

## Appendix

To the Programme Regulations 2005 of the  
Master's Degree Programme in Materials Science

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 before Autumn Semester 2011 the stipulations of the previous Appendix 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 Materials Science. 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 Materials Science (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 comprising at least 180 ECTS<sup>(1)</sup> credits or an equivalent university degree in Materials Science
- b. a university Bachelor's degree in 180 ECTS credits, an equivalent university degree, or a Bachelor's degree from a Swiss university of applied sciences comprising at least 180 ECTS<sup>2</sup> credits in a discipline of the Natural Sciences or Engineering whose content covers the academic prerequisites listed in 1.2. Said disciplines include, in particular (listed alphabetically):
  - Biology, if the degree involved one of the following majors: Biochemistry, Biotechnology, Microbiology, Molecular Biology, Cell Biology
  - Biotechnology, Bioengineering
  - Chemistry
  - Chemical Engineering
  - Electrical Engineering (and Information Technology)
  - Interdisciplinary Natural Sciences
  - Mechanical Engineering
  - Physics

<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.

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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.

## 1.2 Academic prerequisites

### 1.2.1 Knowledge and competences

<sup>1</sup> Attendance of the Master's degree programme in Materials Science presupposes basic knowledge and competences in Mathematics and the Natural Sciences which are in content, scope and quality equivalent to those covered in the ETH Bachelor's degree programme in Materials Science (discipline requirements profile).

<sup>2</sup> The **discipline requirements profile** comprises **133 ECTS credits** in total and is based on knowledge covered in the ETH Bachelor's degree programme in Materials Science. This includes training in the relevant methodological scientific thinking.

<sup>3</sup> The discipline requirements profile is structured in three parts, as follows. Details regarding the content of these course units are published in the course catalogue ([www.vvz.ethz.ch](http://www.vvz.ethz.ch)).

#### Part 1: Basic knowledge and competences

Part 1 comprises 64 ECTS credits and covers basic knowledge in Mathematics and the Natural Sciences.

The substance of the following course units from the ETH Bachelor's degree programme in Materials Science is required:

- Analysis I to III (19 credits)
- Lineare Algebra [Linear Algebra] (4 credits)
- Stochastik [Stochastics] (4 credits)
- Numerische Methoden [Numerical Methods] (4 credits)
- Physik [Physics] I and II (12 credits)
- Mechanik [Mechanics] (5 credits)
- Chemie [Chemistry] I to III (12 credits)
- Biologie [Biology] I and II (4 credits)

#### Part 2: Subject-specific knowledge and competences

Part 2 comprises 46 ECTS credits and covers basic knowledge in Materials Science.

The substance of the following course units from the ETH Bachelor's degree programme in Materials Science is required:

- Materialwissenschaft [Materials Science] I and II (6 credits)
- Metalle [Metals] I and II (6 credits)
- Keramik [Ceramics] I and II (6 credits)
- Polymere [Polymers] I and II (6 credits)
- Methoden der Materialcharakterisierung [Methods of Materials Characterisation] (3 credits)
- Grundlagen der Materialphysik [Basic Principles of Materials Physics] A (6 credits)
- Grundlagen der Materialphysik B (5 credits)
- Materialphysik (2 credits)
- Verbundwerkstoffe [Advanced Composites] (3 credits)
- Molecular Tools to Design Materials for Biology and Medicine (3 credits)

### **Part 3: Practical knowledge and competences**

Part 3 comprises 23 ECTS credits and covers knowledge and competences in Materials Science laboratory work.

The substance of the following course units from the ETH Bachelor's degree programme in Materials Science is required:

- Practicals I to V (23 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 5).

<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 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>3</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 (see Section 2.2.4, Subsection 2), also supply proof of sufficient knowledge of German (level C1).

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

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

#### *Unconditional admission*

<sup>1</sup> Holders of a Bachelor's degree in Materials Science from ETH Zurich are unconditionally admitted to the degree programme, provided that the degree option A in 'Materials Science' was completed for the Bachelor's degree.

<sup>2</sup> If the degree option B in 'Materials Science with a Major in Management' was completed for the Bachelor's degree, unconditional admission to the Master's degree programme is only guaranteed if the final Bachelor's degree grade is at least 4.5. If the final grade lies under 4.5 admission is subject to the following additional requirement: 'Basic Subjects Part 3' of degree option A of the Bachelor's degree programme must be completed and pass grades in the corresponding performance assessments must be achieved.

#### *Registration*

<sup>3</sup> Students of the Bachelor's degree programme in Materials Science 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 4 is dispensed with.

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

<sup>4</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.

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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: *The 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>5</sup> Students of the ETH Bachelor's degree programme in Materials Science may enrol directly in the Master's degree programme, as long as only a maximum of 30 credits towards the Bachelor's degree are pending.

## **2.2 Other Bachelor's degrees in Materials Science**

### **2.2.1 General regulations**

#### *Application*

<sup>1</sup> Interested parties holding a Bachelor's degree in Materials Science 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 4.

#### *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.

### **2.2.2 Bachelor's degree in Materials Science from EPF Lausanne**

#### *Unconditional admission*

<sup>1</sup> Holders of a Bachelor's degree in Materials Science from EPF Lausanne are unconditionally admitted to the degree programme.

<sup>2</sup> Admission is subject to fulfilment of the language prerequisites listed in (1.3).

### **2.3.2 Bachelor's degree in Materials Science 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
- 15 credits from Part 1 of the discipline requirements profile (see Section 1.2.1).

### **3 Specific stipulations for persons holding Bachelor's degrees in other disciplines**

#### **3.1 General regulations**

##### *Application*

Interested parties who hold a qualifying Bachelor's degree in a discipline other than Materials Science should apply for the Master's degree programme via the ETH Zurich Admissions Office, and are subject to the admissions procedure set out in Section 4.

#### **3.2 Bachelor's degree from ETH Zurich**

##### *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 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
- 15 credits from Part 1 of the discipline requirements profile (see Section 1.2.1).

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

<sup>4</sup> For all Bachelor's degree students who are already matriculated at ETH Zurich and who progress to an 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>5</sup> Students from an ETH Bachelor's degree programme who have been granted admission 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>

#### **3.3 Bachelor's degree from another university**

##### *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.

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<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).

<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
- 15 credits from Part 1 of the discipline requirements profile (see Section 1.2.1).

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

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

### **3.4 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 the missing academic and methodological knowledge and competences in the form of additional studies comprising at least 40 and at most 60 credits from Parts 1 and 2 of the academic prerequisites (see Section 1.2.1).

<sup>3</sup> Admission is not possible if the number of additional credits required to satisfy the academic prerequisites exceeds 60.

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

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

## **4 Application and admission procedure**

<sup>1</sup> All interested parties – with the exception of matriculated ETH Zurich students from the Bachelor's degree programme in Materials Science – 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.

## **5 Fulfilling additional admission requirements**

### **5.1 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 5.2 and 5.3).

### **5.2 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 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> A pass grade in each individual performance assessment is required.

<sup>3</sup> A failed performance assessment may be repeated once.

### **5.3 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 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> 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.

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