Master’s Programme
Mathematical Finance

Department of Mathematics and Statistics
Department of Economics

Karin Czaja
Konstanz, 01.03.2023
Konstanz – in the heart of Europe

- We’re based at the Lake Constance, bordering Switzerland and Austria.
Lake Constance – Border Triangle
City of Konstanz
The University of Konstanz

# 1 in Germany in the QS Top 50 Under 50 Ranking

1 of 11 Universities of Excellence in Germany

92% of our international students recommend us ISB 2013
First-class sports activities

- Courses in
  - Canoeing
  - Hiking
  - Sailing
  - Skiing
  - Climbing

Its own Fitness centre
- And much more!
Other activities at the Campus

- Orchestra, Big Band
- Theater
- Campus Gardening
- Political & social groups
  - (Amnesty International, CorrelAid etc.)
Our University Campus
Services for international students – Getting started

• Orientation Programme
• German Language Courses
• Student housing for international students - Single rooms in shared apartments or single apartments
• International Office
• Career Service
The Department of Economics – Facts & Figures

Professors
18 Professors
5 Junior professors

Students WS 2022/23
1,241 students in total
564.5 women (45.5%), 144 international students (11.6%)

Research Focus
Behavioural Economics, Macroeconomics, Public Economics, Finance & Econometrics, Business & Economics Education, Human Resource Development
The Department of Mathematics and Statistics – Facts & Figures

Professors
- 12 Professors
- 3 Junior professors

Students WS 2022/23
- 331 students in total, 120 women (36.3%),
- 48.5 international students (14.7%)

Mathematical Finance
- 120 students
What is Mathematical Finance?

• An interdisciplinary master’s programme
• Two departments are jointly responsible for the programme
• deals with the modelling and analysis of financial markets and financial instruments
• using sound mathematical and economic approaches
• applying mathematical methods to economic questions
Why study Mathematical Finance in Konstanz?

• Our master’s programme in Konstanz is the only one of its kind
• Strong research focus from both departments
• The ideal way to develop further math and eco know-how
• Broaden your horizons…we expressly recommend that you do a semester abroad and at least a two-month internship!
• The departments have an excellent international network and regularly achieve top results in rankings
What Career Prospects are there?

• Demanding positions above all in the financial sector:
  • Banks
  • Insurance companies
  • Finance departments of industrial firms and service companies
  • Regulatory bodies
  • Regional and national ministries
  • Consulting firms
• The great majority of our graduates is highly content
# Plan of study – Master’s programme

<table>
<thead>
<tr>
<th></th>
<th>Mathematics</th>
<th>ECTS-Points Mathem.</th>
<th>Interdisciplinary Area</th>
<th>ECTS-Points Interdiscipl.</th>
<th>Economics</th>
<th>ECTS-Points Eco</th>
<th>ECTS-Punkte gesamt</th>
<th>SWS gesamt</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SS 4</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>8</td>
<td>20</td>
<td>28</td>
<td>0</td>
<td>28</td>
<td>19</td>
</tr>
<tr>
<td><strong>WS 3</strong></td>
<td>Numerics of Stochastic Differential Equations</td>
<td>Elective</td>
<td>Seminar</td>
<td>Portfolio Management</td>
<td>Financial Economics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>4</td>
<td>6</td>
<td>10</td>
<td>6</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td><strong>SS 2</strong></td>
<td>Time Series Analysis</td>
<td>Financial Mathematics</td>
<td></td>
<td>Risk Management</td>
<td>Bank Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9</td>
<td>9</td>
<td>18</td>
<td>0</td>
<td>8</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td><strong>WS 1</strong></td>
<td>Numerics of Partial Differential Equations</td>
<td>Theory of Partial Differential Equations</td>
<td>Stochastics II</td>
<td>Elective</td>
<td>Seminar</td>
<td>Accounting Theory</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9</td>
<td>5</td>
<td>14</td>
<td>5</td>
<td>6</td>
<td>11</td>
<td>6</td>
</tr>
</tbody>
</table>

**Total**

37

49

34

120

80
MSc Mathematical Finance I

Mathematics (Courses possibly in English)
- Theory and Numerics of Partial Differential Equations
- Stochastics II
- Time Series Analysis
- Financial Mathematics
- Numerics of Stochastic Differential Equations

Economics (Courses normally in English)
- Accounting Theory
- Bankmanagement
- Riskmanagement
- Portfolio Management
- Financial Econometrics
MSc Mathematical Finance II

Electives
- 17 ECTS
- Master courses from the Departments of Economics and Mathematics & Statistics not covered by other modules
- Other courses might be approved by the examination board

Seminars
- 2 Seminars, 6 ECTS each
- From the Departments of Economics and Mathematics & Statistics

Master thesis
- 20 ECTS, 4 months, 50-70 pages
Admission Requirements I

Mathematics

Knowledge of analysis, linear algebra, stochastics or numerics (at least 32 ECTS):

- Analysis I, 9 ECTS
- Analysis II, 9 ECTS
- Analysis III, 9 ECTS
- Linear Algebra I, 9 ECTS
- Numerics I, 5 ECTS
- Stochastics I, 9 ECTS

Economics

Knowledge of statistics, econometrics or economics (at least 26 ECTS):

- Corporate Finance, 5 ECTS
- Capital Market Theory, 6 ECTS
- Statistics II, 6 ECTS
- Microeconomics I/ Macroeconomics, 9 ECTS
- Econometrics I, 8 ECTS
- Accounting, 5 ECTS
Admission Requirements II – English Language Skills

- Evidence of sufficient proficiency in English:
- **CPE/CAE** (Cambridge Certificate of Proficiency in English/Cambridge Certificate in Advanced English): minimum grade C
- **IELTS** (International English Language Testing System): at least band 6
- **TOEFL** (Test of English as a Foreign Language): at least 80 points (internet-based), 213 points (computer-based) or 550 points (paper-based)
- Alternatively: proof of one semester’s study in English
Admission Requirements III - GRE

For applicants who have obtained their Bachelor’s degree outside of Germany:

- The result of the **GRE** test (Graduate Record Examinations)
- The GRE test cannot be substituted by the GMAT or by any other test
Admission Requirements IV – German Language Skills

• For applicants **without** a German University Entrance Qualification (**Abitur**) :
  
  • **DSH** (German Language Examination for University Entrance): at least level 1
  
  • **TestDAF** (Test for German as a Foreign Language): at least level 3 in all 4 areas.
  
  • Equivalent language tests see the following website: https://www.uni-konstanz.de/en/international-office/study-in-konstanz/degree-studies/german-language-skills/
How to apply

• Application deadline summer semester: 15 March (winter semester: 15 September)

1. Find detailed information on our website https://www.wiwi.uni-konstanz.de/en/study/master-of-science/mathematical-finance/applications/

2. Contact us if you have any questions.

3. Collect and scan all necessary documents. A checklist is available on our website.

4. Apply through our online application system (scanned application documents are sufficient).
Any Questions?

We’re happy to answer all your questions on the contents and application process of the master‘s programme.

Karin Czaja (Study coordinator Mathematical Finance)
• Email: karin.czaja@uni-konstanz.de
• Phone: + 49 (0) 7531 88 3452
• Office hours: Thursday, 2-4 p.m.

Jan-Hendrik Treude (Depart. Mathematics and Statistics)
• Email: jan-hendrik.treude@uni-konstanz.de
• Phone: + 49(0) 7531 88 2417

Inga Blume (Student Study Advisor)
• Email: studienberatung.fima@uni-konstanz.de
Thanks for your attention!

See you in Konstanz!