

Appendix

To the Programme Regulations 2014 of the
Master's degree programme in Physics

31 August 2010 (Version: 01 October 2020)

*Applies to students who commence or re-enter the degree programme in Autumn
Semester 2021 or later.*

This English translation is for information purposes only. The German version is the legally binding document.

Subject and scope

This appendix sets out the academic, language and performance prerequisites for and further details regarding admission to the Master's degree programme in Physics. It supplements the stipulations of the Admission Regulations of ETH Zurich and the Directive on Admission to Master's degree programmes.

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1 Profile of requirements

Policy

For admission to the Master's degree programme in Physics (subsequently 'the degree programme') all of the following prerequisites must be satisfied.

1.1 Degree qualifications

¹ Admission to the degree programme presupposes a university Bachelor's degree comprising at least 180 ECTS⁽¹⁾ credits or an equivalent university degree in a discipline the content of which – also with regard to any additional academic requirements within the given framework – satisfies the pertaining academic prerequisites.

² A Bachelor's degree qualifies its holder for admission to an ETH Master's degree programme only if it also qualifies said holder to enter, without additional requirements, the desired Master's degree programme within the university system where the Bachelor's degree was acquired. The Rector may also demand proof of this, determining whether such proof must come from the home university or from another university in the country where the Bachelor's degree was acquired.

1.2 Academic prerequisites

¹ Attendance of the Master's degree programme in Physics presupposes basic knowledge and skills in the disciplines of Mathematics and Physics which must in content, scope, quality and skill level be equivalent to those covered at ETH Zurich (discipline requirements profile).

² The **discipline requirements profile** is based on knowledge and skills covered in the ETH Bachelor's degree programme in Physics, including the corresponding methodological scientific thinking skills. Details are set out in Para. 5 below.

³ If an applicant does not completely satisfy the academic prerequisites, admission may be subject to the acquisition of the missing knowledge and skills in the form of additional requirements. Completion of additional requirements is expressed in credits. For further details, see Section 4 below.

¹ ECTS: European Credit Transfer System. Credits describe the average time expended to achieve a learning goal. One credit corresponds to 30 hours of work.

⁴ Admission to the degree programme is not possible if the academic gaps in the candidate's background are too extensive. For further details, see the Sections below.

⁵ The **discipline requirements profile** is structured in two parts set out below. Details regarding the content of the corresponding course units are published in the ETH Course Catalogue (www.courses.ethz.ch).

Part 1: Basic knowledge and skills

Part 1 covers basic knowledge from the disciplines Mathematics and Physics. The substance of the following course units is required:

1a *Mathematics*

- Analysis I
- Analysis II
- Linear Algebra I
- Linear Algebra II
- Numerical Methods
- Computer Science
- Complex Analysis [Funktionentheorie]
- Methods of Mathematical Physics I
- Methods of Mathematical Physics II

1b *Physics*

- Mechanics and Heat [Mechanik und Wärme]
- Oscillations and Waves [Schwingungen und Wellen]
- Electricity and Magnetism [Elektrizität und Magnetismus]
- Quantum Physics [Quantenphysik]

1c *Practicals, proseminars, semester theses*

- Physics practicals
- Semester thesis projects (experimental or theoretical) and proseminars

Part 2: Subject-specific knowledge and skills

Part 2 covers specific knowledge in the disciplines of Physics. The substance of the following course units is required:

A) *Theoretical Physics*

- General Mechanics [Allgemeine Mechanik]
- Electrodynamics [Elektrodynamik]
- Quantum Mechanics I
- * Quantum Mechanics II
- * Theory of Heat [Theorie der Wärme]
- * Continuum Mechanics [Kontinuumsmechanik]

B) *Core subjects of Experimental Physics*

- * Astrophysics
- * Solid State Physics [Festkörperphysik]
- * Nuclear and Particle Physics [Kern- und Teilchenphysik]
- * Quantum Electronics [Quantenelektronik]

From the course unit groups marked with an asterisk (*) the content of at least four course units is required, of which at least one must belong to Theoretical Physics and at least two must belong to the core subjects of Experimental Physics.

1.3 Language prerequisites

¹ The teaching language of the degree programme is English.

² For admission to the degree programme, proof of sufficient knowledge of English (Level C1⁽²⁾) must be provided.

³ The required language certificates must be submitted by the application deadline. The ETH Zurich publishes a list of the language certificates accepted.

² The required language level is measured according to the Common European Framework of Reference for Languages scale (CEFR)

2 Specific stipulations for admission and entering the degree programme

2.1 Specific stipulations for admission to the degree programme

2.1.1 Candidates with a Bachelor's degree in Physics from ETH Zurich

Unconditional admission

The following persons are guaranteed unconditional admission to the degree programme:

- a. Holders of a Bachelor's degree in Physics from ETH Zurich
- b. Students enrolled in the ETH Zurich Bachelor's degree programme in Physics

2.1.2 Candidates with a Bachelor's degree in Physics from another Swiss university

Admission

¹ Admission to the degree programme is guaranteed for those holding a Bachelor's degree in Physics from another Swiss university than ETH Zurich.

² Admission is subject to fulfilment of the language prerequisites set out in section 1.3 above.

³ Admission may be subject to additional requirements.

2.1.3 Candidates with a Bachelor's degree in Physics from a university outside Switzerland

¹ Holders of a Bachelor's degree or the equivalent in Physics from a university outside Switzerland must satisfy all of the academic and language prerequisites listed in Section 1.2 and 1.3 above for admission to the degree programme.

² Admission may be subject to additional requirements.

³ Admission is not possible if any of the following apply

- a. the language prerequisites are not satisfied
- b. the content, scope, quality and skill level of the degree are not equivalent to those at ETH Zurich
- c. the number of additional credits required to satisfy the academic prerequisites (listed in Section 1.2 above) exceeds 30 credits in total.

2.1.4 Candidates with a university Bachelor's degree in a discipline other than Physics

¹ Holders of a university Bachelor's degree or the equivalent in a discipline other than Physics may be admitted to the degree programme if they can satisfy all of the following prerequisites

- a. the academic requirements set out in Section 1.2 above are satisfied within the given framework
- b. the language prerequisites set out in Section 1.3 above are satisfied
- c. a very good academic performance during the Bachelor's degree studies

² Admission may be subject to additional requirements.

³ Admission is not possible if any of the following apply

- a. the language or performance prerequisites are not satisfied
- b. the content, scope, quality and skill level of the degree are not equivalent to those at ETH Zurich
- c. the number of additional credits required to satisfy the academic prerequisites (listed in Section 1.2 above) exceeds
 1. 30 credits in total, or
 2. 15 credits from Part 1 of the academic prerequisites

2.2 Specific stipulations for entering the degree programme

2.2.1 Candidates with an ETH Bachelor's degree in Physics

Students of the ETH Zurich Bachelor's degree programme in Physics may enrol in the degree programme directly via www.mystudies.ethz.ch. The admission procedure outlined in Section 3 is waived. Further details:

- a. The normal ETH enrolment dates and deadlines apply.
- b. Enrolment is possible as soon as
 1. a maximum of 62 credits from the Bachelor's degree programme are pending; and
 2. the first-year examinations, Examination Blocks I and II, both Beginners Practicals, and Advanced Practical 1 have been passed.
- c. Admission is provisional until the Bachelor's degree is issued. Admission will be revoked if the Bachelor's degree is not or cannot be issued.

2.2.2 Candidates with an ETH Bachelor's degree in a discipline other than Physics

The following stipulations regarding entry to the Master's degree programme apply to students from an ETH Zurich Bachelor's degree programme (other than Physics) who have been granted admission:

- a. The normal ETH enrolment dates and deadlines apply.
- b. They can enrol in the programme once they have acquired that number of credits which would qualify them to enrol in the Master's degree programme consecutive to their original subject.³
- c. Admission is provisional until the Bachelor's degree is issued. Admission will be revoked if the Bachelor's degree is not or cannot be issued.

2.2.3 Candidates with a Bachelor's degree from another university

Non-ETH graduates who have been granted admission may only begin the degree programme when they have completed the previous (Bachelor's) degree programme.

3 Application and admission procedure

¹ All candidates – with the exception of matriculated ETH Zurich students from the Bachelor's degree programme in Physics – must submit an application for admission to the degree programme. The binding specifications for application, in particular the documents required and the submission dates/deadlines, are published on the website of the ETH Zurich Admissions Office (www.admission.ethz.ch).

² Application may be made even if the required preceding degree has not yet been issued.

³ Applications will not be considered if

- a. they are submitted late or not in the correct form, *or*
- b. the relevant fees have not been paid.

⁴ The admissions committee of the degree programme determines how far the background of the candidate corresponds to the profile of requirements and submits an application for admission/rejection to the Director of Studies.

⁵ On the request of the Director of Studies the Rector makes the final decision regarding admission or rejection.

⁶ The candidate receives a written admissions decision which includes relevant information concerning any additional admission requirements.

³ The permitted number of missing credits is set out in the Programme Regulations of the respective consecutive Master's degree programme (e.g., BSc Materials Science → MSc Materials Science).

4 Fulfilling additional admission requirements

4.1 General regulations

¹ Candidates who are admitted subject to the fulfilment of additional requirements must acquire the required additional knowledge and skills before or during the Master's degree programme via self-study or by attending classes. The corresponding individual performance assessments must take place by set deadlines.

² If the candidate fails said performance assessments or does not respect the set deadlines she/he will be regarded as having failed the programme and will be excluded from it.

³ The deadlines and conditions for undergoing said performance assessments are set out in Section 4.2 below.

4.2 Performance assessment deadlines and conditions

¹ Candidates must undertake all of the performance assessments pertaining to the additional admission requirements by the end of the first year of the Master's degree programme at the latest. All additional requirements, including any assessment repetitions, must be fulfilled within 18 months of the start of the Master's degree programme at the latest.

² A pass grade in each individual performance assessment is required.

³ A failed performance assessment may only be repeated once.