

Appendix

To the Programme Regulations 2006 of the
Master's degree programme in Mathematics

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 16 August 2006 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 Mathematics. 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 Mathematics (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 Mathematics comprising at least 180 ECTS¹ credits or an equivalent university degree in Mathematics
- 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 Mathematics presupposes basic knowledge and competences in Mathematics which are in content, scope and quality equivalent to those covered in the ETH Bachelor's degree programme in Mathematics (discipline requirements profile).

² The **discipline requirements profile** comprises **143 credits** in total and is based on knowledge and competences covered in the ETH Bachelor's degree programme in Mathematics. This includes training in the relevant methodological scientific thinking.

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 comprises 83 ECTS credits and covers basic knowledge in Mathematics. The substance of the following course units from the ETH Bachelor's degree programme in Mathematics is required:

- Analysis I and Analysis II (20 credits)

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.

- Lineare Algebra [Linear Algebra] I and Lineare Algebra II (14 credits)
- Funktionentheorie [Complex Analysis] (6 credits)
- Algebra I and Algebra II (12 credits)
- Topologie [Topology] (6 credits)
- Mass und Integral [Measure and Integration] (6 credits)
- Wahrscheinlichkeit und Statistik [Probability and Statistics] (7 credits)
- Numerische Mathematik [Numerical Analysis] I and Numerische Mathematics II (12 credits)

Part 2: Subject-specific knowledge and competences

Part 2 comprises 60 credits and covers basic knowledge and competences in one or more of the disciplines Mathematics, Physics and Computer Science. Both pure and applied Mathematics should be represented. For example:

- Areas of pure Mathematics such as Algebra, Analysis and Geometry
- Areas of applied Mathematics such as Probability Theory, Statistics, Numerics, Theoretical Physics and Theoretical Computer Science
- Physics (e.g., the material taught in the Physics lectures on the curriculum of the ETH Zurich Bachelor's degree programme in Mathematics)
- Computer Science (e.g., the material taught in the *Computer Science and Algorithms* and *Algorithms and Complexity* courses of the ETH Zurich Bachelor's degree programme in Mathematics)

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 Specific stipulations for persons holding a Bachelor's degree in Mathematics

2.1 Bachelor's degree in Mathematics from ETH Zurich

Unconditional admission

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

Registration

² Students of the Bachelor's degree programme in Mathematics 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 Mathematics may enrol directly in the Master's degree programme, provided that

- a. they have passed the first-year examinations and the obligatory second-year subjects of the Bachelor's degree programme
- b. a maximum of 45 credits only towards the Bachelor's degree are pending.

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

2.2 Other Bachelor's degrees in Mathematics

2.2.1 General regulations

Application

¹ Interested parties holding a Bachelor's degree in Mathematics 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 Mathematics from the University of Zurich or from EPF Lausanne

Unconditional admission

¹ Holders of a Bachelor's degree in Mathematics from the following institutions are guaranteed unconditional admission to the degree programme:

- a. the University of Zurich
- b. EPF Lausanne

² The language prerequisites given in Section 1.3 still apply.

2.2.3 Bachelor's degree in Mathematics from another Swiss university

Admission

¹ Admission to the degree programme is guaranteed for those holding a Bachelor's degree in Mathematics from another Swiss university, provided that the language prerequisites set out in Section 1.3 have been satisfied.

² Admission may be subject to additional requirements.

2.2.4 Bachelor's degree in Mathematics 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 number of additional credits required to satisfy the academic prerequisites exceeds

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

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 Mathematics 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
- 20 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 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).

3.3 Bachelor's degree from another university

Entering the Master's degree programme

⁴ 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 Mathematics – 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.

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.

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

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.