

## Appendix

To the Programme Regulations 2009 of the  
Master's degree programme in Spatial Development and Infrastructure Systems (SD&IS)

31 August 2010 (Version: 1 November 2011)

*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 9 June 2009 apply.*

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*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 SD&IS. 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 SD&IS (subsequently 'the degree programme') all of the following prerequisites must be satisfied.

## 1.1 Degree qualifications

<sup>1</sup> For admission to the degree programme one of the following is required::

- a. a university Bachelor's degree comprising at least 180 ECTS<sup>(1)</sup> credits or an equivalent university degree in a discipline in the context of which the academic prerequisites listed in 1.2 have been satisfied. Said disciplines include, in particular:
  - Architecture
  - Civil Engineering
  - Geography
  - Geomatic Engineering and Planning
  - Economics
  - Spatial Development
  - Law
  - Environmental Engineering
  - Environmental Sciences
  - Transport Systems
  
- b. a Bachelor's degree from a Swiss university of applied sciences comprising at least 180 ECTS<sup>(2)</sup> credits in a discipline in the context of which the academic prerequisites listed in 1.2 have been satisfied. Said disciplines include, in particular:
  - Architecture
  - Aviation
  - Civil Engineering
  - Geomatic Engineering
  - Landscape Planning
  - Spatial Development

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<sup>1</sup> 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.

<sup>2</sup> 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.

- Tourism & Mobility
- Transport Systems

<sup>2</sup> 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

### 1.2.1 Knowledge

<sup>1</sup> Attendance of the Master's degree programme in SD&IS presupposes basic knowledge in technical and natural sciences which must in content, scope and quality be equivalent to that covered in the ETH Bachelor's degree programmes Civil Engineering, Environmental Engineering, and Geomatic Engineering and Planning (discipline requirements profile).

<sup>2</sup> The **discipline requirements profile** comprises **98 ECTS credits** in total and is based on knowledge covered in the ETH Bachelor's degree programmes Civil Engineering, Environmental Engineering, and Geomatic Engineering and Planning. This includes training in the relevant methodological scientific thinking.

<sup>3</sup> The discipline requirements profile is structured in the following three parts. The substance of the listed course units, which come from the ETH Bachelor's degree programmes in Civil Engineering, Environmental Engineering and Geomatic Engineering and Planning, is required. Information regarding the content of these course units is published in the course catalogue ([www.vvz.ethz.ch](http://www.vvz.ethz.ch)).

#### Part 1: Basic knowledge

Part 1 comprises 46 credits and covers basic knowledge.

- Analysis I (7 credits)
- Analysis II (7 credits)
- GIS [Geographic Information Systems] I (3 credits)
- GIS II (5 credits)
- Grundzüge des Rechts für Bauwissenschaften und Architektur [Introduction to Law for Civil Engineering and Architecture] (2 credits)
- Informatik [Informatics] I (5 credits)
- Informatik II (4 credits)
- Lineare Algebra und Numerische Mathematik [Linear Algebra and Numerical Analysis] (5 credits)
- Statistik und Wahrscheinlichkeitsrechnung [Statistics and Probability Theory] (5 credits)
- Umweltrecht: Konzepte und Rechtsgebiete [Environmental Law: Conceptions and Fields] (3 credits)

## Part 2: Subject-specific knowledge

Part 2 comprises 36 credits and covers subject-specific knowledge.

- Geographie der Schweiz / Einführung in die Raumplanung [Geography of Switzerland / Introduction to Urban and Regional Planning] (3 credits)
- Instrumente der Umweltplanung [Environmental Impact Assessment] (3 credits)
- Kartografie [Cartography Introduction] (5 credits)
- Landmanagement [Land Management] (5 credits)
- Planung I [Spatial Planning I] (5 credits)
- Urban Design I [Urban Design I] (1 credit)
- Verkehrsplanung [Transport Planning (Transportation I)] (3 credits)
- Bahninfrastrukturen [Rail Infrastructures (Transportation II)] (3 credits)
- Strassenverkehrssysteme [Road Transport Systems (Transportation III)] (2 credits)
- Wasserbau [Hydraulic Engineering] (5 credits)

## Part 3: degree-specific knowledge

Part 3 comprises 16 credits and covers knowledge from various areas important for the Master's degree.

- Ökologie [Ecology] (3 credits)
- Geovisualisierung [Geovisualisation] (5 credits)
- Geologie und Petrographie [Geology and Petrography] (4 credits)
- Systems Engineering [Systems Engineering] (4 credits)
- Betriebswirtschaftslehre [Business Administration] (2 credits)

### 1.2.2 Admission with additional requirements

<sup>1</sup> 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).

<sup>2</sup> 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 4).

<sup>3</sup> 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

<sup>1</sup> The teaching languages of the degree programme are German and English.

<sup>2</sup> For admission to the degree programme, proof of sufficient knowledge of German and English (level C1)<sup>(3)</sup> must be provided.

## 2 Specific stipulations for admission and entering the degree programme

### 2.1 Bachelor's degree in Architecture, Civil Engineering, Geomatic Engineering and Planning or Environmental Engineering from ETH Zurich

#### *Unconditional admission*

<sup>1</sup> Holders of a Bachelor's degree in Architecture, Civil Engineering, Geomatic Engineering and Planning or Environmental Engineering from ETH Zurich are unconditionally admitted to the degree programme.

#### *Registration*

<sup>2</sup> Students of the Bachelor's degree programmes in Architecture, Civil Engineering, Geomatic Engineering and Planning or Environmental Engineering already matriculated at ETH Zurich should enrol in the degree programme directly via [www.mystudies.ethz.ch](http://www.mystudies.ethz.ch). The admission procedure outlined in Section 3 is dispensed with.

#### *Entering the Master's degree programme*

<sup>3</sup> 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.

<sup>4</sup> Students of the ETH Bachelor's degree programmes in Architecture, Civil Engineering, Geomatic Engineering and Planning or Environmental Engineering 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.<sup>4</sup>

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<sup>3</sup> The required language level is measured according to the Common European Framework of Reference for Languages (EFR) scale: *Common European Framework of Reference for Languages*, p. 23f. [www.coe.int/t/dg4/linguistic/Source/Framework\\_EN.pdf](http://www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf)

<sup>4</sup> 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).

## 2.2 Bachelor's degree in another discipline

### 2.2.1 General regulations

#### *Application*

Interested parties holding a Bachelor's degree in Architecture, Civil Engineering, Geomatic Engineering and Planning or Environmental Engineering 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 3.

### 2.2.2 Bachelor's degree from a partner university

#### *Unconditional admission*

<sup>1</sup> Holders of a Bachelor's degree or equivalent qualification from a partner university as listed below are guaranteed unconditional admission, as long as the language prerequisites listed in Section 1.3 have been satisfied.

University	Degree
EPF Lausanne	– Architecture – Génie civil – Science et Ingénierie de l'Environnement
Imperial College London	– Civil Engineering
Technische Universität Delft	– Civile Technik, Bouwkunde – Policy Analysis and Management – Systems Engineering
Rheinisch-Westfälische Technische Hochschule Aachen	– Bauingenieurwesen
Grandes Ecoles d'Ingénieurs de Paris (ParisTech)	– Architecture – Génie civil
Technische Universität Dresden	– Verkehrswirtschaft
Technische Universität Braunschweig	– Mobilität und Verkehr
Technische Universität Dortmund	– Raumplanung
Technische Universität Wien	– Raumplanung und Raumordnung

#### *Entering the Master's degree programme*

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

### 2.2.3 Bachelor's degree from ETH Zurich

#### *Admission*

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

<sup>2</sup> Admission may be subject to additional requirements.

<sup>3</sup> 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).

#### *Entering the Master's degree programme*

<sup>4</sup> Students of an ETH Bachelor's degree programme 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.<sup>5</sup>

<sup>5</sup> 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.

### 2.2.4 Bachelor's degree from other universities

#### *Admission*

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

<sup>2</sup> Admission may be subject to additional requirements.

<sup>3</sup> 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).

#### *Entering the Master's degree programme*

<sup>4</sup> Candidates who have been granted admission may enter the Master's degree programme when they have completed the preceding Bachelor's degree programme.

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<sup>5</sup> 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).

## 2.2.5 Bachelor's degree from a Swiss university of applied sciences

### *Admission*

<sup>1</sup> 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.

<sup>2</sup> Admission is always subject to the acquisition of additional study achievements comprising at least 40 credits.

<sup>3</sup> The additional requirements to be fulfilled by candidates are structured in the following two parts.

### *Part 1: Standard additional requirements*

To fulfil Part 1 of the additional requirements at least 34 credits must be acquired by completing the following course units from the curriculum of the ETH Bachelor's degree programmes in Civil Engineering, Environmental Engineering, or Geomatic Engineering and Planning. Information on the content of these course units is published in the course catalogue of Department D-BAUG ([www.vvz.ethz.ch](http://www.vvz.ethz.ch)).

- Analysis II (7 credits)
- GIS [Geographic Information Systems]II (6 credits)
- Grundzüge des Rechts für Bauwissenschaften und Architektur [Basics of Law for Civil Engineering and Architecture] (2 credits)
- Lineare Algebra und Numerische Mathematik [Linear Algebra and Numerical Mathematics] (5 credits)
- Planung [Planning] (6 credits)
- Statistik und Wahrscheinlichkeitsrechnung [Statistics and Probability Calculus] (5 credits)
- Bahninfrastrukturen [Rail Infrastructures] (3 credits)

### *Part 2: Supplementary additional requirements*

To fulfil Part 2 of the additional requirements 6-25 credits must be acquired in areas of knowledge which depend on the background of the candidate; these are determined individually according to Parts 1-3 of the academic requirements (see Section 1.2.1).

<sup>4</sup> Admission is not possible if the total number of additional credits required to satisfy the academic prerequisites exceeds 60.

### *Entering the Master's degree programme*

<sup>5</sup> Candidates who have been granted admission may enter the Master's degree programme when they have completed the preceding Bachelor's degree programme.

### **3 Application and admission procedure**

<sup>1</sup> All interested parties – with the exception of matriculated ETH Zurich students from the Bachelor's degree programmes Architecture, Civil Engineering, Geomatic Engineering and Planning or Environmental Engineering – 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](http://www.admission.ethz.ch)).

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

<sup>3</sup> 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.

<sup>4</sup> The Rector makes the final decision regarding admission without additional requirements, admission with additional requirements, or rejection.

<sup>5</sup> The candidate receives a written admissions decision which includes relevant information concerning any additional admission requirements.

### **4 Fulfilling additional admission requirements**

#### **4.1 General regulations**

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> The deadlines and conditions for undergoing said performance assessments depend upon the background of the candidate (see Sections 4.2 and 4.3).

#### **4.2 Candidates with a university Bachelor's degree**

<sup>1</sup> Candidates holding a university Bachelor's degree must undertake all of the performance assessments pertaining to the additional admission requirements in the areas of basic knowledge and subject-specific knowledge (Section 1.2.1, Parts 1 and 2) 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.

<sup>2</sup> Additional requirements in the area of degree-specific knowledge (Section 1.2.1, Part 3) must be fulfilled at the latest before commencement of the Master's thesis.

<sup>3</sup> A pass grade in each individual performance assessment is required.

<sup>4</sup> A failed performance assessment may be repeated once.

### **4.3 Candidates with a Bachelor's degree from a Swiss university of applied sciences**

<sup>1</sup> Candidates holding a Bachelor's degree from a Swiss university of applied sciences must undertake all of the performance assessments pertaining to the additional admission requirements in the areas of basic knowledge and subject-specific knowledge (Section 1.2.1, Parts 1 and 2) 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.

<sup>2</sup> Additional requirements in the area of degree-specific knowledge (Section 1.2.1, Part 3) must be fulfilled at the latest before commencement of the Master's thesis.