 19 (1)(2)(7, 9), and 32 (3) LGH as amended, the University of Tübingen Senate on 14.07.2016 passed the General Provisions of these exam regulations for the study program in 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 13.09.2016.

In accordance with §§ 19 (1)(2)(9), 34 (1) LHG (GBI. of 01.01.2005 as amended (GBI. p. 457) the University of Tübingen Senate on 25.07.2013 passed the following Special Provisions of these exam regulations for the study program in 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 30.07.2013.

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§ 1 Validity of General Provisions

The University of Tübingen exam regulations for the study program in 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) ¹The Master's program is a research-oriented program following on from a Bachelor's degree in the same field. 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 Physics.

(2) ¹The regular duration of study in this Master's program is set out in § 1 (5) of the General Provisions of these exam regulations. ²A total of 60 credit points must be obtained to successfully complete this M.Sc. 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 subject of Physics or an equivalent degree with a grade of 3.3 or better and documented knowledge of and assessment in the following areas:

- Assessment in theoretical Physics (Quantum Mechanics, Thermodynamics, Statistical Physics, Classical Field Theory) totaling at least 12 ECTS credits and
- Assessment in experimental Physics (Astronomy and Astrophysics, Nuclear and Particle Physics, Atomic and Molecular Physics, condensed matter, nanostructures) totaling at least 18 credit points and
- Assessment in physical practical work totaling at least 9 ECTS credits.

²To take part in the Master's program, you must also document knowledge of either German to a minimum level of DSH-2 in the Deutschen Sprachprüfung für den Hochschulzugang (DSH), or English at least at the level of B2 of the Common European Framework of Reference for Languages (CEFR). ³The board of examiners will decide on the equivalency of a degree and on whether the minimum language requirements in items 1 and 2 above have been met.

⁴The board of examiners may transfer this decision revocably to the head of the board. ⁵If there is a set number for admission, the statutes may specify that the selection committee formed for the relevant selection process decides instead.

§ 3 Structure

(1) ¹The Physics Master's program is structured over one year. ²It concludes with the Master's examination.

(2) ¹Students complete a program of 60 credit points. The program consists of the following modules:

Recommended Semester (subject to availability and change, see module handbook)	Module code	Module description	ECTS credits
1	FSMA	Subject Specialisation	15
	MKPP	Methodology and Project Planning	15
2	MA	Master's thesis module (Master's thesis and, if provided for in the module handbook, possibly further classes or assessment)	30

(3) ¹There is a further option for students accepted into the program to participate in the double-degree program with the Università degli Studi di Trento (University of Trento) (Italy), within the framework of that program's regulations. ²The details are set out in § 10a and/or in the module handbook; furthermore, the requirements for participation and the contents of the program are set out in a separate agreements between the University of Tübingen and the University of Trento.

II. Teaching of material

§ 4 Types of classes within the modules

¹Classes of the following types in particular may be scheduled:

1. Lectures, seminars, colloquia, internship / laboratory practical work.
- 2.

²For classes which are wholly or largely made up of elements of the types listed in item (1) nos. 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 be conducted in German or English; exams are usually conducted in the language in which the relevant classes were held; 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

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

¹In 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:

- a. having obtained at least 240 ECTS credits in the degree upon which admission to the Master's program under § 2 para. (3) was based.
- b. or otherwise having completed additional modules and/or classes to obtain enough credit points so that, in the degree upon which admission to the Master's program under § 2 para. (3) was based and in the Master's program, a total of 300 ECTS credits are obtained.

²The decision on which modules and/or classes must be completed additionally in the case of item 1(b) above rests with the Examinations Board and is made together with admission; they include modules not held to be divergent by the examinations board and/or classes from the "in-depth subject" area of the Bachelor's program in Physics at the University of Tübingen totaling 21 ECTS credits including the corresponding assessment. ³The selection of additional modules and/or classes is intended to be a useful complement to the completed degree upon which admission to the Master's program under § 2 para. (3) was based. ⁴The additional ECTS credits to be obtained under item 1(b) above are not included in the calculation of the overall Master's grade and the time spent studying for these additional credit points - up to one per semester per 30 ECTS started under item 1(b) - will not count towards the regular duration of study or any deadline for the Master's examination foreseen by these regulations and can be used additionally.

§ 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 corresponds to the grade for the Master's thesis module, taking account of the further provisions in § 21 of the General Provisions of these exam regulations.

§ 10a Special provisions for the double-degree program with the Università degli Studi di Trento

(1) ¹**University of Trento** students participating in the double-degree program complete coursework according to the student's choice of:

- **either (Option A1)** the Subject Specialisation module (15 ECTS), the Methodology and Project Planning module (15 ECTS) and the Master's thesis module (30 ECTS) set out in § 3 of the Special Provisions of these exam regulations **at the University of Tübingen** according to these study and exam regulations and the corresponding module handbook
- **or (Option A2)**
 - the two modules Subject Specialisation (15 ECTS) and Methodology and Project Planning (15 ECTS) set out in § 3 of the Special Provisions of these exam regulations **at the University of Tübingen** according to these study and exam regulations and the corresponding module handbook
 - **and at the University of Trento**, according to the valid provisions there, the “prova finale” (Master's thesis and oral examination, “esame finale”) (totaling 42 ECTS according to the Trento regulations) of the 120-ECTS-credit program culminating in the “Laurea Magistrale in Fisica,” which will then be recognized under § 3 para. (2) of the Special Provisions of these exam regulations as the Master's thesis module, once the requirements have been met and are documented in particular in accordance with § 6 of the General Provisions of these exam regulations.

(2) ¹Instead of the coursework foreseen under § 3 para. (2) of the Special Provisions of these exam regulations, the **Tübingen students** taking part in the double-degree program with the Università degli Studi di Trento (University of Trento) must complete a program of 60 credit points according to the following table:

Recommended Semester (subject to availability and change, see module handbook)	Module description	ECTS credits
1	Required elective course 1	6
	Required elective course 2	6
	Required elective course 3	6
	Required elective course 4	6
2	Master's Thesis module (Master's thesis, further class and/or assessment; cf. module handbook)	36

²This work for assessment must be carried out by:

- completing, **at the University of Trento**, according to the valid provisions there, 4 required elective modules (“Insegnamenti a scelta vincolata,” each 6 ECTS) of the 120-ECTS-credit study program culminating in the “Laurea Magistrale in Fisica;” each of these must then be recognized under § 6 of the Special Provisions of these exam regulations as one of the required elective modules Required elective course 1, 2, 3 or 4, required under item ¹, once the requirements have been met and are documented according in particular with § 6 of the General Provisions of these exam regulations.
- **and additionally** completing, according to the student’s choice:
 - **either (Option B1) at the University of Trento**, according to the valid provisions there, the “prova finale” (Master’s thesis and oral examination, “esame finale”) (totaling 42 ECTS according to the Trento regulations) of the 120-ECTS-credit study program culminating in the “Laurea Magistrale in Fisica,” and having this recognized as the Master’s thesis module, once the requirements have been met and are documented in particular in accordance with § 6 of the General Provisions of these exam regulations and as the Master’s Thesis module under item ¹ above.
 - **or (Option B2) at the University of Tübingen**, the Master’s thesis module set out in item ¹ above in accordance with these exam regulations and the corresponding module handbook.

(3) ¹Upon successful completion of their studies, students will receive their academic degree from their respective university in line with the respective regulations. ²The University of Tübingen confers the Master’s degree as set out in § 2 of the General Provisions of these study and exam regulations; the documentation and the degree certificate in particular, may include a reference to the holder’s participation in the double-degree program. ³The conferring of an academic degree to students by the University of Trento (in particular the Master’s Degree in Physics/ Laurea Magistrale in Fisica under the separate agreement between the University of Tübingen and the University of Trento) is regulated by University of Trento provisions.

(4) ¹**Option A 1** may only be selected if the topic for the Master’s thesis required under § 17 para. (1) item ³ of the General Provisions of these regulations in the Master’s thesis module has already been issued; the topic is issued subsequent to the student’s admission to the Master’s thesis process at the beginning of the first of the two modules specified in § 3 para. (2) of the Special Provisions of these regulations, Subject Specialisation and Methodology and Project Planning, and is a prerequisite for starting them. (4) ¹**Option A 1** may only be selected if, notwithstanding § 17 para. (1) item ³ of the General Provisions of these regulations, the topic for the Master’s thesis in the Master’s thesis module has already been issued; the topic is issued subsequent to the student’s admission to the Master’s thesis process at the beginning of the first of the elective modules Wahlpflichtkurs 1, 2, 3 or 4, required under para. (2) item ¹, and is a prerequisite for starting them. ³Because work in the Master’s thesis under Option A1 is conducted not only in the Master’s thesis module but also in the modules Subject Specialisation and Methodology and Project Planning, the time limit under § 17 para. (2) item 1 of the General Provisions of these regulations **under Option A1** for writing a Master’s thesis - from the issuing of the topic to submission of the thesis - is 12 months. ⁴Because work in the Master’s thesis under Option B2 is conducted not only in the Master’s thesis module within the framework of studies at the University of Trento but also in the compulsory elective modules Wahlpflichtmodul 2, Wahlpflichtmodul 3 and Wahlpflichtmodul 4, the time limit **under Option B2** for writing a Master’s thesis - from the issuing of the topic to submission of the thesis - is 12 months. ⁵Notwithstanding § 8 item 1 of the Special Provisions of these regulations, on top of ECTS credits earned and documented under § 8 item 1 of the Special Provisions in the degree which formed the basis of the student’s admission to the Master’s program under § 2 para. (3), ECTS credits may also be accredited which were obtained by the student at the

University of Trento as part of the 120-ECTS credit program culminating in the Laurea Magistrale in Fisica degree but not yet completed by the student.

(5) ¹The calculation of the overall Master's examination under these regulations conforms with § 10 of the Special Provision **in the case of Option A1**. ²**In the case of Option A2** the overall Master's examination grade is in line with these regulations in that the grade obtained within the framework of the "prova finale" Master's thesis grade at the University of Trento in that university's degree program culminating in the Laurea Magistrale in Fisica is converted according to a conversion table agreed by the examination board into a grade foreseen under § 14 of the General Provisions and, as a grade of the module foreseen under § 3 para. (2) of the Special Provisions, the Master's thesis module, is included in the calculation of the overall grade. ³**In the case of Option B2**, the overall grade of the Master's examination corresponds to the grade for the Master's thesis module, taking account of the further provisions in § 21 of the General Provisions of these exam regulations. ⁴**In the case of Option B1** the overall Master's examination grade is in line with these regulations in that the grade obtained within the framework of the "prova finale" Master's thesis grade at the University of Trento in that university's degree program culminating in the Laurea Magistrale in Fisica is converted according to a conversion table agreed by the examination board into a grade foreseen under § 14 of the General Provisions and, as a grade of the module foreseen under § 10a para. (2) of the Special Provisions, the Master's thesis module, is included in the calculation of the overall grade.

(6) ¹If no other agreement has been made, the board of examiners decides on participation in the program according to the number of available places and the criteria of the degree of suitability (letter of motivation and selection interview) and performance (grade given for applicant's first qualifying degree under § 2 paragraph (3)) on the Tübingen side, insofar as no other, separate agreement has been made between the University of Tübingen and the University of Trento under the Double Degree Program. ²The board of examiners may transfer this decision revocably to the head of the board or in this case communicate a set number for admission to the selection committee formed for the selection procedure. ³Tübingen students must in addition fulfill the University of Trento requirements regarding the language of instruction and examination.

Effective date

¹These 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.

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