

**Finance (Master)****Specialization in Financial Mathematics**

Term	Mathematics	Financial Economics	Other	CP <sup>1</sup>
1	Discrete Time Financial Mathematics (4 CP)	Asset Pricing (7 CP)	Additional Key Qualification (3 CP)	30
	Optional Modules (9 CP)	Optional Modules (7 CP)		
2	Continuous Time Financial Mathematics (4 CP)		Seminar 1 <sup>2</sup> (4 CP)	30
	Stochastic Analysis (4 CP)		Practical Financial Engineering (4 CP)	
	Optional Modules (11 CP)		Additional Key Qualification (3 CP)	
3	Optional Modules (20 CP): — at least 12 CP from Mathematics — at least 4 CP from Financial Economics		Risk Management Roundup (4 CP)	30
			Seminar 2 <sup>2</sup> (4 CP)	
			Additional Key Qualification (2 CP)	
4	Master's Thesis (30 CP)			30

<sup>1</sup>CP is credit points.<sup>2</sup>At least one of the Seminars has to be in Financial Mathematics.

**Finance (Master)****Specialization in Financial Economics**

Term	Mathematics	Quantitative Methods	Financial Economics	Other	CP <sup>1</sup>
1		Optional Modules (6 CP):	Derivatives (7 CP)	Additional Key Qualification (3 CP)	30
			Asset Pricing (7 CP)		
			Optional Modules (7 CP)		
2		Optional Modules (8 CP)	Optional Modules (11 CP)	Seminar 1 <sup>3</sup> (4 CP)	30
				Practical Financial Engineering <sup>4</sup> (4 CP)	
				Additional Key Qualification (3 CP)	
3		Optional Modules (6 CP)	Optional Modules (14 CP)	Risk Management Roundup (4 CP)	30
				Seminar 2 <sup>3</sup> (4 CP)	
				Additional Key Qualification (2 CP)	
4		Master's Thesis (30 CP)			30

<sup>3</sup>At least one of the Seminars has to be in Financial Economics.

<sup>4</sup>or Project class in Asset Management.

# Finance (Master)

## Specialization in Actuarial Science

Term	Mathematics	Quantitative Methods	Financial Economics	Actuarial Science	Other	CP <sup>1</sup>
1	Discrete Time Financial Mathematics (4 CP)		Derivatives (7 CP)	Optional Modules (9 CP)	Additional Key Qualification (3 CP)	30
			Optional Modules (7 CP)			
2	Optional Modules (10 CP)			Optional Modules (9 CP)	Seminar 1 <sup>5</sup> (4 CP)	30
					Practical Actuarial Science (4 CP)	
					Additional Key Qualification (3 CP)	
3	Optional Modules (6 CP)			Optional Modules (7 CP)	Risk Management Roundup <sup>6</sup> (4 CP)	30
					Seminar 2 <sup>5</sup> (4 CP)	
	Optional Modules (7 CP)				Additional Key Qualification (2 CP)	30
4	Master's Thesis (30 CP)					30

<sup>5</sup>At least one of the Seminars has to be in Actuarial Science.

<sup>6</sup>or Practical Financial Engineering.

The study plans show typical courses of study, separately for the three possible specializations. Note that the credit points stated per semester are not binding in the sense that you need to achieve exactly the stated number of points per semester. For example, instead of studying for ten or thirteen points in Mathematics in the first semester you could do more. The courses offered in a given semester will not always allow you to exactly hit the number of credits stated in the plan. However, we aim to put together a course program that allows you to follow the study plan fairly closely. In order to design your “personal” study plan, you can check the courses to be offered in the next semesters on the M.Sc. Finance web pages.

We recommend that you finish your course work in the first three semesters, reserving the fourth for the Master’s thesis. However, you can also take courses in the fourth semester. You only get the degree if you have passed the compulsory courses and earned the number of credits required for optional modules in each field. The requirements depend on the chosen specialization.

The choice of specialization has to be finalized until the start of the examination period of the second semester. Afterwards, it is not possible to change it. Possible specializations are “Financial Mathematics” (in German: Finanzmathematik), “Financial Economics” (in German: Finanzwirtschaft) and “Actuarial Science” (in German: Aktuarwissenschaft).

Depending on the choice of specialization, the following modules need to be completed:

a) Specialization in Financial Mathematics

1. Discrete Time Financial Mathematics (4 CP)
2. Continuous Time Financial Mathematics (4 CP)
3. Asset Pricing (7 CP)
4. Stochastic Analysis (4 CP)
5. Electives in Mathematics and Financial Economics totalling at least 47 CP, out of which a minimum of 32 CP must be from Mathematics, while a minimum of 11 CP must be from Financial Economics.
6. Two Seminars, one of which must be in Financial Mathematics (8 CP)
7. Practical Financial Engineering (4 CP)
8. Risk Management Roundup (4 CP)
9. Additional key qualifications with a minimum of 8 CP
10. Master thesis (30 CP)

b) Specialization in Financial Economics

1. Asset Pricing (7 CP)
2. Derivatives (7 CP)
3. Electives in Financial Economics with a minimum of 32 CP
4. Electives in Mathematics and Quantitative Methods totalling at least 20 CP
5. Two Seminars, one of which must be in Financial Economics (8 CP)
6. Practical Financial Engineering or Project class in Asset Management (4 CP)
7. Risk Management Roundup (4 CP)

8. Additional key qualifications with a minimum of 8 CP

9. Master thesis (30 CP)

c) Specialization in Actuarial Science

1. Derivatives (7 CP)

2. Discrete Time Financial Mathematics (4 CP)

3. Electives in Actuarial Science with a minimum of 25 CP

4. Electives in Mathematics totalling at least 16 CP

5. Electives in Financial Economics with a minimum of 7 CP

6. Electives in Actuarial Science, Financial Economics, Mathematics or Quantitative Methods with a minimum of 7 CP

7. Two Seminars, one of which must be in Actuarial Science (8 CP)

8. Practical Actuarial Science (4 CP)

9. Practical Financial Engineering or Risk Management Roundup (4 CP)

10. Additional key qualifications with a minimum of 8 CP

11. Master thesis (30 CP)

Modules that do not enter the calculation of the final grade are the two seminars. The rules concerning the case where you earn more than the required number of credit points are described in the section on examination regulations.

As additional key qualification you can, for example, attend German language courses specifically offered for international M.Sc. students. If you attend these German courses, please note that you need three courses to earn the required 8 credits (The first two courses earn you 3 credits each, the third one 2). While it is advisable to learn German (if you do not know it already) because it increases your chances of finding a job in Germany after graduating, there is a wide range of other courses that qualify. Please note, however, that German language courses other than the ones specifically offered for international M.Sc. students are usually not eligible. If you are already proficient in German you may take an advanced course in e.g. Wirtschaftsdeutsch, but only with the consent of the language center (contact Mrs. Husemann). English language courses and language courses in your mother tongue are not eligible.

If you want to learn more about the contents and the requirements of a course, you can browse the module descriptions available in the University Services Portal. Please do not hesitate to contact us if you are unsure about your optimal plan of study, requirements for attending a course, and the like.