

Departments of Mathematics and Physics**Programme Regulations 2007****Master Programme in Statistics**

7 May 2007

(English is not an official language of the Swiss confederation. This translation is provided for information purposes only and has no legal force.)

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Departments of Mathematics and Physics
Programme Regulations 2007
Master Programme in Statistics

of 7 May 2007

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The ETH Zurich Executive Board,

pursuant to Art. 4, Para. 1, Lit. a of the ETH Zurich Organisation Ordinance of 16 December 2003¹,

hereby decrees:

Chapter 1: General Regulations

Section 1: General

Art. 1 Subject-matter and Scope, Appendix

¹ These Programme Regulations determine the requirements under which the Master degree in Statistics can be acquired at the Departments of Mathematics and Physics of ETH Zurich (hereafter referred to as D-MATH/D-PHYS).

² The Appendix is part of these Programme Regulations. Any modifications to the Appendix are decided by the Rector, upon the request of, or following a hearing with D-MATH/D-PHYS.

Art. 2 Academic Title

¹ The Master degree in Statistics entitles its holders to bear the following academic title:

Master of Science ETH in Statistik
(abbreviated title: MSc ETH Statistik).

² The title in English is:

Master of Science ETH in Statistics
(abbreviated title: MSc ETH Statistics).

³ Holders of this Master degree can also use the abbreviated title "MSc ETH".

¹ RSETHZ 201.021 (available in German only)

Art. 3 Legal Basis

These Programme Regulations are based on the following legal provisions:

- a. ETH Zurich General Ordinance on Performance Assessments of 10 September 2002² (AVL ETHZ – acronym for German document);
- b. Ordinance on Admission to Studying at ETH Zurich of 10 September 2002³ (Zulassungsverordnung ETHZ).

Art. 4 Course Catalogue

D-MATH/D-PHYS determine the Master programme courses for each semester, listing them in the course catalogue which is binding. This catalogue is submitted to the Rector for approval within the period stipulated. Specific details are outlined in Art. 28 AVL ETHZ⁴ and in the corresponding implementation provisions.

Art. 5 Language of Instruction

¹ Teaching is normally in English. The language used in any particular course is indicated in the course catalogue. Performance assessments are normally conducted in the language used in the course.

² Students may complete a performance assessment in English even if the assessment is normally conducted in German. Students wishing to complete the assessment in English must inform the responsible examiner in writing at the latest when they register for the assessment. Another language can be chosen by mutual agreement.

² SR 414.135.1, RSETHZ 322.021 (available in German only)

³ SR 414.131.52, RSETHZ 310.5 (available in German only)

⁴ SR 414.135.1, RSETHZ 322.021 (available in German only)

Section 2: Credit System

Art. 6 Principles

¹ The study programme is based on a credit system in accordance with the European Credit Transfer System (ECTS).

² Credits define the average amount of time required for a study performance. When studying full-time, the entire student workload for each year of study comprises an average of 60 credits. The student workload includes all study-related activities necessary to obtain credits.

³ The implementation of ECTS at ETH Zurich is defined in the Guidelines⁵ on the Credit System.

Art. 7 Allocation of Credits

¹ D-MATH/D-PHYS allocate a certain number of credits to their own courses which are subsequently specified in the course catalogue.

² For courses that are part of the curriculum of several study programmes, the department offering the course uniformly allocates the credits following consultation with the departments concerned. The Rector decides in the case of disagreement,

Art. 8 Issuing Credits

¹ Credits are only issued for satisfactory performance. Study performances are considered satisfactory, if they are graded with at least 4 or as “passed”.

² No credits are issued for unsatisfactory performance.

³ The full amount of credits is always issued for the course in question, once the pre-requisites under Para. 1 have been fulfilled. Partial issuing of credits is not allowed.

⁴ The number of credits to be issued is determined by the course catalogue valid at the time at which the performance assessment is completed.

Art. 9 Registering, Managing and Checking Credits

D-MATH/D-PHYS register, manage and check the credits.

⁵ The guidelines can be accessed online at: www.rektorat.ethz.ch/directives (available in German only)

Chapter 2: Content, Extent and Structure of the Master Programme

1. Abschnitt: Content of the Programme, Extent and Duration

Art. 10 Content of the Programme

¹ The Master programme in Statistics builds upon Bachelor programmes that include an introduction to basic mathematics. The programme imparts statistical concepts and methods directed towards their application in science, technology and medicine. Scientific and methodological knowledge are complemented with elective courses in general education in the field of Humanities, Social and Political Sciences.

² In the Master programme, students may select a specialisation area (major) to define the main focus of their individual education. Details on specialisation areas are specified in Art. 17.

³ The programme concludes with a Master thesis. The Master degree enables graduates to enter the job market or to take up a doctoral programme.

Art. 11 Exent and Duration of the Programme, Limitation on the Duration of Studies

¹ It is necessary to obtain 90 credits, as indicated under Art. 34, to acquire the Master degree. At least 60 of the required 90 credits must be acquired at ETH Zurich or at ETH Lausanne. Of these 60 credits, a minimum of 40, including the credits for the Master thesis, must be acquired at ETH Zürich.

² The Master programme in Statistics is designed to be completed within one and a half years.

³ The maximum duration of studies is three years. Upon request, the Rector can extend the duration of studies for compelling reasons.

⁴ Should admission to the Master programme in Statistics be stipulated with the need to fulfil additional requirements, this entitles the extension of the maximum duration of studies as follows:

- six months to acquire 21 – 30 additional credits;
- one year to acquire 31 – 60 additional credits.

Should less than 21 additional credits have to be acquired, the maximum duration of studies is not extended.

Art. 12 Study Guide, Study Procedure, Study Advisory Service

¹ D-MATH/D-PHYS provide a study guide to the Master programme in Statistics. It comprises an overview of the study programme.

² The student exchange advisor assists students with planning their course of study, in particular answering questions relating to study exchange.

Art. 13 Recognition of Study Achievements Acquired outside the Master Programme

¹ The Director of Studies ultimately decides on the recognition of study achievements acquired in other ETH Zurich study programmes or at other universities (e.g. student exchange) during the Master programme. Performance evaluations are handled in accordance with Art. 12 AVL ETHZ⁶.

² Study achievements that have already been recognised for a Bachelor or Master degree preceding the Master programme in Statistics are not recognised for the Master degree in Statistics.⁷

³ Study achievements acquired during the ETH Zurich programme *Advanced Studies in Applied Statistics* are only recognised for the Master degree in Statistics:

- a. if no more than five years have elapsed between the study achievements and beginning the Master programme; and
- b. if, according to Para. 2, recognition is not excluded.

The recognition of credits leads to a corresponding reduction in the number of credits required for the Master degree in Statistics.

⁴ In accordance with the regulations specified in Para. 3, study achievements acquired from other university advanced courses may also be recognised upon submission of a formal request. Such a request is assessed by the Admissions Committee (see Art. 19). Reservation is made for the provisions of Art. 11, Para.1.

Art. 14 Student Exchange

¹ During the Master programme, students can acquire credits at other universities. Of these mobility credits, a maximum of 30 can be recognised to obtain the Master degree. Reservation is made for the provisions of Art. 11, Para.1. If requested by the student, any additional mobility credits are listed in the addendum to the final academic record.

² Credits for courses at other universities offered as part of the curriculum for the Master programme in Statistics do not count as mobility credits.

⁶ SR 414.135.1, RSETHZ 322.021

⁷ This also applies for degrees from non-tiered study programmes (diploma, licentiate).

³ Students, who wish to spend an exchange semester at another university, must first prepare a written study programme in collaboration with their student exchange advisor. This study programme specifies the study achievements to be acquired at the host university and must be approved by the Director of Studies.

Section 2: Subjects and Grouping according to Category

Art. 15 Grouping according to Category

¹ To acquire the Master degree, it is necessary to have study achievements in the following categories. The minimum number of credits required in each category is indicated in Art. 34.

- a. Core Courses;
- b. Specialisation Areas (Majors) and Electives
 1. Statistical and Mathematical Courses,
 2. Courses in Application Areas;
- c. Seminar or Semester Paper;
- d. Compulsory Electives in Humanities, Social and Political Sciences;
- e. Master Thesis.

² D-MATH/D-PHYS specify in the course catalogue which courses are allocated to each category as listed in Para. 1.

Art. 16 Category Overview

¹ **Core Courses:** They serve to impart knowledge in the basic concepts and methods of Statistics. The core courses are grouped into several subject areas that are set down in the course catalogue and, in addition, are listed in the Appendix to these Programme Regulations under Item 1.1. Further details on attending core courses and performance assessments are specified in Art. 29.

² **Specialisation Areas and Electives:**

- a. **Statistical and Mathematical Courses** broaden and deepen knowledge of Basic Statistics and how they are applied, or give insight into areas of Computer Science, Numerics, Operation Research, Financial Mathematics, or Probability Theory. Details on performance assessments are specified in Art. 29.
- b. **Courses in Application Areas** allow students to deepen their knowledge in an application area of Statistics and to familiarise themselves with both its specific problems as well as mathematical and statistical methods. Details on attending these courses and performance assessments are specified in Art. 29.

³ **Seminar or Semester Paper:**

- a. **Seminars** deal with statistical methods and case studies to illustrate their application. Usually, students make a formal presentation on the topics. Further details are specified in Art. 30.
- b. **Semester Papers** serve as an in-depth study of a statistical problem with its corresponding methods, or to work on and clearly present a case study of a statistical evaluation. Further details are specified in Art. 30.

⁴ **Compulsory Electives in Humanities, Social and Political Sciences:** Students have to choose courses from the general education courses in Humanities, Social and Political Sciences (GESS). Further details are specified in the Rector's directives on GESS compulsory electives and in Art. 31 of these Programme Regulations.

⁵ **Master Thesis:** It concludes the Master programme. By writing up the Master thesis, students show their ability to independently produce a coherent and scientific piece of work. Details are specified in Art. 32.

Art. 17 Specialisation Areas (Majors)

¹ The list of specialisation areas available is specified in the course catalogue. Furthermore, the specialisation areas are listed in the Appendix to these Programme Regulations under Item 1.2.

² Students, who wish to take up a specialisation area and wish to have it printed on their degree certificate, must fulfil the following prerequisites:

- a. In the category *Specialisation Areas and Electives*, a minimum of 6 credits must be acquired in courses relating to the specialisation area chosen.
- b. The Master thesis must be written on a topic relating to the specialisation area chosen.

³ D-MATH/D-PHYS verify that any prerequisites according to Para. 2 have been fulfilled.

⁴ Further details on the specialisation areas are specified in the Study Guide to the Master programme in Statistics.

Chapter 3: Admission to the Master Programme

Art. 18 Application Prerequisites for Admission

¹ To apply for admission to the Master programme in Statistics, candidates must fulfil the following prerequisites:

- a. They hold a Bachelor degree corresponding to at least 180 credits ECTS, or an equivalent university degree, or a degree from a University of Applied Sciences, and have acquired basic mathematical knowledge. The scientific disciplines that normally qualify for the Master programme in Statistics and further details on the required scientific knowledge (requirement profile) are listed in the Appendix under Items 2 – 4.
- b. Candidates have adequate knowledge of English. If requested, they must be able to produce suitable evidence.
- c. If requested, candidates must be able to produce evidence that they would be admitted to the Master programme of the corresponding discipline at their home university, should such a programme be available.

² The Rector decides on any exceptions on the request of the Director of Studies.

Art. 19 Admission Procedure

Candidates should send their application for admission to the Master programme in Statistics to the Rectorate, ETH Zurich. They can submit their application before they have acquired their degree. The way in which applications are managed is determined by the Rector. The following also applies:

- a. Along with their application, candidates should include:
 1. a personal letter of application outlining their motivation and goals in pursuing the Master programme in Statistics;
 2. other documents (if any) relevant to the evaluation of their application.⁸
- b. The Statistics Admissions Committee evaluates the candidates' applications in terms of their academic qualifications and aptitude for the Master programme. It requests the Rector to either admit or reject the candidate, including the credits that can be recognised and those still to be acquired.
- c. Upon the request of the Admissions Committee, the Rector decides on admission or rejection, as well as determining the credits that can be recognised and those still to be acquired.

⁸ Such documents include, for example, letters of recommendation, awards, information on scientific or technical publications, references for internships, the results of the Graduate Record Examinations Test (GRE-Test) (Scores should be submitted using the ETH Institution Code: R 3331).

Art. 20 Entry into the Master Programme

¹ ETH Zurich students with a positive decision on admission can enrol for the Master programme in Statistics once they only need to acquire the number of credits for the Bachelor degree which subsequently allows them to enrol for the consecutive Master programme in their own scientific discipline.⁹ The following also applies:

- a. The regular dates and deadlines for enrolment at ETH Zurich are applicable.
- b. Admission is conditional if the Bachelor degree still has to be completed. The admission is revoked, if the Bachelor degree has not been acquired or cannot be acquired.

² Students, who have not studied at ETH Zurich and who hold a positive decision on admission to the programme, can only enrol for the Master programme once they have obtained their degree.

³ The Rector decides on any exceptions on the request of the Director of Studies.

Art. 21 Admission without Additional Requirements

Admission to the Master programme in Statistics without having to fulfil additional requirements is normally only granted to applicants who hold a university degree and fulfil the prerequisites of Art. 18 as well as the requirement profile listed in the Appendix under Item 3.2.

Art. 22 Rejection of Admission

¹ Applicants with a university degree are not admitted to the Master programme in Statistics if they are required to take additional courses (additional requirements) of more than 10 credits.

² Applicants with a degree from a University of Applied Sciences are not admitted to the Master programme in Statistics if they are required to take additional courses of more than 50 credits.

³ The Rector decides on any exceptions on the request of the Director of Studies.

⁹ The permitted number of credits still to be acquired is listed in the Programme Regulations of the relevant consecutive Master programme (e.g. for an ETH Bachelor in Biology the permitted number of credits still to be acquired is listed in the Programme Regulations for the Master in Biology).

Chapter 4: Performance Assessment Regulations

Section 1: General Regulations

Art. 23 Types of Performance Assessment, Performance Evaluation

¹ The Master programme in Statistics primarily involves the following types of performance assessment:

- a. examinations;
- b. written reports;
- c. presentations.

² Performance in an examination is graded. Other types of performance assessments are evaluated with a grade or with “passed/failed”.

Art. 24 Conditions of Admission to Performance Assessments

¹ Conditions of admission to performance assessments can be implemented. They are specified in the course catalogue should they not be specified in these Programme Regulations.

² D-MATH/D-PHYS verify that any conditions of admission to performance assessments have been fulfilled.

Art. 25 Registration for End-of-Semester Examinations and Examination Sessions, Carrying out Examinations

The AVL ETHZ regulations¹⁰ and the Rector’s directives apply with respect to registering for end-of-semester examinations and for examinations in the examination sessions as well as carrying out examinations.

Art. 26 Registration for other Performance Assessments

Registration for performance assessments that do not come under Art. 25 is normally done directly via the responsible examiner.

¹⁰ SR 414.135.1, RSETHZ 322.021

Art. 27 Performance Assessments for Additional Requirements

¹ Performance assessments for courses defined as additional requirements for admission to the Master programme in Statistics can be grouped into examination blocks. Any such examination blocks are to be specified in the admission decree.

² If no examination blocks are formed, an appropriate means of compensation is to be provided should a performance assessment be failed twice.

³ Should the additional requirements not be completely fulfilled due to the student having failed a performance assessment twice, admission to the Master programme in Statistics is revoked. Should such candidates apply for a Bachelor programme at ETH Zurich and be admitted, the following rules are effective for performance assessments already carried out to fulfil additional requirements:

- a. Performance assessments or examination blocks that have been passed can be recognised in the Bachelor programme. Any recognised performance assessments are allocated credits.
- b. No credits are allocated for performance assessments that have not been passed.
- c. The Rector decides on the recognition of credits upon the request of the responsible department.

Art. 28 Dishonest Behaviour

Details on dealing with dishonest behaviour with respect to performance assessments are specified in the ETH Zurich Disciplinary Code of 2 November 2004¹¹.

¹¹ SR 414.138.1, RSETHZ 361.1

Section 2: Performance Assessments

Art. 29 Core Courses, Specialisation Areas and Electives

¹ Each course pertaining to the categories *Core Courses* and *Specialisation Areas and Electives* is evaluated with a performance assessment.

² The type and the timing of the performance assessments are specified in the course catalogue should the courses be offered by ETH Zurich. Should the course be offered by another university, students are expected to inform themselves about the procedures for the performance assessment at that particular university.

³ The following also applies for the category *Core Courses*:

- a. In each subject area, one of the core courses totalling at least 3 credits must be successfully completed.
- b. If it is not possible to acquire the credits in one of the subject areas due to having failed the performance assessment twice or to the core courses having already been recognised for a previous Bachelor or Master degree¹², the Director of Studies decides on the appropriate means of compensation. In such cases, a reduction of the required number of credits for the Master degree is excluded.
- c. In each subject area, the core courses offered are normally mathematical as well as application-oriented in content. For each subject area, only one of these is recognised for the Master degree.

⁴ The following also applies for courses in application areas which belong to the category *Specialisation Areas and Electives*:

- a. Students list the courses they wish to select and submit their request to the Director of Studies. The courses to be attended should normally be part of only one scientific subject area.
- b. For common subject areas, the study advisor of the Master programme in Statistics keeps a non-binding list of appropriate courses.

Art. 30 Seminar or Semester Paper

¹ Students participate in a seminar at which they make a presentation and hand out a written summary of their presentation.

² If it is not possible to make a presentation or, if the student wishes, a semester paper may alternatively be written up. The semester paper is supervised by either a lecturer at ETH Zurich or an expert designated by the study advisor of the Master programme in Statistics.

¹² This also applies for degrees from non-tiered study programmes (diploma, licentiate).

Art. 31 GESS Compulsory Electives

Each course pertaining to the category GESS Compulsory Electives is evaluated with a performance assessment. The type and the timing of the performance assessments are specified by the ETH Zurich department or by the university offering the course.

Art. 32 Master Thesis

¹ Only students, who fulfil the following criteria, are allowed to write up their Master thesis:

- a. They have successfully completed the Bachelor programme.
- b. They have fulfilled any additional requirements necessary to gain admission to the Master programme in Statistics.
- c. They have acquired at least 16 credits in the category *Core Courses*.

² The Master thesis is normally supervised by a professor¹³ or a Heinz Hopf Lecturer.

³ The Director of Studies approves the topic, the supervisor, and the dates to begin and submit the Master thesis.

⁴ The Master thesis is carried out over a period of five months and concludes with a written report. Upon request, the Director of Studies can extend the duration of work for compelling reasons. If the Christmas break coincides with the period during which the Master thesis is being carried out, the duration of work is automatically extended by ten days.

Art. 33 Results and Repetition of Performance Assessments

¹ A performance assessment in the categories *Core Courses*, *Specialisation Areas and Electives*, and *GESS Compulsory Electives*, is considered as passed if it is graded with at least 4 or as “passed”. A performance assessment considered as failed can be repeated once provided that the university offering the performance assessment does not have any other regulations about repeating performance assessments.

² The performance achieved for the seminar or semester paper is evaluated with “passed” or “failed”. A seminar or semester paper considered as failed can be repeated once. If the seminar or the semester paper is repeated, a new topic must be treated.

³ The Master thesis is evaluated with a grade. It is considered as passed if it is graded with at least 4. A Master thesis considered as failed can be repeated once. If the Master thesis is repeated, a new topic must be treated.

¹³ The Master thesis can also be supervised by a retired professor during his/her first year of retirement only.

Chapter 5: Issuing the Master Degree

Art. 34 Credits in each Category

¹ The 90 credits required to obtain a Master degree must be acquired in the following categories and subcategories in the minimum number indicated for each category. Further details are specified in Para. 2 – 4:

a. Core Courses	20 credits
b. Specialisation Areas and Electives	25 credits
1. Statistical and Mathematical Courses (minimum 15 credits)	
2. Courses in Application Areas (minimum 10 credits)	
c. Seminar or Semester Paper	4 credits
d. GESS Compulsory Electives	2 credits
e. Master Thesis	30 credits
	<hr/>
	<i>Total</i> 81 credits

² The remaining credits to make up a total of 90 must be acquired in the categories according to Para. 1, Lit. a – d, whereby a maximum of 4 credits can be recognised for the category *GESS Compulsory Electives*

³ Particular provisions specified in Art. 29, Para. 3 also apply to the category *Core Courses*.

⁴ Students, who wish to take up a specialisation area and have it printed on their degree certificate, must fulfil the prerequisites in Art. 17.

Art. 35 Request to Issue the Degree

¹ Once the requirements have been fulfilled in accordance with Art. 34, students can apply within three years after having begun the Master programme to be issued with the Master degree. Upon request, the Rector can extend this time limit for compelling reasons.

² The application should indicate the performance assessments passed from the categories specified in Art. 34, Para. 1 that should be listed in the final academic record. The total number of credits for each category or subcategory must correspond to the minimum number of credits specified in Art. 34, Para. 1.

³ A maximum of 100 credits are recognised for the Master degree. If requested by the student, additional credits are listed in the addendum to the final academic record.

Art. 36 Interim Academic Record, Final Academic Record,
Grade Point Average

¹ Interim academic records are generally issued at the end of the examination sessions and contain any study performances evaluated since the last interim academic record.

² The following are listed in the final academic record:

- a. The grades and other performance evaluations in accordance with Art. 35, Para. 2, and the grade point average calculated from the grades;
- b. Additional performance evaluations are listed in the addendum to the final academic record in accordance with Art. 35, Para. 3.

³ The grade point average in the final academic record is calculated as a weighted mean of the individual grades with the credits as weights.

⁴ D-MATH/D-PHYS record, manage and check the grades and other performance evaluations, and issue the academic records.

Art. 37 Certificate, Diploma Supplement, Publication

¹ Graduates, who obtain the Master degree, receive a certificate and a diploma supplement.

² If a specialisation area is chosen, and the prerequisites are fulfilled in accordance with Art. 17, the specialisation area is printed as follows on the certificate: "Major in ... (name of specialisation area)".

³ The Rectorate publishes the names of graduates who acquire a Master degree.

Chapter 6: Final Regulations

Art. 38 Exclusion from the Master Programme

Exclusion from the Master programme in Statistics normally results from not being able to acquire the required number of credits for the Master degree as indicated in Art. 34, due to

- a. having failed performance assessments twice; or
- b. having exceeded the allowed maximum duration of study.

Art. 39 Transcript of Records

Should a student be excluded from the Master programme in Statistics before he/she acquires the Master degree, or drops out of the study programme, he/she is given a transcript of records. This transcript lists all the evaluated study achievements carried out before being excluded from or dropping out of the programme.

Art. 40 Effective Date

These Programme Regulations come into effect at the beginning of the autumn semester 2007. These regulations are effective for students who begin the Master programme on or after this date.

On behalf of the ETH Zurich Executive Board

President a.i.: Osterwalder

Delegate: Bretscher

Appendix

to the 2007 Programme Regulations for the
Master Programme in Statistics (D-MATH/D-PHYS)

approved by the Rector on 7 May 2007

1. Core Courses and Specialisation Areas (Majors) available

(Ref: Art. 16, Para. 1, and Art. 17 of the Programme Regulations)

1.1 The Core Courses are grouped into the following subject areas:

- Regression
- Analysis of Variance and Design of Experiments
- Multivariate Statistics
- Time Series and Stochastic Processes
- Mathematical Statistics

1.2 Specialisation Areas (Majors) available:

- Statistical Methodology
- Applied Statistics
- Biostatistics

The required prerequisites to gain admission to the Master programme in Statistics are indicated below:

- **Items 2 und 3** specify the details for **university graduates**
- **Item 4** specifies the details for graduates from a **University of Applied Sciences**

2. University degrees that qualify to apply for admission to the Master programme in Statistics (= qualifying scientific disciplines)

(Ref: Art. 18, Para. 1, Lit. a of the Programme Regulations)

To be able to apply for admission to the Master programme in Statistics, candidates should hold a Bachelor degree corresponding to at least 180 ECTS credits or an equivalent university degree, in which basic mathematical knowledge has been acquired. Bachelor degrees for the following scientific disciplines normally fulfil the prerequisites (= qualifying scientific disciplines).

The qualifying scientific disciplines for the Master programme in Statistics are, in particular, the following (in alphabetic order):

- Agricultural Science
- Applied Biosciences
- Biochemistry
- Biology
- Biotechnology
- Chemical Engineering
- Chemistry
- Civil Engineering
- Communication Systems
- Computational Science and Engineering
- Computer Science
- Earth Sciences
- Electrical Engineering Sciences (and Information Technology)
- Environmental Engineering
- Environmental Sciences
- Food Science
- Geomatic Engineering
- Human Movement Sciences and Sports
- Interdisciplinary Sciences
- Materials Science
- Mathematics
- Micro Technology
- Mechanical Engineering Sciences (and Process Engineering)
- Pharmaceutical Sciences
- Physics

3. Knowledge required to gain admission to the Master programme in Statistics (requirement profile)

(Ref: Art. 18, Para. 1, Lit. a of the Programme Regulations)

- 3.1** The Admissions Committee for Statistics evaluates to what extent the applicants' previous education corresponds to the predefined requirement profile (see Item 3.2). In particular, basic mathematical knowledge must be equivalent in content, scope and quality to the knowledge imparted during ETH Zurich Bachelor programmes in Natural Sciences or Engineering (see Part 2 of the requirement profile). For an overall evaluation, the Admissions Committee can consider specific knowledge other than that indicated in the fields specified for the requirement profile.

Any lacking knowledge and practical experience must be compensated for by fulfilling additional requirements. If such requirements amount to more than 10 credits, admission to the Master programme is not granted (see Art. 22 of the Programme Regulations).

3.2 The **requirement profile** is divided into the following two parts:

Part 1 comprises scientific knowledge and practical experience imparted during one of the study programmes listed in Item 2. This also includes a methodological, scientific way of thinking.

Part 2 comprises basic mathematical knowledge including the fields of Probability and Statistics amounting to 14 ECTS credits. Applicants' previously completed courses in Mathematics are evaluated according to the content of the courses listed below. The credits allocated serve as a benchmark for the scope of such courses. Details on the course content are specified in the ETH Zurich course catalogue (www.courses.ethz.ch).

– Analysis	6 credits
– Linear Algebra	3 credits
– Computer Science and Numerics	2 credits
– Probability and Statistics	3 credits

4. **Degrees from a University of Applied Sciences**

(Ref: Art. 18, Para. 1, Lit. a of the Programme Regulations)

4.1 Application requirements

Graduates from a University of Applied Sciences (FH) can apply for admission to the Master programme in Statistics, if they hold a Bachelor degree or a diploma in one of the scientific disciplines listed under Item 2 of this Appendix, and have thus acquired basic mathematical knowledge.

4.2 Fulfilling the Requirement Profile

Graduates from a University of Applied Sciences can only fulfil the requirement profile listed in Item 3.2 of this Appendix by carrying out additional requirements amounting to 50 credits. These additional requirements have primarily to be acquired in the field of Mathematics, including the fields of Probability and Statistics, and in the areas of the graduates' original scientific disciplines.

The Statistics Admissions Committee can reduce the amount of additional requirements up to a maximum of 20 credits for very well qualified graduates.