

Appendix

To the Programme Regulations 2006 of the
Master's degree programme in Geomatic Engineering and Planning

31 August 2010 (Version: 1 August 2011)

Applies to students who commence the degree programme in Autumn Semester 2012 or later. For those entering the programme in Autumn Semester 2011 or Spring Semester 2012 the stipulations of the previous Appendix 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 Geomatic Engineering and Planning. 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 Geomatic Engineering and Planning (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 Geomatic Engineering and Planning comprising at least 180 ECTS¹ credits or an equivalent university degree in Geomatic Engineering and Planning
- b. a Bachelor's degree in Geomatic Engineering from a Swiss university of applied sciences comprising 180 ECTS² credits
- c. a university Bachelor's degree comprising at least 180 ECTS credits, an equivalent university degree, or a Bachelor's degree from a Swiss university of applied sciences in a discipline other than Geomatic Engineering and Planning whose content (including any additional academic requirements within the given context) covers the academic prerequisites listed in 1.2.

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 Geomatic Engineering and Planning presupposes basic knowledge and skills in the disciplines Mathematics, Physics and Computer Science which is in content, scope and quality equivalent to that covered in the ETH Bachelor's degree programme in Geomatic Engineering and Planning (discipline requirements profile).

² The **discipline requirements profile** below comprises **102 ECTS credits** in total and is based on knowledge and skills covered in the ETH Bachelor's degree programme in Geomatic Engineering and Planning. This includes training in the relevant methodological scientific thinking.

³ If a person seeking admission does not completely fulfil the academic prerequisites, admission may be subject to additional requirements, in the form of credits, which instil the missing knowledge and skills. The details are set out in (5) below.

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.

² A Diploma from a Swiss university of applied sciences is considered equivalent to a Bachelor's degree in the same discipline. A Bachelor's degree from a German or Austrian university of applied sciences is considered equivalent to a Bachelor's degree from a Swiss university of applied sciences.

⁴ Admission to the degree programme is not possible if the academic gaps are too extensive. Persons with a university background see Sections 2.2 and 3.1 below; persons with a background from a university of applied sciences see Section 3.2.

Discipline requirements profile

The discipline requirements profile is structured in the two parts set out below. The substance of the listed course units from the ETH Bachelor's degree programme Geomatic Engineering and Planning is required. Details regarding the content of these course units are published in the course catalogue (www.vvz.ethz.ch).

Part 1: Basic knowledge (35 credits)

Part 1 comprises 35 credits and covers basic knowledge in the disciplines Mathematics, Physics and Computer Science.

- Analysis I (7 credits)
- Analysis II (7 credits)
- Lineare Algebra und Numerische Mathematik [Linear Algebra and Numerical Analysis] (5 credits)
- Statistik und Wahrscheinlichkeitsrechnung [Statistics and Probability Theory] (5 credits)
- Physik [Physics] (7 credits)
- Informatik [Informatics] II (4 credits)

Part 2: Subject-specific knowledge (67 credits)

Part 2 comprises 67 credits and covers subject-specific knowledge primarily from the discipline Geomatic Engineering and Planning, and is subdivided into two areas.

- a) 'General Geomatic Engineering Knowledge' (30 credits)
 - Geodätische Messtechnik GZ [Geodetic Metrology Fundamentals] (6 credits)
 - GIS I (3 credits)
 - Geoprocessing & Parameterschätzung GZ [Geoprocessing and Parameter Estimation] (5 credits)
 - Geovisualisierung [Geovisualisation] (5 credits)
 - Planung [Planning] I (5 credits)
 - Verkehrsplanung [Transport Planning] (3 credits)
 - Referenzsysteme [Geodetic Reference Systems] (3 credits)
- b) 'Specialised Geomatic Engineering Knowledge' (37 credits)
 - Geodätische Messtechnik [Geodetic Metrology] II (4 credits)
 - Höhere Geodäsie [Higher Geodesy] (5 credits)
 - Photogrammetrie [Photogrammetry] (5 credits)
 - Bildverarbeitung [Image Processing] (3 credits)
 - GIS II (5 credits)

- Kartografie [Cartography Introduction] (5 credits)
- Planung [Planning] II (5 credits)
- Landmanagement [Land Management] (5 credits)

1.3 Language prerequisites

¹ The teaching language of the degree programme is English. The specialisations 'Raumentwicklung' ['Spatial Planning'] and 'Umweltplanung' ['Environmental Planning'] are also taught in German.

² For admission to the degree programme, proof of sufficient knowledge of English (Level C1)³ must be provided. For admission to the two degree programme specialisations 'Raumentwicklung' and 'Umweltplanung' proof of sufficient knowledge of German (Level C1) must also be supplied.

³ Applicants to the degree programme who hold a Bachelor's degree from a university of applied sciences must, according to the pertaining additional requirements, also supply proof of sufficient knowledge of German (level C1), should this not already apply under Para. 2.

⁴ Any language certificates must be submitted by the time of entering the degree programme at the latest.

2 Specific stipulations for persons holding a Bachelor's degree in Geomatic Engineering and Planning

2.1 Bachelor's degree in Geomatic Engineering and Planning from ETH Zurich or matriculated status in the ETH Zurich degree programme in Geomatic Engineering and Planning

Admission without additional requirements

¹ Holders of a Bachelor's degree in Geomatic Engineering and Planning from ETH Zurich are unconditionally admitted to the degree programme.

Entering the Master's degree programme

² Students of the ETH Zurich Bachelor's degree programme in Geomatic Engineering and Planning may enrol in the degree programme directly via www.mystudies.ethz.ch. The admission procedure outlined in Section 4 is dispensed with. In detail:

- a. The normal ETH enrolment dates and deadlines apply.
- b. Enrolment is possible as long as only a maximum of 60 credits towards the Bachelor's degree are pending. Listed below are the course unit categories in the

³ 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

Bachelor's programme where pending credits are admissible, and their permitted number. (All credits for the Bachelor's degree in those course unit categories not listed here must be acquired in full.)

<i>Category</i>	<i>Permitted number of missing credits</i>
Obligatory subjects	36 KP
Elective module	4 KP
Electives	6 KP
Compulsory electives GESS	4 KP
Bachelor's thesis	10 KP

- 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 Bachelor's degree in Geomatic Engineering (and Planning) from a non-Swiss university

¹ Holders of a Bachelor's degree or the equivalent in Geomatic Engineering (and Planning) from a non-Swiss university must, for admission to the degree programme, satisfy the academic and language prerequisites listed in Section 1.

² Admission may be subject to additional academic requirements.

³ Admission is not possible if

- a. the language prerequisites have not been satisfied
- b. the number of additional credits required to satisfy the academic prerequisites exceeds
 - 1) 30 credits in total, or
 - 2) 20 credits from Part 1 of the discipline requirements profile, or
 - 3) 20 credits from Part 2 of the discipline requirements profile, category 'General Geomatic Engineering Knowledge'.

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.

2.3 Bachelor's degree in Geomatic Engineering from a Swiss university of applied sciences

¹ Admission to the degree programme is guaranteed for persons holding a Bachelor's degree in Geomatic Engineering from a Swiss university of applied sciences, as long as

- a. the final Bachelor's degree grade is at least a 5 [according to the Swiss grading system, which involves grades from 1 (lowest) to 6 (highest)],⁴ and
- b. the language prerequisites have been satisfied.

² Admission is always subject to the acquisition of additional study achievements comprising at least 40 credits, to compensate for gaps in academic and methodological knowledge.

³ The additional requirements to be fulfilled by candidates are structured in the following two parts:

Part 1: Standard additional requirements

Part 1 stipulates the acquisition of 32 credits from the course units listed below, which are part of the ETH Bachelor's degree programme in Geomatic Engineering and Planning. Information on the content of these course units is provided in the course catalogue (www.vvz.ethz.ch).

- Analysis I (7 credits)
- Analysis II (7 credits)
- Lineare Algebra und Numerische Mathematik [Linear Algebra and Numerical Analysis] (5 credits)
- Kartografie [Cartography Introduction] (5 credits)
- Höhere Geodäsie [Higher Geodesy] (5 credits)
- Referenzsysteme [Geodetic Reference Systems] (3 credits)

Part 2: Supplementary additional requirements

To fulfil Part 2 of the additional requirements, between 8 and 28 credits must be acquired. The respective knowledge to be acquired is determined individually from Parts 1-2 of the discipline requirements profile (see 1.2.1), according to the background of the candidate.

Entering the Master's degree programme

⁴ Candidates who have been granted admission can only enter the programme when they have completed the preceding Bachelor's degree programme.

⁴ The total grade is always calculated by ETH Zurich. The method of computation used, and other details such as how letter grades are transposed, are stipulated in the Directive on Admission to Master's Degree Programmes.

3 Specific stipulations for persons holding a Bachelor's degree in a discipline other than Geomatic Engineering and Planning

3.1 University Bachelor's degree or matriculated status in a Bachelor's degree programme at ETH Zurich

¹ If they are able to satisfy all the academic and language prerequisites set out in Section 1 within the given framework and have demonstrated very good performance in the preceding Bachelor's degree programme persons may also be admitted to the degree programme who

- a. hold a university Bachelor's degree or the equivalent in a discipline other than Geomatic Engineering and Planning; or
- b. are matriculated at ETH Zurich in a Bachelor's degree programme other than Geomatic Engineering and Planning.

² Admission may be subject to additional academic requirements.

³ Admission is not possible if

- c. the language prerequisites have not been satisfied
- d. the number of additional credits required to satisfy the academic prerequisites exceeds
 - 4) 30 credits in total, or
 - 5) 20 credits from Part 1 of the discipline requirements profile, or
 - 6) 20 credits from Part 2 of the discipline requirements profile, category 'General Geomatic Engineering Knowledge'.

3.2 Bachelor's degree from a Swiss university of applied sciences

Admission

¹ If they can satisfy all the academic and language prerequisites set out in Section 1 within the given framework and have demonstrated very good performance in the preceding Bachelor's degree programme persons may also be admitted to the degree programme who hold a Bachelor's degree from a Swiss university of applied sciences in a discipline other than Geomatic Engineering.

² Admission is always subject to the acquisition of additional study achievements comprising at least 40 credits to compensate for gaps in academic and methodological knowledge.

³ Admission is not possible if

- a. the language and performance prerequisites have not been satisfied.
- b. the number of additional credits required to satisfy the academic prerequisites exceeds 60.

3.3 Entering the Master's degree programme

¹ To students enrolled in an ETH Zurich Bachelor's degree programme (not Geomatic Engineering and Planning) who have been admitted to the Master's degree programme, the following applies:

- a. They may 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.⁵
- b. 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 Application and admission procedure

¹ All interested parties – with the exception of matriculated ETH Zurich students from the Bachelor's degree programme in Geomatic Engineering and Planning – 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 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 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.

⁵ 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).

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 programme and will be excluded from it.

³ The deadlines and conditions for undergoing said performance assessments depend upon the background of the candidate (see Sections 5.2 and 5.3 below).

5.2 Candidates with a university Bachelor's degree

¹ Candidates holding a university Bachelor's degree 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 only be repeated once.

⁴ The respective student may only commence the Master's thesis once the additional requirements have been completely fulfilled.

5.3 Candidates with a Bachelor's degree from a Swiss university of applied sciences

¹ Candidates holding a Bachelor's degree from a Swiss university of applied sciences must undertake 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 two years of the start of the Master's programme at the latest.

² The performance assessments may be undertaken as examination blocks. A pass grade in the examination block is achieved if the average of the individual grades is at least a 4.

³ A failed performance assessment or a failed examination block may only be repeated once. Repeating an examination block entails repeating all of the performance assessments belonging to it.

⁴ The respective student may only commence the Master's thesis once the additional requirements have been completely fulfilled.