Student Handbook

of the M. Sc. degree programme in

Mathematical Finance
1. General information

Overview of the degree programme

Degree

The master's degree programme in Mathematical Finance offers a scientifically orientated and research-led education. Working languages are English and German. However, German is not mandatory in order to successfully complete the programme. The master's degree programme is designed for four semesters (2 years). Over the course 120 ECTS credit points have to be achieved. Succeeding in the master's examination the student will be granted the academic title Master of Science (M.Sc.).

Students' advisory

For German speaking students the Student Advisory Service offers general information on the Master programmes:

Zentrale Studienberatung
Christian-Albrechts-Platz 5 (Anbau Uni-Hochhaus)
Office hours: Mon. Wed., Thu.: 8.30 - 12.00 am and Wed. 2.00 - 4.00 pm
Phone office hours: Mon. - Thu.: 9.30 – 12.00 am
Phone: +49 431 880-7440
Postal address: Zentrale Studienberatung der Christian-Albrechts-Universität zu Kiel
24098 Kiel
Email: zbs@uv.uni-kiel.de
Internet: http://www.zsb.uni-kiel.de/

International students please contact the International Center for general information on the master programme and further assistance:

International Center of Kiel University, 24098 Kiel
Visitor's address:
Westring 400, Ground Floor
24118 Kiel
Ms. Angelika Koslowski
Phone: +49 431 880-5330
Email: akoslowski@uv.uni-kiel.de
Ms. Veronika Langner
Phone: +49 431 880-3718
Email: vlangner@uv.uni-kiel.de
Internet: http://www.international.uni-kiel.de/en
Questions regarding the examination:
- Examination office of the Department of Mathematics:
  Ms. Christine Krüger  880-3440
  Ms. Nicole Mard-Azad 880-4390
  Heinrich-Hecht-Platz 6
  Office hours: Tue 9:00 -11:00 am,
  Thu 9:00 -11:00 am
  Email: pruefungsamt@math.uni-kiel.de
  Internet: http://www.math.uni-kiel.de/de/einrichtungen-und-gremien/pruefungsamt

- Head of examination board Mathematical Finance:
  Prof. Dr. Jan Kallsen  880-2783
  Heinrich-Hecht-Platz 6
  Office hours: Thu.: 4:00-5:00 pm and by arrangement.
  Email: kallsen@math.uni-kiel.de

- Examination office Faculty of Business, Economics and Social Sciences:
  Ms. Elke Ehlers  880-4888
  Ms. Tanja Rathmann 880-7109
  Office hours: Tuesday and Thursdays, 9:00 am – 11:30 am.
  Internet: http://www.wiso.uni-kiel.de/en/studying/examination-office

Programme admission

Admission requirements:

Degree specific admission and examination regulations:
"Fachprüfungsordnung, §16" (in German, to be translated):

Main requirements:
- Bachelor (180 ETCS credit points) in Mathematics with grade 3.0 or better (provided that contents, extent, scientific level are comparable to BSc. in Mathematics from CAU)
- Bachelors (180 ETCS credit points) in other subjects with grade 2.5 or better can be admitted if they have at least 30 ETCS credit points in analysis, linear algebra, probability theory and statistics, again with grade 2.5 or better, If necessary, admission may be granted conditionally on taking additional bachelor courses in the first two semesters.

In any case, be aware that the mathematical level in the masters programme Mathematical Finance is very high. The Faculty of Business, Economics and Social Sciences offers a closely related MSc programme Quantitative Finance with a stronger emphasis on economics rather than mathematics.
Language requirements:
Due to the fact that the programme is taught primarily in English, the following requirements concerning the level of language command have to be met:

- Good reading skills (C1 in CEF) in English, evidenced by the school certificate (minimum of 4 years of English at least with grade „satisfactory“ (07)) or
- TOEFL-Test 550 (Paper-based Testing) or equivalent test result or
- Bachelor's degree with English as language of instruction.

Admission and enrolment:

a) Candidates holding a Bachelor's degree in Mathematics from Kiel University
simply register at the Studierendenservice with their degree certificate or transcript of records.

b) Candidates holding a Bachelor's degree from a German University: cf.
http://www.studium.uni-kiel.de/de/bewerbung-einschreibung/einschreibung/master/absolventen-andere-hochschulen

For graduates from international universities:
application is done via "uni-assist". cf.

In any case, please turn to the International Center for advice and assistance
http://www.international.uni-kiel.de/en/application-admission

The contact person is
Ms. Angelika Koslowski
Phone: +49 431 880-5330
Email: akoslowski@uv.uni-kiel.de

Beginning of studies: winter term, starting in October

2. Master's examination

The relevant legal documents are the degree-specific examination regulations (Fachprüfungsordnung) and the examination procedure regulations (Prüfungsverfahrensordnung). These German documents are to be translated into English. The German version is legally binding.

The study-accompanying module examinations are graded. A module examination will be successfully passed if at least grade „sufficient“ (4.0) is achieved. Passed examinations cannot be repeated.
Examinations which were not successfully passed can be repeated twice.

If the third examination trial is graded „insufficient“ but a necessary condition for the successful completion of the module, neither the respective module nor the whole master's examination will be passed.
# Curriculum Master of Science Mathematical Finance

<table>
<thead>
<tr>
<th>Semester</th>
<th>Module</th>
<th>Type</th>
<th>Hours</th>
<th>Exam</th>
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**Explanation:**

1. L=lecture, T=tutorial, PC=computer tutorial, S=seminar, I=internship, TH=thesis
2. weakly hours (=45 minutes each) during the semester
3. o=oral, w=written, p=presentation, r=report, t=thesis, u=unmarked
4. credit points
5. Can be split into 1-2 modules of altogether 6 hours (L+T)
6. Can be chosen from the modules in applied and pure mathematics. At least one of the modules is to be chosen from applied (rather than pure) mathematics. Modules are typically taught in English upon request. Suggested courses are Mathematical Statistics (Stochastik II) and Numerics of Differential Equations (Numerik von Differentialgleichungen).
7. The modules for Compulsory Elective Section Financial Economics & Corporate Finance I-III are chosen from Section 4 in the FPO Quantitative Finance. Two of the modules are taken from “Financial Economics” or “Public Econometrics”, the third one from “Applied Empirical Methods” excluding “Portfolio Analysis”.
8. Seminar in applied mathematics. At least one seminar must be in the area of Mathematical Finance. One of the seminars can be chosen from the Master’s programme Quantitative Finance (Group of Modules: Financial Economics 1060300), subject to admission by the examination board and the organizer.
9. Typically in the term break
10. Advanced Courses in Mathematical Finance as e.g. Risk Management, Interest Rate Theory, Optimization in Mathematical Finance, Actuarial Mathematics and Risk Theory, Mathematics of Machine learning
11. Research seminar in the area of the Master thesis
12. The master thesis is supposed to be closely connected to Mathematical Finance. It may be supervised by a professor involved in the Master’s programme Quantitative Finance from the faculty of Business, Economics and Social Sciences.

(Non-binding translation of the official German version, date: April 22, 2022)
Dates of module examinations
An examination has to be passed for each course.

The examination for a lecture or a seminar usually takes place in the examination period at the end of the semester.

The re-examination for a lecture takes place in the examination period before or shortly after the beginning of the following semester.

The dates are announced at the beginning of the semester in the UnivIS or OLAT system:
https://univis.uni-kiel.de/form resp. https://lms.uni-kiel.de

Registration for module examinations

The following website announces the period for registration and examination of the semester:
https://www.pamt.uni-kiel.de/pas/vzp/downloads/info

In order to take an examination a registration for this exam is required. A registration is also mandatory for taking part in the re-examination.

You have to register for examination via the student's online function on the homepage of QIS
https://www.uni-kiel.de/hisinone

In order to do so, you have to activate your stu-account first:
https://www.rz.uni-kiel.de/de/studinet/aktivieren

There is no possibility to take the examination if you are not registered for it. In order to take the examination you have to bring your ID-card. An examination will be graded „insufficient“ if the student fails to appair without valid reason though being registered for the examination or retreats after the exam begun.

The results of the examination can be reviewed via the QIS. Dates for revision frequently are announced jointly with the results of the exam.

Participation in seminars

During the master you have to attend two seminars. A seminar in mathematics usually involves an introductory meeting at the end of the previous semester where the topics will be assigned. You need to perform a 90 minutes talk about your topic during the seminar.

Some hints for seminars by Prof. Kallsen (German version) can be found here:
http://www.math.uni-kiel.de/numerik/kallsen/personen/kallsen/pub/Vortrag2.pdf

Students have to register during the first registration period for the seminars via the QIS.

If you want to attend a seminar in the masters programme Quantitative Finance, cf.
https://www.wiso.uni-kiel.de/de/studium/dateien-studienfaecher/studienfuehrer/Studen-thandbook%20Master%20Programs%20Institute%20of%20Economics.pdf

Oral exams

The registration for the oral exams take place during the official period of registration, however students and examiners agree individually upon the exact dates for the examination. Usually, they take place after the period of examination.
Master's thesis

Before registration to the master's thesis please agree upon the topic of your thesis with your chosen first examiner. Usually, the first examiner suggests a second examiner. Please inquire about topic proposals of the corresponding chair and the available examiners.

The topic may only be issued if the applicant has attained at least 60 credit points from modules which have already been completed.

The usual timeframe for the master's thesis is six months. The topic may be changed once in the first six weeks during the thesis.

The form of application for the admission to the master's thesis and further information on the administrative process can be found at the examination office of the Department of Mathematics.