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) sentence 2 no. 9, 32 (3) of the law governing institutions of higher education, LHG, of 1 January 2005 (GBl. p. 1), in the version published 1 April 2014 (GBl. p. 99) most recently amended by article 1 of the law dated 17 December 2024 (GBl. p. 114), the University of Tübingen Senate on 13.03.2025 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 on 10.04.2025

Contents

A. Validity of General Provisions and admission requirements

§ 1 Validity of General Provisions

The MRPO - the General Provisions of the University of Tübingen exam regulations for Master's degree programs culminating in an examination for a Master of Science (M.Sc.) / Master of Arts (M. A.) degree - as amended are part of these exam regulations, insofar as no other special regulations have been made.

§ 2 Requirements for admission to program

(1) [1]A prerequisite for studies in this Master's program is a grade of 2.5 or better in a Bachelor's degree in the subject of Physics, in a related program covering basically the same material, or an equivalent degree. [2]Furthermore, proof must be provided of knowledge in areas relevant to astrophysics and particle physics (in particular theoretical physics, experimental physics, laboratory practicals). [3]The respective examination board will decide on the equivalency of a degree and on whether the prerequisite in sentence 2 above has been met. [4]The board of examiners may transfer

the making of this decision revocably to the head of the board. [5]If there is a restricted number of admissions, statutes may specify that the decision is instead made by a selection committee formed for the relevant selection process.

(2) To take part in the Master's program, applicants must also document proficiency in English at least at the level of B2 of the Common European Framework of Reference for Languages (CEFR).

B. Goals, content and structure of the program

§ 3 Goals and contents of program, regular duration of study, scope of program

(1) [1]Studies in the Master of Science program (M. Sc.) in Astro and Particle Physics (hereinafter: the program) enable students to acquire the specific qualifications, competencies, knowledge, abilities and skills required for a Master's degree in the subject of Astro and Particle Physics under § 7 (1) of the Master's degree framework exam regulations. [2]The objective of the program is to deepen or expand the knowledge acquired in the Bachelor's degree, thus providing the basis for the development and/or application of the student's own ideas (application or research-oriented); graduates possess a broad, detailed and critical understanding at the cutting edge of knowledge in one or more specialized fields

- and are able to apply their knowledge and understanding as well as their problem-solving skills in new and unfamiliar situations related to their field of study in a wider or multidisciplinary context (instrumental competencies),
- to integrate knowledge and deal with complexity,
- and to make academically sound decisions on the basis of incomplete or limited information, taking into account social, academic and ethical findings resulting from the application of their knowledge and from their decisions,
- to acquire new knowledge and skills independently and to carry out largely self-directed and/or autonomous independent research- or application-oriented projects (systemic competencies)
- to communicate their conclusions and the information and motives underlying them to experts in the subject and laypersons alike, in a clear and unambiguous manner in accordance with the latest research and practice; to exchange information, ideas, problems and solutions with both experts and laypersons on an academic level and to assume prominent responsibility in a team (communicative competencies).

[3]Further details of the course objectives are set out in the module handbook.

(2) [1]The regular duration of study for this degree program is 4 semesters. [2]The program comprises 120 ECTS credit points (CP).

(3) Over and above the number of credit points prescribed for the degree program according to these regulations, students may obtain no more than 30 additional credit points from the degree program modules specified in § 5 (1); in all other respects, § 2 (5) of the Master's degree framework exam regulations (MRPO) applies.

§ 4 Academic degree

The academic degree "Master of Science" (abbr. "M.Sc.") is conferred on the basis of a successful completion of the program.

§ 5 Program Structure

[1]Students complete a program to earn credit points as set out in § 3 (2); the program consists of the following modules:

SE-MESTER NO.	**Module no.**	**P/WP**	**Module title**	**Work for assessment**	**CP**
1	APP101	P	Astronomy & Astrophysics	K	9
1-2	APP102	P	Particle Physics	K	9
1-2	APP103	P	Laboratory Work	foP	6
2-3	APP104	P	Modern Topics in Astro and Particle Physics	foP	6
1-2	APP105	P	Nuclear and Particle Physics	foP	6
1-4		WP	Required electives: Specialization	see module handbook	24
2-4	APP301	P	Module of neighboring field	foP	6
3	APP401	P	Scientific Specialization in Thesis Topic	no examination	12
3	APP402	P	Methods and Project Planning	no examination	12
4	APP403	P	Master's Thesis (final module)	Master's thesis and coll.	30

Abbreviations: FS = recommended semester (subject to availability and change, see module handbook); module no. = current module no. or abbreviation (subject to change, see module handbook); P = compulsory; WP = required elective; CP = credit points; K = written examination; Koll. = colloquium; foP = formative assessment.

Note: The information given in the table as the recommended semester is in reference to a start of full-time studies in the winter semester. If the program may also be started in a different semester, information on the recommended study plan is given in the module handbook or may be obtained from the relevant subject-related counselling service.

[2]Sufficient modules must be selected from the "Specialization" – in accordance with the module handbook – so that a total of 24 credit points may be earned there.

§ 6 Module coursework

[1]Details of the module coursework required in each of the modules is set out in the module table in these regulations (§ 5) and in the module handbook. [2]Assessment must be clearly specified as to its type and scope, if this is not set out in the module table.

§ 7 Language of instruction and examination

[1]English is the language of instruction and examination in this degree program. [2]Classes may also be conducted in the following languages:

- German.

[3]At the discretion of the teachers, module coursework may be required and carried out in those languages in which the module classes are taught. [4]Examinations are usually conducted in the language in which the relevant classes were held; other assessment is usually conducted in the language in which the relevant classes were held. [5]In accordance with the current state of research and teaching, content from other languages may also be dealt with in classes. [6]It is therefore assumed that students have sufficient proficiency in the relevant languages.

C. Assessment in the program

I. General Provisions for assessed coursework

§ 8 Related (major/minor) degree programs

(1) Related programs with basically the same content as defined in § 17 (2) sentence 2 of the MRPO are:

- M.Sc. Physics,
- M.Sc. Advanced Quantum Physics,
- M.Sc. Mathematical Physics.

(2) The examination board responsible for the degree program shall decide on other related programs with basically the same content.

§ 9 Examiners

Notwithstanding § 14 (1) sentence 3 of the MRPO, the following assessment takes place before two examiners:

- several pieces of assessment in the “specialization” area required elective modules; further details are set out in the module handbook.

II. Special provisions for the final module

§ 10 Final module

(1) [1]30 credit points must be obtained in the final module. [2]Of these, 27 CP are obtained in the Master's thesis and 3 CP in the colloquium which is part of the Master's thesis qualification process. [3]Regulations for the Master's thesis and the colloquium in the final module are set out in § 28 MRPO.

(2) [1]Students should register for the Master's thesis in the course of the module APP401. [2]The time limit for writing a Master's thesis - from the issuing of the topic to submission of the thesis - is 12 months. [3]The topic must be drawn from the field of Astro and/or Particle Physics; generally it should be set by an examiner as defined in § 5 in the second year of studies within the framework of the “Scientific Specialization in Thesis Topic” module.

(3) Notwithstanding § 28 (4) sentence 1 MRPO, the Master's thesis is to be written in English; the board of examiners will decide on applications to write the thesis in any other language.

(4) Notwithstanding § 28 (8) MRPO, the colloquium in the final module under (1) is overseen by an examiner without an observer and is not assessed.

(5) The duration of the colloquium in the final module is 45 minutes.

(6) The grade for the final module is calculated on the Master's thesis (worth 100 percent); the colloquium in the final module is not given a grade; for grading, § 19 MRPO applies.

§ 11 Subject-specific provisions for admission to final module

In addition to the prerequisites set out in the MRPO, the requirements for admission to the Master's thesis process are:

- obtaining the CP in the following modules set out in the module table: APP101, APP102, APP103 and APP105 and

- the successful completion of 3 modules in the “specialization” required electives area worth a total of at least 18 CP.

D. Deadlines for examinations in the program

§ 12 Deadline for completion of studies

[1]All coursework and assessment required under the exam regulations for the module coursework must be completed by the end of the student’s 8th semester in the subject. [2]If this time limit is exceeded, the student’s right to be examined is lost, unless the failure to meet the deadline is beyond the control of the student.

E. Master’s overall grade, certificate and other documentation

§ 13 Calculation of overall grade

[1]The overall grade of the Master's examination is calculated as follows: 67% from the grade for the final module (Master's thesis) and 33% from the average (as weighted by credit points) of the grades of the graded modules APP101, APP102 and module grades from the “Specialization” required electives to an overall total of 12 CP; (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. [2]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.

F. Closing remarks

§ 14 Effective date and transitional arrangements

[1]These exam regulations come into effect on the date of their publication in the University of Tübingen’s official bulletin, the Amtliche Bekanntmachungen. [2]Their first semester of validity is the winter semester 2025/26.[3]Students who commenced their studies at the University of Tübingen prior to the semester specified in sentence 2 are - subject to the following provisions - entitled to complete their module coursework in this degree program at the University of Tübingen by 30.09.2029 under the previously valid rules; however, regarding the examination board, § 6 MRPO applies. [4]Students who commenced their studies at the University of Tübingen prior to the semester specified in sentence 2, are entitled to switch and complete their module coursework in the degree program under these current exam regulations upon written application, which must be submitted to the responsible examination office by 31.03.2026. [5]If no application under sentence 4 above is lodged, then - after the deadline specified in sentence 3 - the module coursework in the degree program must be completed under these current regulations. [6]In cases under sentences 4 and 5 above, module coursework completed previously will be accredited according to the new exam regulations and the corresponding module handbook, subject to the following provisions. [7]These exam regulations do not grant any new or additional right to be assessed in an area already assessed; any fails in assessed work under the previous exam regulations will be included. [8]Furthermore the responsible board of examiners may agree suitable transitional arrangements in individual cases, particularly if previous classes are no longer offered as before or if certain classes have been completed, possibly offering partial accreditation and/or requiring certain conditions to be fulfilled, particularly if a learning agreement is to be considered.

Tübingen, 10.04.2025

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President