

## Appendix 1

To the Programme Regulations 2020 of the  
Master's degree programme in Civil Engineering

29.10.2019 (Version: 07.04.2022)

*Applies to students who commence or re-enter the degree programme in Autumn  
Semester 2022 or later.*

***This English translation is for information purposes only. The German version is the legally binding document.***

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### Subject and scope

This appendix sets out the academic, language and performance prerequisites for and further details regarding admission to the Master's degree programme in Civil Engineering. It supplements the stipulations of the Admission Regulations of ETH Zurich<sup>1</sup> and the Directive on Admission to Master's degree programmes<sup>2</sup>.

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<sup>1</sup> SR 414.131.52

<sup>2</sup> [www.directives.ethz.ch](http://www.directives.ethz.ch)

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## 1 Profile of requirements

### *Policy*

For admission to the Master's degree programme in Civil Engineering (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 in Civil Engineering comprising at least 180 ECTS credits or an equivalent university degree in Civil Engineering
- b. a Bachelor's degree from a Swiss university of applied sciences<sup>3</sup> in Civil Engineering comprising at least 180 credits
- c. a university Bachelor's degree in a discipline other than Civil Engineering comprising at least 180 credits or an equivalent university degree or a Bachelor's degree from a Swiss university of applied sciences in a discipline other than Civil Engineering which – also with regard to any additional academic requirements within the given framework – satisfies the pertaining academic and performance prerequisites.

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<sup>3</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.

<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

<sup>1</sup> Attendance of the Master's degree programme in Civil Engineering presupposes basic knowledge and skills in the disciplines Mathematics, Mechanics, Computer Science and Civil Engineering which must in content, scope, quality and skill level be equivalent to those covered at ETH Zurich (discipline requirements profile).

<sup>2</sup> The **discipline requirements profile** comprises **165 credits** in total and includes the significant knowledge and skills covered in the ETH Bachelor's degree programme in Civil Engineering, including the corresponding methodological scientific thinking skills. Details are set out in Para. 5 below.

<sup>3</sup> If an applicant does not completely satisfy the academic prerequisites, admission may be subject to the acquisition of the missing knowledge and skills in the form of additional requirements. Completion of additional requirements is expressed in credits. For further details, see Section 4 below.

<sup>4</sup> Admission to the degree programme is not possible if the academic gaps in the candidate's background are too extensive. For further details, see the Sections below.

<sup>5</sup> The **discipline requirements profile** is structured in three parts set out below. Details regarding the content of the corresponding course units are published in the ETH Course Catalogue ([www.courses.ethz.ch](http://www.courses.ethz.ch)).

### Part 1: Basic knowledge and skills (70 credits)

Part 1 comprises 70 credits and covers basic knowledge from the disciplines Mathematics, Mechanics and Computer Science. The substance of the following course units is required:

- Analysis I (7 credits)
- Analysis II (7 credits)
- Analysis III (3 credits)
- Lineare Algebra [*Linear Algebra*] (5 credits)
- Statistik und Wahrscheinlichkeitsrechnung [*Statistics and Probability Theory*] (5 credits)
- Mechanik I: Kinematik und Statik [*Mechanics I: Kinematics and Statics*] (6 credits)
- Mechanik II: Deformierbare Körper [*Mechanics II: Deformable Solids and Structures*] (6 credits)
- Dynamics (6 credits)

- Physics (7 credits)
- Chemie für Bauingenieure [*Chemistry for Civil Engineers*] (3 credits)
- Programming for Engineers (4 credits)
- Digital Engineering (3 credits)
- Machine Learning (4 credits)
- Scientific Computing (4 credits)

## **Part 2: Subject-specific knowledge and skills (84 credits)**

Part 2 comprises 84 credits and covers subject-specific knowledge and skills primarily related to the area of Civil Engineering. The substance of the following course units is required:

- Bauverfahren [*Construction Methods*] (5 credits)
- Geology and Petrography (4 credits)
- Bodenmechanik [*Soil Mechanics*] (5 credits)
- Grundbau [*Geotechnical Engineering*] (5 credits)
- Fels- und Untertagbau [*Rock Mechanics and Tunnelling*] (6 credits)
- Baustatik I [*Structural Analysis I*] (5 credits)
- Baustatik II [*Structural Analysis II*] (4 credits)
- Stahlbau I [*Steel Structures I*] (5 credits)
- Stahlbau II [*Steel Structures II*] (4 credits)
- Stahlbeton I [*Structural Concrete I*] (5 credits)
- Stahlbeton II [*Structural Concrete II*] (5 credits)
- Verkehrsplanung [*Transport Planning*] (3 credits)
- Public Transport and Railways (3 credits)
- Road Transport Systems (3 credits)
- Hydraulik (5 credits)
- Hydrologie (3 credits)
- Wasserbau (5 credits)
- Werkstoffe im Bauwesen I (5 credits)
- Werkstoffe im Bauwesen II (4 credits)

## **Part 3: Degree-specific knowledge (11 credits)**

Part 3 comprises 11 credits and covers knowledge from various areas important for the Master's degree:

- Geodätische Messtechnik GZ [*Geodetic Metrology Fundamentals*] (6 credits)
- Systems Engineering (3 credits)
- Privates Baurecht [*Privat Construction Law*] (2 credits)

### 1.3 Language prerequisites

<sup>1</sup> The teaching language of the degree programme is German.

<sup>2</sup> For admission to the degree programme, proof of sufficient knowledge of German (level C1<sup>4</sup>) must be provided.

<sup>3</sup> The required language certificates must be submitted by the application deadline. The ETH Zurich publishes a list of the language certificates accepted.

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

### 2.1 Specific stipulations for admission to the degree programme

#### 2.1.1 Candidates with a Bachelor's degree in Civil Engineering from ETH Zurich

##### *Unconditional admission*

The following persons are guaranteed unconditional admission to the degree programme:

- a. Holders of a Bachelor's degree in Civil Engineering from ETH Zurich
- b. Students enrolled in the ETH Bachelor's degree programme in Civil Engineering

#### 2.1.2 Candidates with a Bachelor's degree in Civil Engineering from another Swiss university or from an IDEA-League partner university

##### *Unconditional admission*

<sup>1</sup> Unconditional admission to the degree programme is guaranteed for persons holding a Bachelor's degree or equivalent qualification in Civil Engineering from

- a. another Swiss university, or
- b. an IDEA-League partner university

<sup>2</sup> Admission is subject to fulfilment of the language prerequisites set out in section 1.3 above.

#### 2.1.3 Candidates with a Bachelor's degree in Civil Engineering from a university outside Switzerland

<sup>1</sup> Holders of a Bachelor's degree or the equivalent in Civil Engineering from a university outside Switzerland must satisfy all of the academic and language prerequisites listed in Section 1.2 and 1.3 above for admission to the degree programme.

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<sup>4</sup> The required language level is measured according to the Common European Framework of Reference for Languages scale (CEFR)

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

<sup>3</sup> Admission is not possible if any of the following apply

- a. the language prerequisites are not satisfied
- b. the content, scope, quality and skill level of the degree are not equivalent to those at ETH Zurich
- c. the number of additional credits required to satisfy the academic prerequisites (listed in Section 1.2 above) exceeds 30 credits in total.

#### **2.1.4 Candidates with a Bachelor's degree in Civil Engineering from a Swiss university of applied sciences**

<sup>1</sup> Holders of a Bachelor's degree in Civil Engineering from a Swiss university of applied sciences may be admitted, if they can satisfy all the following prerequisites

- a. the academic requirements are satisfied within the given framework
- b. the language prerequisites are satisfied
- c. 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])<sup>5</sup>

<sup>2</sup> Admission is always subject to the compensation of missing academic and methodological knowledge with 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 standard additional requirements 17 credits from the following course units must be acquired. Details regarding the content of these course units, which belong to the curriculum of the ETH Bachelor's degree programme in Civil Engineering, are published in the Course Catalogue ([www.vvz.ethz.ch](http://www.vvz.ethz.ch)).

- Lineare Algebra [*Linear Algebra*] (5 credits)
- Mechanik II [*Mechanics II*] (6 credits)
- Mechanik III [*Mechanics III*] (6 credits)

##### *Part 2: Supplementary additional requirements*

To fulfil Part 2 of the standard additional requirements 23 credits must be acquired from course units which are determined according to the candidate's chosen specialisation.

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<sup>5</sup> The method of computation of the final grade is stipulated in the Directive on Admission to Master's Degree Programmes.

<sup>4</sup> Admission is not possible if any of the following apply

- a. the language or performance prerequisites are not satisfied
- b. the number of additional credits required to fulfil the academic prerequisites exceeds 60

### **2.1.5 Candidates with a university Bachelor's degree in a discipline other than Civil Engineering**

<sup>1</sup> Holders of a university Bachelor's degree or the equivalent in a discipline other than Civil Engineering may be admitted to the degree programme if they can satisfy all of the following prerequisites

- a. the academic requirements set out in Section 1.2 above are satisfied within the given framework
- b. the language prerequisites set out in Section 1.3 above are satisfied
- c. a very good academic performance during the Bachelor's degree studies

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

<sup>3</sup> Admission is not possible if any of the following apply

- a. the language or performance prerequisites are not satisfied
- b. the content, scope, quality and skill level of the degree are not equivalent to those at ETH Zurich
- c. the number of additional credits required to satisfy the academic prerequisites exceeds 30 credits in total.

### **2.1.6 Candidates with a Bachelor's degree from a Swiss university of applied sciences in a discipline other than Civil Engineering**

<sup>1</sup> Holders of a Bachelor's degree from a Swiss university of applied sciences in a discipline other than Civil Engineering may be admitted to the degree programme if they can satisfy all of the following prerequisites

- a. the academic requirements set out in Section 1.2 above are satisfied within the given framework
- b. the language prerequisites set out in Section 1.3 above are satisfied
- c. a very good academic performance during the Bachelor's degree studies

<sup>2</sup> Admission is always subject to the compensation of missing academic and methodological knowledge with additional study achievements comprising at least 40 credits.

<sup>3</sup> Admission is not possible if any of the following apply

- a. the language or performance prerequisites are not satisfied
- b. the number of additional credits required to fulfil the academic prerequisites exceeds 60

## 2.2 Specific stipulations for entering the degree programme

### 2.2.1<sup>6</sup> Candidates with an ETH Bachelor's degree in Civil Engineering

<sup>1</sup> Students of the ETH Zurich Bachelor's degree programme in Civil Engineering may enrol in the degree programme directly via [www.mystudies.ethz.ch](http://www.mystudies.ethz.ch). The admission procedure outlined in Section 3 is waived. Further details:

- a. The normal ETH enrolment dates and deadlines apply.
- b. Enrolment is possible as soon as a maximum of 60 credits towards the Bachelor's degree are pending. Listed below are the course unit categories where pending credits are admissible, and their permitted number. (Credits required for the Bachelor's degree in all those course unit categories not listed must have already been acquired.)

<b>Category</b>	<b>Permitted number of missing credits</b>
Core subjects	52 credits
Science in Perspective	4 credits
Bachelor's thesis	8 credits

- 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.

### 2.2.2 Candidates with an ETH Bachelor's degree in a discipline other than Civil Engineering

The following stipulations regarding entry to the Master's degree programme apply to students from an ETH Zurich Bachelor's degree programme (other than Civil Engineering) who have been granted admission:

- a. The normal ETH enrolment dates and deadlines apply.
- b. They can 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.<sup>7</sup>
- 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.

### 2.2.3 Candidates with a Bachelor's degree from another university

Non-ETH graduates who have been granted admission may only begin the degree programme when they have completed the previous (Bachelor's) degree programme.

<sup>6</sup> Changes pursuant to the decision of the Executive Board by 07.04.2022, regarding the Programme Regulations for the Bachelor's degree programme in Civil Engineering 2022 (here: section 2.2.1 – entering the degree programme, missing credits). Applies to students who study under the Programme Regulations 2014 and 2022 of the Bachelor's degree programme in Civil Engineering.

<sup>7</sup> The permitted number of missing credits is set out in the Programme Regulations of the respective consecutive Master's degree programme (e.g., BSc Physics → MSc Physics).



### 3 Application and admission procedure

<sup>1</sup> All candidates – with the exception of matriculated ETH Zurich students from the Bachelor's degree programme in Civil Engineering – must submit an application for admission to the degree programme. The binding specifications for application, in particular the documents required and the submission dates/deadlines, 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> 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.

<sup>4</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>5</sup> On the request of the Director of Studies the Rector makes the final decision regarding admission or rejection.

<sup>6</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 skills before or during the Master's degree 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 she/he will be regarded as having failed the 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 below).

## **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 by the end of the first year of the Master's degree programme at the latest. All additional requirements, including any assessment repetitions, must be fulfilled within 18 months of the start of the Master's degree programme at the latest.

<sup>2</sup> A pass grade in each individual performance assessment is required.

<sup>3</sup> A failed performance assessment may only 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 by the end of the first year of the Master's degree programme at the latest. All additional requirements, including any assessment repetitions, must be fulfilled within two years of the start of the Master's degree programme at the latest.

<sup>2</sup> Session examinations may be combined in examination blocks. The examinations belonging to one examination block must always be undertaken during the same examination session.

<sup>3</sup> A pass grade in the examination block is achieved if the average of the individual grades is at least a 4.

<sup>4</sup> A failed performance assessment or a failed examination block may be repeated once. Repeating an examination block entails repeating all of the examinations belonging to it.