Appendix

To the Programme Regulations 2012 of the Master’s Degree Programme in Materials Science

6 March 2012 (Version: 1 September 2019)

Applies to students who commence or recommence the degree programme in Autumn Semester 2020 or later. For those entering or re-entering the programme before Autumn Semester 2020 the previous stipulations 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 Materials Science. It supplements the stipulations of the Admission Regulations of ETH Zurich and the Directive on Admission to Master’s Degree Programmes.

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
   2.1 Bachelor’s degree in Materials Science from ETH Zurich or matriculated status in the ETH Zurich Bachelor’s degree programme in Materials Science
   2.2 Bachelor’s degree in Materials Science from EPF Lausanne
   2.3 Bachelor’s degree in Materials Science from other universities

3 Specific stipulations for persons holding a Bachelor’s degree in a discipline other than Materials Science
   3.1 University Bachelor’s degree or matriculated status in an ETH Zurich Bachelor’s degree programme
   3.2 Bachelor’s degree from a Swiss university of applied sciences
   3.3 Entering the Master’s degree programme

4 Application and admission procedure

5 Fulfilling additional admission requirements
   5.1 General regulations
   5.2 Candidates with a university Bachelor’s degree
   5.3 Candidates with a Bachelor’s degree from a Swiss university of applied sciences
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

1 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\(^1\) 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\(^2\) in a discipline of the Natural Sciences or Engineering whose content – supplemented by any additional subject requirements in the given framework – covers the academic prerequisites listed in 1.2 of this Appendix. Said disciplines include, in particular (listed alphabetically):

- Biology, if the degree involved one of the following concentrations: Biochemistry, Biotechnology, Microbiology, Molecular Biology, Cell Biology
- Biotechnology, Bioengineering
- Chemistry
- Chemical Engineering
- Electrical Engineering (and Information Technology)
- Interdisciplinary Natural Sciences
- Mechanical Engineering
- Physics

2 Holders of a university Bachelor's degree may only enter a Master's degree programme at ETH Zurich if said degree qualifies them, without additional requirements, for admission to the desired Master's degree programme within the university system which awarded the Bachelor’s degree. The Rector of ETH Zurich may also demand written proof of this, and determines whether said proof should come from the original university or from a university in the country where the Bachelor's degree was acquired.

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\(^1\) ECTS: European Credit Transfer System. Credits describe the average time expended to achieve a learning goal. One credit corresponds to 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.
1.2 Academic prerequisites

1 Attendance of the Master’s degree programme in Materials Science presupposes basic knowledge and skills 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).

2 The discipline requirements profile comprises 126 credits in total and is based on knowledge and skills covered in the ETH Bachelor’s degree programme in Materials Science. This includes training in the relevant methodological scientific thinking.

3 If the academic prerequisites are not completely satisfied admission may be granted subject to the acquisition of the missing knowledge and skills, whose scope is expressed in the form of additional credits. Details regarding fulfilment of additional requirements are provided in Section 5 below.

4 Admission to the degree programme is not possible if the gaps in the applicant’s academic knowledge are too extensive. Details are provided in Sections 2.3 and 3.1 (persons with university degrees) and 3.2 (persons with degrees from universities of applied sciences) below.

Discipline requirements profile

The discipline requirements profile is structured in three parts. The substance of the course units from the ETH Bachelor’s degree programme in Materials Science listed below is required. Details regarding the content of these course units are published in the Course Catalogue (www.vvz.ethz.ch).

Part 1: Basic knowledge and skills (60 credits)

Part 1 comprises 6 credits and covers basic knowledge in Mathematics and the Natural Sciences. The substance of the following course units 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)
Part 2: Subject-specific knowledge and competences (43 credits)
Part 2 comprises 43 credits and covers basic knowledge in Materials Science. The substance of the following course units 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)

Part 3: Practical knowledge and skills (23 credits)
Part 3 comprises 23 credits and covers knowledge and competences in Materials Science laboratory work. The substance of the following course units is required:

- Practicals I to V (23 credits)

1.3 Language prerequisites

1 The teaching language of the degree programme is English.

2 For admission to the degree programme, proof of sufficient knowledge of English (Level C1)\(^3\) must be provided.

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).

4 The required language certificates must be submitted by the application deadline. The ETH Zurich publishes a list of the language certificates accepted.

\(^3\) The required language level is measured according to the Common European Framework of Reference for Languages scale (CEFR)
2 Specific stipulations for persons holding a Bachelor's degree in Materials Science

2.1 Bachelor's degree in Materials Science from ETH Zurich or matriculated status in the ETH Zurich Bachelor's degree programme in Materials Science

Unconditional admission
1 Holders of a Bachelor's degree in Materials Science from ETH Zurich are unconditionally admitted to the degree programme.

Entering the Master's degree programme
2 Students of the Bachelor's degree programme in Materials Science should enrol in the degree programme directly via www.mystudies.ethz.ch. The admission procedure outlined in Section 4 is dispensed with. The following details apply:
   a. The normal ETH enrolment dates and deadlines apply.
   b. Enrolment is possible as soon as the remaining number of credits essential for the Bachelor's degree totals 30.
   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 Materials Science from EPF Lausanne

Admission without additional requirements
1 Holders of a Bachelor's degree in Materials Science from EPF Lausanne are unconditionally admitted to the degree programme.

2 Admission is subject to fulfilment of the language prerequisites listed in Section 1.3.

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

2.3 Bachelor's degree in Materials Science from other universities

1 Holders of a Bachelor's degree or the equivalent in Materials Science from another university must fulfil all the academic and language prerequisites listed in Section 1 above for admission to the degree programme.

2 Admission may be subject to additional requirements.
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
   - 30 credits in total, or
   - 15 credits from Part 1 of the discipline requirements profile (see Section 1.2).

Entering the Master’s degree programme

Candidates who have been granted admission may enter the Master’s degree programme when they have completed the preceding Bachelor’s degree programme.

3 Specific stipulations for persons holding a Bachelor’s degree in a discipline other than Materials Science

3.1 University Bachelor’s degree or matriculated status in an ETH Zurich Bachelor’s degree programme

The following persons may be admitted to the Master’s degree programme if they can satisfy the academic and language prerequisites listed in Section 1 above within the given framework and if they showed very good academic performance during the Bachelor’s degree programme:

a. Holders of a university Bachelor’s degree or the equivalent in a discipline other than Materials Science

b. Persons matriculated in a Bachelor’s degree programme at ETH Zurich in a discipline other than Materials Science

Admission may be subject to additional requirements.

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
   - 30 credits in total, or
   - 15 credits from Part 1 of the discipline requirements profile (see Section 1.2).

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

If they can satisfy the academic and language prerequisites listed in Section 1 above within the given framework and if they showed very good academic performance during
the Bachelor’s degree programme, holders of a Bachelor’s degree in a discipline other than Materials Science from a Swiss university of applied sciences may also be admitted to the Master’s degree programme.

2 Admission is always subject to the acquisition of the missing academic and methodological knowledge in the form of additional studies comprising at least 40 credits from Parts 1 and 2 of the academic prerequisites.

3 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.

3.3 Entering the Master’s degree programme

1 Students from an ETH Zurich Bachelor’s degree programme (apart from Materials Science) who have been granted admission are subject to the following entry requirements:
   a. They may 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.\(^4\)
   b. The normal ETH enrolment dates and deadlines apply.
   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 Call other candidates who have been granted admission can only enter the programme when they have completed the preceding Bachelor’s degree programme.

4 Application and admission procedure

1 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).

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 not submitted by the deadline or are incomplete; and/or
   b. any applicable fees have not been paid.

\(^4\) 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).
3 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.

4 On the basis of the Director of Studies’ application the Rector makes the final decision regarding admission without additional requirements, admission with additional requirements, or rejection.

5 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

1 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 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 degree 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).

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 be repeated once.

4 The student may only begin work on the Master’s thesis when all additional requirements have been 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 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.

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 be repeated once. Repeating an examination block entails repeating all of the performance assessments belonging to it.

4 The student may only begin work on the Master’s thesis when all additional requirements have been fulfilled.