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# **Study Regulations**

**for the Joint Degree Master's Program „Quantitative Finance“  
at the Faculty of Economics, Business Administration and Information Technology of the  
University of Zurich and the Department of Mathematics of the ETH Zurich**

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All references to paragraphs of the FR MScQF refer to this document.

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# 1 Overview of the Study Program

The Master of Science in Quantitative Finance provides students with an advanced academic education and the ability to undertake independent academic work.

The study program offers the chance to specialize in the basic economic principles of finance as well as the application of probability theory, stochastic theory and numerical analysis in finance.

All performance assessments will be graded throughout the semester in accordance with the European Credit Transfer System (ECTS). This system serves both the recording and accumulation of the workload undertaken at the University of Zurich and the ETH Zurich as well as the transfer of study achievements within the scope of national and international student mobility programs.

Any subject matter is integrated into learning units that are coherently structured in terms of contents and time, what are termed modules<sup>1</sup>. A number of credits are awarded for every module successfully completed; these correspond to the average workload required for the successful completion of the module. The scope of the module is designed in such a way that full-time students should be able to acquire an average of 60 credits per year. One credit corresponds to a workload of approximately 30 hours.

Entitlement to the award of the final degree is gained by obtaining the required number of credits on the basis of the successful completion of modules and through adherence to the conditions set down in the Study Regulations. To pass a module (i.e. successfully complete it) an explicit performance assessment must be completed; the form these take can vary (for example: written or oral examinations, presentations, written assignments etc.). Credits will not be awarded on the basis of mere attendance.

Modules from the Master's program can be counted towards the Master's degree provided these have been completed within the previous five years. A student who has made more than six unsuccessful attempts will be excluded from pursuing further study.

The Master's program is divided into compulsory and elective modules.

The subject matter of each module belongs either to the area of "Economic Theory for Finance" (EF) or the area of "Mathematical Methods for Finance".

A minimum of 90 credits must be acquired. To achieve this 33 credits must be obtained through the completion of compulsory programs. Of these at least 9 credits must come from each of the areas EF and MF. In addition to this, a further 27 credits must be gained from elective courses, of which at least 9 credits must come from each of the areas EF and MF. If a student gains more than 33 credits from

<sup>1</sup> The ETH Zurich uses the term 'learning unit' in place of 'module'.

the compulsory area, the additional credits can be transferred to the elective area. Finally, students are required to submit a Master's thesis of sufficient scope to gain 30 credits.

A maximum of 15 credits at Master's level can be acquired at other universities e.g. as part of a semester spent abroad or due to a change of place of study (see section 4.5).

Once 90 credits have been gained in compliance with the conditions set down in these Study Regulations and the Framework Regulations, the Faculty of Economics, Business Administration and Information Technology (WWF) of the University of Zurich and the Department of Mathematics of the ETH Zurich will jointly award the academic title: Master of Science UZH ETH in Quantitative Finance. Master of Science is abbreviated with 'M.Sc'.

Students must be matriculated at the University of Zurich for all the semesters in which they make use of the services offered by the University (for example, attend courses or take examinations).

## 2 The credit system

### 2.1 Overview

The European Credit Transfer System is used for the grading of all performance assessments. This system serves both the recording and accumulation of the achievements undertaken at the University of Zurich and the ETH Zurich as well as the transfer of study achievements within the scope of national and international student mobility programs.

The subject matter is integrated into learning units that are coherently structured in terms of contents and time, what are termed modules. A number of credits are awarded for every module successfully completed; these correspond to the average workload required for the successful completion of the module. Entitlement to the award of the final degree is gained by obtaining the requisite number of credits within a period of five years on the basis of the successful completion of modules and through adherence to the conditions set down in the Study Regulations.

To pass a module (i.e. successfully complete it) an explicit performance assessment must be completed; the form these take can vary (for example: written or oral examinations, presentations, written assignments etc.). Credits will not be awarded on the basis of mere attendance. Either all the credits for a particular module will be awarded or none at all.

### 2.2 Modules and courses

The majority of modules correspond to courses offered by lecturers in a particular semester. To pass a module (i.e. successfully complete it) an explicit performance assessment must be completed (cf. 2.3.1).

On the basis of the *degree of obligation* a differentiation is made between courses which are compulsory and those which are elective. For each compulsory course students must complete a performance

assessment. In addition, examinations must be taken for elective courses chosen from a prescribed list of subjects.

Moreover, courses also differ in terms of the *form* they take:

In **lectures** academic themes and ideas are primarily communicated by means of direct instruction (with the students present or through the use of telecommunications equipment). However, appropriate subject matter can also be taught by other means, for example through computer based teaching / learning programs.

Exercises can be included in lectures. Here students receive instruction that allows them to deepen their understanding of the material by working on set tasks and case studies. As a rule lectures and exercises combine to form a module (**lecture with integrated exercise**).

In **seminars** students themselves present papers on set topics on the basis of current academic literature and defend their viewpoints using academic argumentation. In addition, written work elaborating on the material presented may be required.

The Master's thesis is a piece of written work to be completed independently on a given subject (cf. section 4.3.5). This is not bound to a particular course and the time schedule can be decided on individually.

## **2.3 Performance assessments and credits**

### **2.3.1 General**

An explicitly defined performance assessment must be completed for each module. Depending on the nature of the module and prior announcement by the responsible lecturers this can take the form of independently solving tasks set as exercises, written or oral examinations, preparing written assignments, presenting a paper or similar tasks. No credits will be awarded on the basis of mere attendance.

Performance assessments are conducted within the same time frame or in close proximity to the corresponding course (as a rule they take place in the same semester or before the start of the course in the following semester).

A given number of credits is allocated to each module which reflect the approximate average workload needed for its successful completion. The standard gauge for this is that one credit equals approximately 30 hours (for contact teaching, independent study of literature, solving exercises, completing performance assessments etc.).

### **2.3.2 Awarding credits, grading, unsuccessful attempts**

Performance assessments will be graded (cf. § 12 FR, as well as section 3.3). A distinction will be made between modules for which grades are awarded and those for which grades are not awarded. A student is deemed to have successfully completed a graded module when a mark of 4 or above is

gained for the requisite performance assessment. In the case of ungraded modules performance assessments are designated either as 'pass' or 'fail'. Modules for which a grade below 4.0 is achieved or which are graded as 'fail' are regarded as unsuccessful attempts.

If a module is successfully completed then the credits allocated to that module will be awarded. Either all the credits for a particular module will be awarded or none at all, the award of only a part of the total credits envisaged for a module is not possible.

After completion of each semester students will receive a Transcript of Records. This includes a list of all the modules completed to-date and the credits and grades awarded for them. The Transcript of Records shows the modules which have been passed as well as those which have not been passed (unsuccessful attempts).

Any discrepancies in relation to the newly recorded credits should be reported to the Dean's Office of the WWF in writing within 30 days. The decision of the Dean's Office is subject to appeal to the Appeals Commission of the Zurich universities (§ 14 FR).

### **2.3.3 Requirements for the award of credits**

The credits for a module can only be awarded if the requirements set down in the module description (cf. section 2.4) are fulfilled and the students are correctly registered within the period set down for registration (cf. section 2.4). The lecturers responsible for a given module are entitled to require verification that these conditions have been met.

### **2.3.4 Registration and withdrawal**

Students must register online in the electronic system for every module for which they wish to be awarded credits (cf. § 17 FR). According to the module selected, which is offered at either the University of Zurich or the ETH, the booking system of the respective institution will be applied. Consequently, students must register for the desired module at the particular university at which the relevant module is offered. Registrations which are not made within the official period for registration made public will not be accepted. Upon submission of a written request the Program Director will decide in cases of hardship whether an exception should be made.

The date for withdrawal will be provided for each module, up until this time it is possible to withdraw from the requirement to complete a performance assessment without the need to provide reasons for the withdrawal. Withdrawal after this deadline is only permitted on the basis of compelling reasons in accordance with section 3.2 of these Study Regulations. A student who does not complete the requisite performance assessment necessary for the award of credits without gaining approval for withdrawal will be deemed not to have passed the particular module, which will then be recorded as an unsuccessful attempt. Upon submission of a written request the Program Director will decide In cases of hardship whether an exception should be made.

### **2.3.5 Exclusion from further study**

If a student has made more than six unsuccessful attempts or, after the second attempt, has not successfully completed the Master's thesis, then he or she will be definitively excluded from further study (§§ 13, 31 FR).

### **2.3.6 Validity of credits**

Only credits acquired in the previous five years will be taken into account for the award of the Master's degree (§ 28 RO). The effective dates for the calculation of this are the date of registration for the completion of studies on the one hand, and the last day of the semester in which a credit was acquired on the other.

## **2.4 Details regarding the modules offered**

At the end of the preceding semester the following details will be made public for each module:

- Title of the module
- Form of the module (e.g. lecture, seminar, etc.)
- Area of the module (EF or MF)
- Number of credits to be awarded
- Where applicable: details concerning times and location
- Lecturers responsible for module
- Additional details on contents (learning goals) and the relevant literature
- Prerequisites for attending the module
- Modalities for registration and withdrawal
- Requirements for the performance assessment (what performance is required for the award of the credits for the module), including all details with regard to exam dates etc.
- Details stating whether the module is recognised as a compulsory or elective module

## **3 General examination regulations**

The following provisions apply for all examinations. Every prescribed performance assessment which leads to the award of credits, for example, a test, an oral examination, a seminar presentation etc., is regarded as an examination for the purposes of these Study Regulations.

### **3.1 Registration**

Registration is necessary for each module (§ 17 FR). Details are given in section 2.3.4.

Anyone who has been definitively excluded from the WWF, the Department of Mathematics of the ETH Zurich or from another university in a similar subject due to examination failure or non-adherence to the examination regulations, will not be admitted to any further examinations (§ 19 FR).

### **3.2 Unforeseeable hindrance, discontinuation and unexcused absence**

Unforeseeable hindrance, discontinuation and unexcused absence are regulated by § 18 of the Framework Regulations.

### **3.3 Grading**

Examination results are graded with the marks 1-6; quarter marks are also permissible. The grades are awarded on the following basis (§ 12FR):

6	= excellent
5,5	= very good
5	= good
4,5	= satisfactory
4	= sufficient.

Marks below 4 are unsatisfactory.

### **3.4 Academic aids, use of unauthorized aids, admission by fraudulent means**

The academic aids which are permitted for use in examinations will be made public in the appropriate form for all modules.

In cases of fraud or cheating the regulations in accordance with § 21 of the FR will apply.

### **3.5 Recognition and transfer of credits gained at other institutions**

Upon application by the candidate the Program Director can recognize study achievements, up to a maximum of 15 credits, at Master's level gained at other universities or in other departments or faculties and grant exemption from individual examinations in such cases, i.e. transfer credits (§ 32 FR).

Applications enclosing the relevant verification of study achievement are to be submitted in writing to the Dean's Office of the WWF.

In the case of transfer from another study program or from another university it is advisable to contact the Program Director as soon as possible.

Additional conditions are listed in section 4.5.

### **3.6 Discrepancies and appeals**

Any discrepancies in relation to the newly recorded credits should be reported to the Dean's Office of the WWF in writing within 30 days. The decision of the Dean's Office is subject to appeal to the Appeals Commission of the Zurich universities (§ 14 FR).

### **3.7 Language**

As a rule performance assessments are to be submitted in the same language as that in which the module is taught. The use of German, English, French or Italian in place of the language of instruction is allowed with the permission of the lecturer responsible for the particular module.

The Master's thesis is to be submitted in English.

## **4 Master's program**

### **4.1 Admission**

#### **4.1.1 General conditions**

To be admitted to the course of study students must have a Bachelor's degree from a university or an equivalent university qualification.

Applicants must have a good basic knowledge of finance and mathematics. This requires study to have been undertaken at Bachelor level in a relevant subject area, for example in economics, mathematics, physics or engineering. Details regarding the necessary subject requirements in finance and mathematics can be found in Appendix 2.

In addition, a good knowledge of English at the level of C1 as defined by the Common European Framework must be demonstrated. The groups exempted from providing proof of this are shown in Appendix 2.

Any changes to the subject and language requirements shown in Appendix 2 will be decided on by the responsible bodies of the WWF and D-MATH upon request by the Steering Committee.

#### **4.1.2 Application and admission procedure**

Application for admission to the course of study is to be submitted to the WWF for the attention of the Program Director. Deadlines and formalities will be made public in the appropriate form.

A maximum fee of CHF 200 can be charged for the processing of each application.

The Program Director will consider the applications in accordance with the following criteria:

- a. Completeness of the documentation
- b. Bachelor degree from a university or equivalent qualification (§ 22 FR, para. 1)
- c. Good basic knowledge of finance and mathematics.
- d. Good knowledge of English.

The Program Director may also use recognized test procedures to assess the applicant, invite the applicant for interview and request references. The Steering Committee can also decide to use other assessment criteria.

There is no entitlement to admission.

Candidates will be informed in writing of the decision with regard to admission (cf. also section 4.1.4). The Dean's Office of the WWF is to be notified of any objections in writing within 30 days.

The decision delivered by the Dean's Office is subject to appeal to the Appeals Commission of the Zurich universities.

#### **4.1.3 Documents**

The UZH makes public in appropriate form which documents must be enclosed with the application dossier.

Where documents are missing the Program Director can charge an additional fee of CHF 50 and CHF 100 for processing and defer or reject the application.

#### **4.1.4 Admission subject to conditions and restrictions**

If admission is made subject to restrictions or if conditions must be fulfilled prior to admission, this will be communicated with the admissions decision. This describes the additional performance that is required, sets the deadline and determines the permissible number of unsuccessful attempts.

The modules to be completed as defined by the restrictions (= acquisition of additional qualifications) must be successfully completed within four consecutive semesters after admission as well as prior to the commencement of the Master's thesis. The effective date for this is that of admission with restrictions. In justified cases the Program Director can extend the deadline for fulfillment of restrictions. Verification must be provided when registering for the Master's thesis. The credits gained in relation to restrictions do not count towards the Master's degree.

If the conditions or restrictions are not fulfilled in accordance with the provisions stipulated, the student will be excluded from the course of study.

#### **4.1.5 Students excluded from the course of study**

Students who have been excluded from a course of study in finance or mathematics (or a comparable course of study) from the WWF or D-MATH or another university will not be admitted (§ 24 FR).

## 4.2 Formal conditions

### 4.2.1 Structure

The Master's program is divided into compulsory and elective modules.

Over the course of the Master's program all students must acquire 33 credits from compulsory courses (cf. Appendix 1). A further 27 credits are to be acquired from elective courses.

In addition to this a written Master's thesis must be completed. cf. section 4.3.5).

### 4.2.2 Final degree

The course of study for the Master's degree is deemed to be successfully completed when all requirements have been completed within the regulation time period and when overall a minimum of 90 credits have been acquired in accordance with § 28, para. 2. Under normal circumstances this corresponds to a study period of 3 semesters for the Master's degree.

In addition, up to 15 additional credits from finance or mathematics can be recognized for the Master's degree (§ 15 FR) as long as these have been acquired in accordance with the conditions set down in these Study Regulations and the Framework Regulations. If more than 105 credits have been gained then the surplus credits will not be taken into consideration. The Program Director will decide which credits are surplus. As a rule these are the credits acquired last.

The average mark is calculated from the weighted average of all the credits awarded for each individually graded module of the Master's program successfully completed which are eligible according to sections 1 and 2. The average mark is calculated precisely; the result is rounded to two decimal places.

For particularly good degrees the following honours will be noted on the degree on the basis of the average mark achieved:

- 5.5 to 6: summa cum laude (with distinction)
- 5 to less than 5.5: magna cum laude (very good).

Once the candidate has completed all the requisite courses and submitted the necessary study achievements for the Master's degree, he or she can apply to the Dean's Office of the WWF for completion of studies. For this the following documentation has to be submitted:

- a. the completed registration form
- b. admission decision
- c. where appropriate: any letters of recognition from the Program Director
- d. where applicable: verification of that the restrictions or conditions for admittance to the Master's degree program have been fulfilled.
- e. a copy of the UZH card

A student who has successfully completed his/her Master's degree will receive three documents: The Academic Record, the Diploma and the Diploma Supplement. After the meeting of the Examination Board of the Faculty Committee, the candidate will be sent an academic record. This contains the results of all modules taken into account for the Master's degree in accordance with § 29 FR as well as the average grades achieved. Furthermore, all excessive modules which have been successfully completed at the UZH and the ETH Zurich but not credited for completion of the Master's degree will be shown (§ 29 FR, para. 2).

The Academic Record provides verification that the Master's degree has been successfully obtained.

The award of the title of Master of Science is made through the presentation of the signed diploma (according to § 36 FR).

### **4.3 Conditions related to contents**

#### **4.3.1 Principles**

The subject matter of each module belongs either to the area of "Economic Theory for Finance" (EF) or the area of "Mathematical Methods for Finance".

The following conditions apply for the acquisition of the credits necessary for the Master's degree:

- 1 The compulsory modules are completed when a minimum of 33 credits have been obtained. Of these at least 9 credits must come from each of the areas EF and MF. The compulsory modules are offered at least once a year.
- 2 In addition, at least 27 credits are to be obtained from elective modules. Of these at least 9 credits must come from each of the areas EF and MF. If a student gains more than 33 credits from the compulsory area, the additional credits can be transferred to the elective component; in this case the conditions of section 2.3.2 apply.
- 3 A Master's thesis must be completed (cf. 4.3.5). It represents 30 credits.

The modules from the compulsory and elective areas that need to be completed are shown in Appendix 1, as are the corresponding number of credits for the various study areas.

Any changes to the list of compulsory modules shown in Appendix 1 will be decided on by the responsible bodies of the WWF and D-MATH at the request of the Steering Committee.

#### **4.3.2 Lectures and exercises**

The vast majority of credits will be acquired from lectures and exercises. Graded examinations will be conducted with regard to the lectures and exercises.

#### **4.3.3 Seminars**

Seminars also constitute elective modules. Of the 27 credits for the elective modules up to 6 credits may come from seminars.

Credits will be awarded for seminars when the requirements for the seminar have been fulfilled. As a rule these include: regular participation in the seminar, giving a seminar presentation, written assignment elaborating on the seminar contents, other work in the seminar.

Depending on the subject matter of the seminar a certain level of prior knowledge may be required.

Seminars are graded.

#### **4.3.4 The Master's thesis**

As part of the Master's degree, students must independently complete a written, academic thesis (Master's thesis) sufficient in scope to gain 30 credits, and which deals academically with a topic selected in relation to the course of study. As an integral part of the Master's thesis candidates are also expected to give a public presentation in which they present their Master's thesis and subsequently answer questions posed by those professors of the WWF and D-MATH who are present.

The topics are set by professors of the Department of Economics of the WWF or D-MATH. The range of topics is announced partly through notices and partly on the web pages of the Institute. Students can contact the lecturers named in the notices directly if they are interested in a particular topic displayed, alternatively they can contact a professor of their choice for additional topics. Students can also propose their own topics. Group work is not permitted.

The Master's thesis is graded.

An unsuccessful Master's thesis can be repeated once only. A new topic must be selected for the repeat attempt (§ 13, para. 2 FR).

Appropriate prior knowledge is required for the preparation of a Master's thesis; this is why, as a rule, the Master's thesis should only be written in the final semester. The formal issuance of the subject for the written thesis will be made by the Dean's Office of the WWF.

The period allowed for completion of the Master's thesis is six months and commences with the formal issuance of the topic. Two copies of the thesis are to be handed to the Dean's Office of the WWF or sent by registered post to the Dean's Office of the WWF. In the case of the latter, the date of the postmark is regarded as the date of submission. Master's theses submitted late will be deemed as failed.

If the Master's thesis is the last module before the completion of studies, this must be handed in to the Dean's Office of the WWF at least 60 days prior to the date set for graduation.

The supervising professor will assess the work submitted including the public presentation and will inform the student in writing of the grade awarded.

If after commencement of the Master's thesis the candidate should become wholly or partially unable to work or if other conditions should arise, which are beyond the control of the candidate, that prevent the submission of the thesis by the due date, then the Program Director will, upon written

request, decide whether to extend the deadline or to abandon the thesis. Master's theses which are abandoned with the approval of the Program Director are deemed not to have been begun.

#### **4.4 Retaking examinations**

With the exception of the Master's thesis, each unsuccessfully completed module of the Master's program can be repeated as often as necessary as long as the total number of unsuccessful attempts does not exceed a maximum of six (§ 13, § 31 RO).

The Masters thesis can be repeated once; however, a new subject must be set for the second attempt (§ 13, para. 2 FR).

It is not possible to repeat a module that has already been successfully completed. Neither can credits be awarded for a module with the same or similar contents to one already completed (§ 13, para. 3 FR).

There is no entitlement to an immediate repetition of an unsuccessfully completed performance assessment. As a rule, repetition will only be possible in the following year of study at the earliest, provided the relevant module is offered once again.

#### **4.5 Transfer of credits gained elsewhere**

Study achievements gained at another university or in another course of study can be transferred to the Master's degree, provided they were obtained at Master's level. The maximum number of credits gained elsewhere that can be transferred is 15 (§ 15 RO). All unsuccessful attempts made elsewhere will also be taken into account. A Master's thesis completed elsewhere cannot be transferred.

Study achievements obtained prior to admission to the Master's program may be transferred for the Master's degree at the discretion of the Program Director, if these achievements correspond to the level required for a Master's degree.

Modules that have already been credited towards a Bachelor or Master's degree cannot be transferred to the Master's degree (§ 15 FR).

For the recognition and transfer of such credits an application must be made by the student to the Program Director. In such cases particular attention will be paid to ensure that modules with the same or similar contents are not transferred several times. The duty of proof lies with the student. The student is also responsible for ensuring that the performance leading to the award of credits is in line with ECTS.

In the cases of semesters spent abroad it is highly advisable to clarify in advance with the Program Director whether credits gained elsewhere will be subsequently recognised (learning agreement).

The above regulations also apply for students who wish to transfer from another university, another faculty of the University of Zurich, another department of the ETH Zurich or from another department to the Department of Economics of the WWF.

## **5 Transitional regulations**

The transitional regulations are set down in the Framework Regulations (§ 39).

## **6 Entry into Force**

These Study Regulations enter into force after approval by the WWF of the UZH and the Executive Board of the ETH Zurich.

## A1 Appendix 1

### Compulsory and elective course program

#### A1.1 General

The subject matter of each module belongs either to the area of "Economic Theory for Finance" (EF) or the area of "Mathematical Methods for Finance".

Assignment to the different areas will be made by the Steering Committee upon recommendation by the relevant lecturer.

The program of study is structured as follows:

- 33 credits from compulsory modules of which at least 9 credits must come from the area EF and at least 9 credits must come from the area MF.
- 27 credits from elective modules of which at least 9 credits must come from the area EF and at least 9 credits must come from the area MF.
- 30 credits for the Master's thesis

#### A1.2 The compulsory program

All compulsory modules are offered in English. Each compulsory module will be offered once a year.

**Compulsory modules** (the relevant area is shown in brackets):

Economic Foundations for Finance (EF)	Fall	2h+1h	4.5 credits
Advanced Corporate Finance I (EF)	Fall	2h	3 credits
Advanced Financial Economics (EF)	Fall	2h	3 credits
Financial Markets and Financial Institutions (EF)	Fall	2h	3 credits
Asset Management (EF)	Spring	2h+1h	4.5 credits
Mathematical Foundations for Finance (MF)	Fall	3h+1h	4 credits
Financial Engineering (MF)	Fall	2h+1h	4.5 credits
Continuous Time Quantitative Finance (MF)	Spring	3h	4.5 credits
Quantitative Risk Management (MF)	Spring	2h	4 credits
Computational PDE Methods for Finance (MF)	Spring	2h+1h	6 credits

#### A1.3 The elective program

If a student gains more than 33 credits from the compulsory area, the additional credits (only whole modules) can be transferred to the elective component.

The modules of the elective course program listed below are to be understood as examples only: there is no guarantee that a module with exactly this title will be offered. It is also the case that modules

with other titles than those shown for the elective course area can be transferred. The Steering Committee for the program checks the elective courses offered annually.

The following are typical elective modules:

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Term Structures and Credit Risk Models
Asset Allocation and Performance Management
Theory of Banking and Financial Intermediation
Applied Risk Management
Monte Carlo Methods
Risk Theory
Applied Portfolio Theory
Advanced Financial Engineering
Applied Risk Management
Financial Econometrics
Mathematical Finance
Applied Corporate Finance
Copula Theory for Finance

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## A2 Appendix 2

### A2.1 Required proficiency in English

Good knowledge of English is required for admission to the study program. This should be attested to by a language certificate at the level of C1 as defined by the Common European Framework.

Exemptions from providing proof of sufficient linguistic proficiency are made for those who have completed:

- A Bachelor degree in the English language
- Secondary school in the English language
- Or who declare and prove that English is their mother tongue.

### A2.2 Required knowledge of finance and mathematics

Applicants must have a good basic knowledge of finance and mathematics.

This includes:

- Basic Calculus and Linear Algebra  
Covered by the lectures Mathematics I and II, or Linear Algebra in the Bachelor program of the WWF of UZH
- Corporate Finance  
Covered in selected chapters of the book 'Principles of Corporate Finance' by R. Brealey and Stewart Myers  
<http://www.msfinance.ch/application/BrealeyMyers.html>
- Investments  
Covered in selected chapters of the book 'Investments' by William F. Sharpe, Gordon J. Alexander, Jeffery V. Bailey  
<http://www.msfinance.ch/application/Investments.html>
- Probability theory  
Covered by the book 'Probability Essentials' by J. Jacod and P. Protter  
[http://www.amazon.com/gp/reader/3540438718/ref=sib\\_dp\\_pt#reader-link](http://www.amazon.com/gp/reader/3540438718/ref=sib_dp_pt#reader-link)
- Basic statistics  
Covered in selected chapters of the book 'Mathematical Statistics and Data Analysis' by J. Rice  
<http://www.msfinance.ch/application/Rice.html>

