

## Appendix 1

To the Programme Regulations 2023 of the  
Master's degree programme in Materials Science and Engineering

05. 07. 2022

*Applies to students who commence or re-enter the degree programme in Autumn Semester 2023 or later.*

*Students who entered or re-entered the degree programme up to and including Spring Semester 2023 are governed by the previous pertaining stipulations.*

***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 and language prerequisites for and further details regarding admission to the Master's degree programme in Materials Science and Engineering. It supplements the stipulations of the ETH Zurich Admissions Ordinance and the Directive on Admission to Master's degree programmes.

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### Contents

- 1 Profile of requirements**
  - 1.1 Degree qualifications
  - 1.2 Academic prerequisites
  - 1.3 Language prerequisites
  
- 2 Specific stipulations for persons holding a Bachelor's degree in Materials Science and Engineering**
  - 2.1 Bachelor's degree in Materials Science and Engineering from ETH Zurich
  - 2.2 Bachelor's degree in Materials Science and Engineering from EPF Lausanne
  - 2.3 Bachelor's degree in Materials Science and Engineering from another Swiss university
  - 2.4 Bachelor's degree in Materials Science and Engineering from a university outside Switzerland
  
- 3 Specific stipulations for persons holding a Bachelor's degree in a discipline other than Materials Science and Engineering**
  - 3.1 University Bachelor's degree
  - 3.2 Bachelor's degree from a Swiss university of applied sciences
  
- 4 Entering the Master's degree programme**

- 4.1 Bachelor's degree from ETH Zurich
- 4.2 Bachelor's degree from another university

## 5 Application and admission procedure

## 6 Fulfilling additional admission requirements

- 6.1 General regulations
- 6.2 Candidates with a university Bachelor's degree
- 6.3 Candidates with a Bachelor's degree from a Swiss university of applied sciences

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## 1 Profile of requirements

### *Policy*

For admission to the Master's degree programme in Materials Science and 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 Materials Science and Engineering comprising at least 180 ECTS credits or an equivalent university degree in Materials Science and Engineering
- b. A Bachelor's degree in Materials Science and Engineering or a discipline of the Natural Sciences or Engineering from a Swiss university of applied sciences<sup>1</sup> comprising at least 180 credits
- c. A university Bachelor's degree comprising at least 180 ECTS or an equivalent university degree in a discipline other than Materials Science and Engineering which – provided that any pertaining additional requirements can be completed within the set framework – satisfies the academic prerequisites listed in Section 1.2. Said disciplines include, in particular (listed alphabetically):
  - Chemistry
  - Engineering Sciences, such as Biosciences or Chemical, Electrical or Mechanical Engineering
  - Interdisciplinary Natural Sciences
  - Nanotechnology
  - Physics

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<sup>1</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, and will determine 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 Materials Science and Engineering presupposes basic knowledge and skills in Mathematics, Natural Sciences and Materials Science and Engineering which must in content, scope, quality and skill level be equivalent to those covered in the Bachelor's degree programme in Materials Science and Engineering at ETH Zurich (discipline requirements profile).

<sup>2</sup> The **discipline requirements profile** detailed below comprises **138 ECTS credits** in total and is based on knowledge and skills covered in the ETH Bachelor's degree programme in Materials Science and Engineering. This includes training in the relevant methodological scientific thinking.

<sup>3</sup> If a candidate 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 (admission with additional requirements). Completion of additional requirements is expressed in credits.

<sup>4</sup> The **discipline requirements profile** is structured in the three parts set out below and comprises course units from the ETH Bachelor's degree programme in Materials Science and Engineering. Information on the content of the course units is published in the ETH Course Catalogue ([www.vvz.ethz.ch](http://www.vvz.ethz.ch)).

### Part 1: Basic knowledge and skills (51 credits)

Part 1 comprises 51 credits and covers basic knowledge and skills in Mathematics and the Natural Sciences. The substance of the following course units is required:

- Mathematics (analysis, linear algebra and stochastics)
- Physics (mechanics, electromagnetism, quantum mechanics and solid-state physics)
- Chemistry (basics of inorganic and organic chemistry)

### Part 2: Subject-specific knowledge and skills (53 credits)

Part 2 comprises 53 credits and covers basic knowledge and skills in Materials Science and Engineering. The substance of the following course units is required:

- Thermodynamics
- Polymer synthesis and synthesis of inorganic powders
- Materials characterisation
- Mechanical, optical, electronic and magnetic properties

- Processing, selection and design of metals, ceramics, polymers, semiconductors and composites

### Part 3: Practical knowledge and skills (34 credits)

Part 3 comprises 34 credits and covers basic practical knowledge and skills in Materials Science and Engineering. This includes:

- Programming and basics of simulation techniques
- Laboratory work and project experience

## **1.3 Language prerequisites**

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

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

<sup>3</sup> 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).

<sup>4</sup> The required language certificate(s) must be submitted at the latest by the last day of the application deadline. A list of recognised language certificates is published on the ETH Zurich website.

## **2 Specific stipulations for persons holding a Bachelor's degree in Materials Science and Engineering**

### **2.1 Bachelor's degree in Materials Science and Engineering from ETH Zurich**

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

- a. Holders of a Bachelor's degree in Materials Science and Engineering from ETH Zurich
- b. Students enrolled in this ETH Zurich Bachelor's degree programme

### **2.2 Bachelor's degree in Materials Science and Engineering from EPF Lausanne**

<sup>1</sup> Unconditional admission to the degree programme is guaranteed for persons holding a Bachelor's degree in Materials Science and Engineering from EPF Lausanne.

<sup>2</sup> Admission is subject to fulfilment of the language prerequisites set out in Section 1.3 of this Appendix.

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<sup>2</sup> The required language level is measured according to the Common European Framework of Reference for Languages scale (CEFR).

### **2.3 Bachelor's degree in Materials Science and Engineering from another Swiss university**

<sup>1</sup> Admission to the degree programme is guaranteed for persons holding a Bachelor's degree in Materials Science and Engineering from a Swiss university other than ETH Zurich.

<sup>2</sup> Admission is subject to fulfilment of the language prerequisites set out in Section 1.3 of this Appendix.

<sup>3</sup> Admission may be subject to additional requirements.

<sup>4</sup> Admission is not possible if

- a. the language prerequisites are not satisfied;
- b. the number of additional credits required to satisfy the academic prerequisites exceeds
  1. 30 credits in total; or
  2. more than 15 credits from Part 1 of the discipline requirements profile.

### **2.4 Bachelor's degree in Materials Science and Engineering from a university outside Switzerland**

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

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

<sup>3</sup> Admission is not possible if

- 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 exceeds
  1. 30 credits in total; or
  2. more than 15 credits from Part 1 of the discipline requirements profile.

### **3 Specific stipulations for persons holding a Bachelor's degree in a discipline other than Materials Science and Engineering**

#### **3.1 University Bachelor's degree**

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

- a. They fulfil the academic requirements set out in Section 1.2 of this Appendix.
- b. They satisfy the language prerequisites set out in Section 1.3 of this Appendix.
- c. They produced very good academic achievements during Bachelor's degree studies.

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

<sup>3</sup> Admission is not possible if

- 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 listed in Section 1.2 exceeds
  1. 30 credits in total; or
  2. more than 15 credits from Part 1 of the discipline requirements profile.

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

<sup>1</sup> If they can fulfil the academic and language requirements listed in Section 1 of this Appendix within the given framework, and if they produced very good academic achievements during their Bachelor's degree studies, persons holding a Bachelor's degree from a Swiss university of applied sciences in a field of study other than Materials Science and Engineering may also be admitted to the programme.

<sup>2</sup> Admission is always subject to the compensation of missing academic and methodological knowledge and skills with additional study achievements comprising at least 40 ECTS credits. The additional requirements include course units from Parts 1 and 2 of the academic prerequisites.

<sup>3</sup> Admission is not possible if

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

## 4 Entering the Master's degree programme

### 4.1 Bachelor's degree from ETH Zurich

<sup>1</sup> The following stipulations apply to all Bachelor's degree students enrolled at ETH Zurich who transfer to the ETH Zurich Master's degree programme:

- 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>2</sup> Students of the Bachelor's degree programme in Materials Science and Engineering already matriculated at ETH Zurich may enrol directly in the degree programme via [www.mystudies.ethz.ch](http://www.mystudies.ethz.ch) as soon as the number of required credits pending towards the Bachelor's degree totals 30 or less.

### 4.2 Bachelor's degree from another university

Candidates with a positive admission decision can enter the programme if they have successfully completed the previous (Bachelor's) degree programme.

## 5 Application and admission procedure

<sup>1</sup> All candidates – with the exception of students matriculated at ETH Zurich in the Bachelor's degree programme in Materials Science and Engineering – must submit an application for admission to the degree programme. The specifications for application, in particular the documents required and the dates and 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 at a time when 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;
- b. the respective 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 the relevant information concerning any additional admission requirements.

## **6 Fulfilling additional admission requirements**

### **6.1 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 independent 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 they 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.

### **6.2 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 repetitions of performance assessments, 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.

### **6.3 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 repetitions of performance assessments, must be fulfilled within two years of the start of the Master's degree programme at the latest.

<sup>2</sup> Performance assessments may be combined in examination blocks. A pass grade in the examination block is achieved if the average of the individual grades is at least a 4.

<sup>3</sup> A failed performance assessment or a failed examination block may be repeated only once. The repetition of an examination block entails repeating all of the examinations belonging to it.