

Appendix

To the Programme Regulations 2007 of the
Master's degree programme in Physics

31 August 2010 (Version: 1 March 2012)

Applies to students who commence the degree programme in Autumn Semester 2011 or later. For those entering the programme in Autumn Semester 2010 or Spring Semester 2011 the stipulations of the previous Appendix of 27 February 2007 apply.

This is an English translation only. The original German version is the legally binding document.

This appendix sets out the 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.

Contents

- 1 Profile of requirements**
 - 1.1 Degree qualifications
 - 1.2 Academic prerequisites
 - 1.3 Language prerequisites

- 2 Specific stipulations for persons holding a Bachelor's degree in Physics**
 - 2.1 Bachelor's degree in Physics from ETH Zurich
 - 2.2 Other Bachelor's degrees in Physics
 - 2.2.1 General regulations
 - 2.2.2 Bachelor's degree in Physics from another Swiss university
 - 2.2.3 Bachelor's degree in Physics from other universities

- 3 Specific stipulations for persons holding Bachelor's degrees in other disciplines**
 - 3.1 General regulations
 - 3.2 Bachelor's degree from ETH Zurich
 - 3.3 Bachelor's degree from another university

- 4 Application and admission procedure**

- 5 Fulfilling additional admission requirements**
 - 5.1 General regulations
 - 5.2 Performance assessment deadlines and conditions

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 For admission to the degree programme one of the following is required:

- a. a university Bachelor's degree in Physics comprising at least 180 ECTS¹ credits or an equivalent university degree in Physics
- b. a university Bachelor's degree comprising at least 180 ECTS credits or an equivalent university degree in a discipline whose content covers the academic prerequisites listed in 1.2.

² ETH Zurich may also demand written proof from applicants that their Bachelor's degree qualifies them to enter a Master's degree programme consecutive to it at their home universities or at a university in the country where said Bachelor's degree was acquired.

1.2 Academic prerequisites

1.2.1 Knowledge and competences

¹ Attendance of the Master's degree programme in Physics presupposes basic knowledge and competences in the disciplines of Mathematics and Physics which are in content, scope and quality equivalent to those covered in the ETH Bachelor's degree programme in Physics (discipline requirements profile).

² The **discipline requirements profile** is based on knowledge and competences covered in the ETH Bachelor's degree programme in Physics. This includes training in the relevant methodological scientific thinking and in experimental competence.

³ The discipline requirements profile is structured in two parts, as follows. Details regarding the content of the corresponding course units are published in the course catalogue (www.vvz.ethz.ch).

Part 1: Basic knowledge and competences

Part 1 covers basic knowledge from the disciplines Mathematics and Physics:

1a Mathematics

The substance of the following course units from the ETH Bachelor's degree programme in Physics is required:

¹ ECTS: European Credit Transfer System. Credits describe the average time expended to achieve a learning goal. One credit corresponds to 25-30 hours of work.

- Analysis I
- Analysis II
- Lineare Algebra [Linear Algebra] I
- Lineare Algebra II
- Numerische Methoden [Numerical Methods]
- Informatik [Computer Science]
- Funktionentheorie [Complex Analysis]
- Methoden der mathematischen Physik [Methods of Mathematical Physics] I
- Methoden der mathematischen Physics II

1b Physics

The substance of the following course units from the ETH Bachelor's degree programme in Physics is required:

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

1c Practicals, proseminars, semester theses

The following are required:

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

Part 2: Subject-specific knowledge and competences

Part 2 covers specific knowledge in the discipline of Physics.

A) Theoretical Physics

The substance of the following course units from the ETH Bachelor's degree programme in Physics is required:

- Allgemeine Mechanik [General Mechanics]
- Elektrodynamik [Electrodynamics]
- Quantenmechanik [Quantum Mechanics] I

- * Quantenmechanik II
- * Theorie der Wärme [Theory of Heat]
- * Kontinuumsmechanik [Continuum Mechanics]

B) Core subjects of Experimental Physics

The substance of the following course units from the ETH Bachelor's degree programme in Physics is required:

- * AstroPhysik [Astrophysics]
- * FestkörperPhysik [Solid State Physics]
- * Kern- und TeilchenPhysik [Nuclear and Particle Physics]
- * Quantenelektronik [Quantum Electronics]

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

1.2.2 Admission with additional requirements

¹ If the academic prerequisites listed in 1.2.1 are not completely satisfied, admission may be granted subject to the acquisition of the missing knowledge and competences in the form of additional credits (admission with additional requirements).

² The candidate must provide proof of the acquisition of the additional knowledge and competences required by passing the pertaining performance assessments by set deadlines (see Section 5).

³ If the candidate fails said performance assessments or does not respect the set deadlines he/she will be regarded as having failed the degree programme and will be excluded from it.

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.

² The required language level is measured according to the Common European Framework of Reference for Languages (EFR) scale: *The Common European Framework of Reference for Languages*, p. 23f.
www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf

2 Specific stipulations for persons holding a Bachelor's degree in Physics

2.1 Bachelor's degree in Physics from ETH Zurich

Unconditional admission

¹ Holders of a Bachelor's degree in Physics from ETH Zurich are unconditionally admitted to the degree programme.

Registration

² Students of the Bachelor's degree programme in Physics already matriculated at ETH Zurich should enrol in the degree programme directly via www.mystudies.ethz.ch. The admission procedure outlined in Section 4 is dispensed with.

Entering the Master's degree programme

³ For all Bachelor's degree students already matriculated at ETH Zurich who progress to the ETH Master's degree programme, the following applies:

- a. The normal ETH enrolment dates and deadlines apply.
- b. 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.

⁴ Students of the ETH Bachelor's degree programme in Physics may enrol directly in the Master's degree programme, as long as

- a. they have passed the first-year examinations, Examination Blocks I and II, both Beginners Practicals, and Advanced Practical 1; and
- b. a maximum of 62 credits only towards the Bachelor's degree are pending.

2.2 Other Bachelor's degrees in Physics

2.2.1 General regulations

Application

¹ Interested parties holding a Bachelor's degree in Physics which was not issued by ETH Zurich should apply through the ETH Zurich Admissions Office for admission to the Master's degree programme and are subject to the admissions procedure set out in Section 4.

Entering the Master's degree programme

² Candidates who have been granted admission may enter the Master's degree programme when they have completed the preceding Bachelor's degree programme.

2.2.2 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, as long as the language prerequisites set out in Section 1.3 have been satisfied.

² Admission may be subject to additional requirements.

2.2.3 Bachelor's degree in Physics from other universities

Admission

¹ For admission to the degree programme all the prerequisites listed in Section 1 must be satisfied.

² Admission may be subject to additional requirements.

³ Admission is not possible if the total number of additional credits required to satisfy the academic prerequisites exceeds 30.

3 Specific stipulations for persons holding Bachelor's degrees in other disciplines

3.1 General regulations

Application

¹ Interested parties who hold a qualifying Bachelor's degree in a discipline other than Physics should apply for the Master's degree programme via the ETH Zurich Admissions Office, and are subject to the admissions procedure set out in Section 4.

Admission

² For admission to the degree programme all the prerequisites set out in Section 1 must be satisfied. Very good performance in the preceding course of studies is also required.

³ Admission may be subject to additional requirements.

⁴ Admission is not possible if the number of additional credits required to satisfy the academic prerequisites exceeds

- 30 credits in total, or
- 15 credits from Part 1 of the discipline requirements profile (see Section 1.2.1)

3.2 Bachelor's degree from ETH Zürich

Entering the Master's degree programme

¹ For all Bachelor's degree students who are already matriculated at ETH Zurich and who progress to an ETH Master's degree programme, the following applies:

- a. The normal ETH enrolment dates and deadlines apply.
- b. 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 Students from an ETH Bachelor's degree programme who have been granted admission can enrol in the Master's degree 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

3.3 Bachelor's degree from another university

Entering the Master's degree programme

Candidates who have been granted admission can enter the programme when they have completed the preceding Bachelor's degree programme.

4 Application and admission procedure

¹ All interested parties – 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 specifications for application, in particular the documents required and the dates/deadlines for submission, 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 The admissions committee of the degree programme determines how far the background of the candidate corresponds to the profile of requirements. The Chair of the admissions committee⁴ formulates and submits an application for admission/rejection to the Rector.

⁴ On the basis of this application the Rector makes the final decision regarding admission without additional requirements, admission with additional requirements, or rejection.

⁵ 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., B.Sc. Physics > M.Sc. Physics).

⁴ The Chair of the admissions committee must be an ETH Zurich professor.

5 Fulfilling additional admission requirements

5.1 General regulations

¹ Candidates who are admitted subject to the fulfilment of additional requirements must acquire the required additional knowledge and competences before or during the Master's 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 he/she will be regarded as having failed the degree programme and will be excluded from it.

³ The deadlines and conditions for undergoing said performance assessments are set out in Section 5.2.

5.2 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 programme at the latest. All additional requirements, including any assessment repetitions, must be fulfilled within 18 months of the start of the Master's programme at the latest.

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

³ A failed performance assessment may be repeated once.