

Modules for Mathematics

Date 17/07/19

Mastermodule

mat510 - Fourier Analysis

Module label	Fourier Analysis			
Module code	mat510			
Credit points	9.0 KP			
Workload	270 h			
Used in course of study	<ul style="list-style-type: none"> Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> Daniel Grieser Boris Vertman Hannes Uecker 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination	Type of examination		
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		4.00	--	56 h
Exercises		2.00	--	28 h
Total time of attendance for the module				84 h

mat515 - Functional Analysis II

Module label	Functional Analysis II
Module code	mat515
Credit points	9.0 KP
Workload	270 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Hannes Uecker ◦ Boris Vertman

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination	Type of examination		
Final exam of module		KL		
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		4.00	--	56 h
Exercises		2.00	--	28 h
Total time of attendance for the module				84 h

mat525 - Non-Linear Functional Analysis

Module label	Non-Linear Functional Analysis
Module code	mat525
Credit points	6.0 KP
Workload	180 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman ◦ Hannes Uecker

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat530 - Topology

Module label	Topology			
Module code	mat530			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman ◦ Hannes Uecker 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat535 - Global Analysis

Module label	Global Analysis
Module code	mat535
Credit points	9.0 KP
Workload	270 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module	KL			
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		4.00	--	56 h
Exercises		2.00	--	28 h
Total time of attendance for the module				84 h

mat536 - Global Analysis

Module label	Global Analysis
Module code	mat536
Credit points	9.0 KP
Workload	270 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		4.00	--	56 h
Exercises		2.00	--	28 h
Total time of attendance for the module				84 h

mat538 - Singular Analysis

Module label	Singular Analysis			
Module code	mat538			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	SuSe or WiSe	42 h
Exercises		1.00	SuSe or WiSe	14 h
Total time of attendance for the module				56 h

mat540 - Differential Geometry

Module label	Differential Geometry
Module code	mat540
Credit points	9.0 KP
Workload	270 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module	KL			
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		4.00	--	56 h
Exercises		2.00	--	28 h
Total time of attendance for the module				84 h

mat542 - Complex Geometry

Module label	Complex Geometry			
Module code	mat542			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	SuSe or WiSe	42 h
Exercises		1.00	SuSe or WiSe	14 h
Total time of attendance for the module				56 h

mat543 - Selected Topics in Geometry

Module label	Selected Topics in Geometry			
Module code	mat543			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person				
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	SuSe or WiSe	42 h
Seminar or exercise		1.00	SuSe or WiSe	14 h
Total time of attendance for the module				56 h

mat545 - Complex Analysis II

Module label	Complex Analysis II
Module code	mat545
Credit points	9.0 KP
Workload	270 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman ◦ Hannes Uecker

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		4.00	--	56 h
Exercises		2.00	--	28 h
Total time of attendance for the module				84 h

mat550 - Spectral Theory of Differential Operators

Module label	Spectral Theory of Differential Operators
Module code	mat550
Credit points	6.0 KP
Workload	180 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	<p>Module responsibility</p> <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Ivan Shestakov ◦ Boris Vertman ◦ Hannes Uecker

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat555 - Partial Differential Equations I

Module label	Partial Differential Equations I
Module code	mat555
Credit points	9.0 KP
Workload	270 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman ◦ Hannes Uecker

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		4.00	--	56 h
Exercises		2.00	--	28 h
Total time of attendance for the module				84 h

mat560 - Partial Differential Equations II

Module label	Partial Differential Equations II
Module code	mat560
Credit points	9.0 KP
Workload	270 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman ◦ Hannes Uecker

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination	Type of examination		
Final exam of module		KL		
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		4.00	--	56 h
Exercises		2.00	--	28 h
Total time of attendance for the module				84 h

mat565 - Non-Linear Partial Differential Equations

Module label	Non-Linear Partial Differential Equations			
Module code	mat565			
Credit points	9.0 KP			
Workload	270 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman ◦ Hannes Uecker 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		4.00	--	56 h
Exercises		2.00	--	28 h
Total time of attendance for the module				84 h

mat570 - Dynamical Systems

Module label	Dynamical Systems			
Module code	mat570			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman ◦ Hannes Uecker 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat575 - Modelling with Partial Differential Equations

Module label	Modelling with Partial Differential Equations			
Module code	mat575			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman ◦ Hannes Uecker 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat579 - Selected Topics in Analysis

Module label	Selected Topics in Analysis			
Module code	mat579			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	SuSe or WiSe	42 h
Seminar or exercise		1.00	SuSe or WiSe	14 h
Total time of attendance for the module				56 h

mat595 - Numerical Methods for Partial Differential Equations

Module label	Numerical Methods for Partial Differential Equations			
Module code	mat595			
Credit points	9.0 KP			
Workload	270 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Alexey Chernov 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination	Type of examination		
Final exam of module		KL		
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		4.00	--	56 h
Exercises		2.00	--	28 h
Total time of attendance for the module				84 h

mat597 - Numerical Methods for Partial Differential Equations with Uncertainties

Module label	Numerical Methods for Partial Differential Equations with Uncertainties			
Module code	mat597			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Alexey Chernov 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination	Type of examination		
Final exam of module		KL		
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat599 - Selected Topics in Numerical Analysis

Module label	Selected Topics in Numerical Analysis			
Module code	mat599			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Alexey Chernov 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination	Type of examination		
Final exam of module		KL		
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	SuSe or WiSe	42 h
Seminar or exercise		1.00	SuSe or WiSe	14 h
Total time of attendance for the module				56 h

mat605 - Seminar in Analysis

Module label	Seminar in Analysis	
Module code	mat605	
Credit points	6.0 KP	
Workload	180 h	
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 	
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Daniel Grieser ◦ Boris Vertman ◦ Hannes Uecker 	
Entry requirements		
Skills to be acquired in this module		
Module contents		
Reader's advisory		
Links		
Languages of instruction	German, English	
Duration (semesters)	1 Semester	
Module frequency		
Module capacity	14	
Modullevel	---	
Modulart	je nach Studiengang Pflicht oder Wahlpflicht	
Lern-/Lehrform / Type of program		
Vorkenntnisse / Previous knowledge		
Examination	Time of examination	Type of examination
Final exam of module		SA
Course type	Seminar	
SWS	2.00	
Frequency	--	
Workload attendance	28 h	

mat610 - Seminar in Modelling

Module label	Seminar in Modelling	
Module code	mat610	
Credit points	6.0 KP	
Workload	180 h	
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 	
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Hannes Uecker 	
Entry requirements		
Skills to be acquired in this module		
Module contents		
Reader's advisory		
Links		
Languages of instruction	German, English	
Duration (semesters)	1 Semester	
Module frequency		
Module capacity	unlimited	
Modullevel	---	
Modulart	je nach Studiengang Pflicht oder Wahlpflicht	
Lern-/Lehrform / Type of program		
Vorkenntnisse / Previous knowledge		
Examination	Time of examination	Type of examination
Final exam of module		SA
Course type	Seminar	
SWS	2.00	
Frequency	--	
Workload attendance	28 h	

mat615 - Seminar in Numerical Analysis

Module label	Seminar in Numerical Analysis	
Module code	mat615	
Credit points	6.0 KP	
Workload	180 h	
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 	
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Alexey Chernov 	
Entry requirements		
Skills to be acquired in this module		
Module contents		
Reader's advisory		
Links		
Languages of instruction	German, English	
Duration (semesters)	1 Semester	
Module frequency		
Module capacity	unlimited	
Modullevel	---	
Modulart	je nach Studiengang Pflicht oder Wahlpflicht	
Lern-/Lehrform / Type of program		
Vorkenntnisse / Previous knowledge		
Examination	Time of examination	Type of examination
Final exam of module		SA
Course type	Seminar	
SWS	2.00	
Frequency	--	
Workload attendance	28 h	

mat705 - Algebraic Number Theory

Module label	Algebraic Number Theory
Module code	mat705
Credit points	9.0 KP
Workload	270 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Florian Heß ◦ Andreas Stein

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	2 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Seminar		2.00	--	28 h
Total time of attendance for the module				84 h

mat710 - Algorithmic Number Theory

Module label	Algorithmic Number Theory
Module code	mat710
Credit points	6.0 KP
Workload	180 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Florian Heß ◦ Andreas Stein

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module	KL			
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat715 - Algebraic Curves and Functions

Module label	Algebraic Curves and Functions
Module code	mat715
Credit points	6.0 KP
Workload	180 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Florian Heß ◦ Andreas Stein

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module	KL			
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat720 - Elliptic Curves

Module label	Elliptic Curves
Module code	mat720
Credit points	9.0 KP
Workload	270 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Florian Heß ◦ Andreas Stein

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	2 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Seminar		2.00	--	28 h
Total time of attendance for the module				84 h

mat725 - Arithmetic Duality

Module label	Arithmetic Duality			
Module code	mat725			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Florian Heß ◦ Andreas Stein 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat730 - Coding Theory

Module label	Coding Theory			
Module code	mat730			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Florian Heß ◦ Andreas Stein 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat735 - Complex Multiplication

Module label	Complex Multiplication
Module code	mat735
Credit points	6.0 KP
Workload	180 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Florian Heß ◦ Andreas Stein

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module	KL			
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat740 - Mathematical Cryptology

Module label	Mathematical Cryptology
Module code	mat740
Credit points	6.0 KP
Workload	180 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Florian Heß ◦ Andreas Stein

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module	KL			
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat745 - Modular Forms

Module label	Modular Forms			
Module code	mat745			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Florian Heß ◦ Andreas Stein 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat750 - Commutative Algebra

Module label	Commutative Algebra
Module code	mat750
Credit points	6.0 KP
Workload	180 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Florian Heß ◦ Andreas Stein

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module	KL			
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat755 - Topics in Algebraic Geometry

Module label	Topics in Algebraic Geometry
Module code	mat755
Credit points	6.0 KP
Workload	180 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Florian Heß ◦ Andreas Stein

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module	KL			
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat760 - Special Topics in Number Theory

Module label	Special Topics in Number Theory			
Module code	mat760			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Florian Heß ◦ Andreas Stein 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat765 - Computer Algebra

Module label	Computer Algebra
Module code	mat765
Credit points	6.0 KP
Workload	180 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Florian Heß ◦ Andreas Stein

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module	KL			
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat770 - Seminar Algebra and Number Theory

Module label	Seminar Algebra and Number Theory	
Module code	mat770	
Credit points	6.0 KP	
Workload	180 h	
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 	
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Andreas Stein ◦ Florian Heß 	
Entry requirements		
Skills to be acquired in this module		
Module contents		
Reader's advisory		
Links		
Languages of instruction	German, English	
Duration (semesters)	1 Semester	
Module frequency		
Module capacity	unlimited	
Modullevel	---	
Modulart	je nach Studiengang Pflicht oder Wahlpflicht	
Lern-/Lehrform / Type of program		
Vorkenntnisse / Previous knowledge		
Examination	Time of examination	Type of examination
Final exam of module		RE
Course type	Seminar	
SWS	2.00	
Frequency	--	
Workload attendance	28 h	

mat775 - Analytic Number Theory

Module label	Analytic Number Theory
Module code	mat775
Credit points	6.0 KP
Workload	180 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Andreas Stein ◦ Florian Heß

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module	KL			
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat779 - Selected Topics in Algebra

Module label	Selected Topics in Algebra
Module code	mat779
Credit points	6.0 KP
Workload	180 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Florian Heß ◦ Andreas Stein

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	SuSe or WiSe	42 h
Seminar or exercise		1.00	SuSe or WiSe	14 h
Total time of attendance for the module				56 h

mat805 - Actuarial Mathematics I

Module label	Actuarial Mathematics I			
Module code	mat805			
Credit points	9.0 KP			
Workload	270 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		4.00	--	56 h
Exercises		2.00	--	28 h
Total time of attendance for the module				84 h

mat806 - Actuarial Mathematics II

Module label	Actuarial Mathematics II
Module code	mat806
Credit points	6.0 KP
Workload	180 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination	Type of examination		
Final exam of module		KL		
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	SuSe or WiSe	42 h
Exercises		1.00	SuSe or WiSe	14 h
Total time of attendance for the module				56 h

mat810 - Quantitative Risk Management

Module label	Quantitative Risk Management			
Module code	mat810			
Credit points	9.0 KP			
Workload	270 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 			
Entry requirements				
Skills to be acquired in this module	Students shall learn about fundamental mathematical concepts of modern risk management in the insurance industry.			
Module contents	Fundamentals of ruin theory, risk measures, modelling of dependent risks, fundamentals of Asset-Liability-Management, performance measures, mathematical and legislative foundations of the Solvency II process, statistical Monte Carlo methods, stochastic internal business models, allocation principles of risk capital.			
Reader's advisory	S. ASSMUSSEN (2000): Ruin Probabilities. World Scientific, Singapore R. DOFF (2007): Risk Management for Insurers. Risk Control, Economic Capital and Solvency II. RISK Books, London I. van LELYVELD (2006): Economic Capital Modelling. Concepts, Measurement and Implementation. RISK Books, London A.J. McNEIL, R. FREY, P.EMBRECHTS (2005): Quantitative Risk Management. Concepts, Techniques, Tools. Princeton Univ. Press, Princeton J. RANK (2007): Copulas. From Theory to Application in Finance. RISK Books, London R.Y. RUBINSTEIN, D.P. KROESE (2008): Simulation and the Monte Carlo Method. Wiley, Hoboken, N.J. A. SANDSTROM (2006): Solvency. Models, Assessment and Regulation. Chapman & Hall / CRC, Boca Raton.			
Links				
Languages of instruction	English , German			
Duration (semesters)	1 Semester			
Module frequency	im 2-Jahres-Zyklus			
Module capacity	unlimited			
Modullevel	MM (Mastermodul)			
Modulart	Wahlpflicht			
Lern-/Lehrform / Type of program	lecture + tutorial			
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module	in the first two weeks of the semester vacation		written or oral exam or solving of exercises	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		4.00	--	56 h
Exercises		2.00	--	28 h
Total time of attendance for the module				84 h

mat811 - Quantitative Risk Analysis

Module label	Quantitative Risk Analysis			
Module code	mat811			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	SuSe and WiSe	42 h
Exercises		1.00	SuSe or WiSe	14 h
Total time of attendance for the module				56 h

mat816 - Quantitative Risk Analysis

Module label	Quantitative Risk Analysis
Module code	mat816
Credit points	6.0 KP
Workload	180 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	German, English
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination	Type of examination		
Final exam of module		KL		
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	SuSe or WiSe	42 h
Exercises		1.00	SuSe or WiSe	14 h
Total time of attendance for the module				56 h

mat820 - Stochastic Analysis and continuous-time Financial Mathematics

Module label	Stochastic Analysis and continuous-time Financial Mathematics			
Module code	mat820			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat825 - Stochastic Processes and Finance

Module label	Stochastic Processes and Finance
Module code	mat825
Credit points	9.0 KP
Workload	270 h
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel

Entry requirements

Skills to be acquired in this module

Module contents

Reader's advisory

Links

Languages of instruction	English , German
Duration (semesters)	1 Semester
Module frequency	
Module capacity	unlimited
Modullevel	---
Modulart	je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Examination	Time of examination	Type of examination		
Final exam of module		KL		
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Seminar		2.00	--	28 h
Total time of attendance for the module				84 h

mat826 - Statistics of Financial Markets

Module label	Statistics of Financial Markets			
Module code	mat826			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat830 - Linear Models / Regression

Module label	Linear Models / Regression			
Module code	mat830			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat835 - Generalized Regression

Module label	Generalized Regression			
Module code	mat835			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			SA	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat837 - Extreme Value Statistics and Applications

Module label	Extreme Value Statistics and Applications				
Module code	mat837				
Credit points	6.0 KP				
Workload	180 h				
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule • Master Umweltmodellierung > Mastermodule 				
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 				
Entry requirements					
Skills to be acquired in this module					
Module contents					
Reader's advisory					
Links					
Languages of instruction	German, English				
Duration (semesters)	1 Semester				
Module frequency					
Module capacity	unlimited				
Modullevel	---				
Modulart	je nach Studiengang Pflicht oder Wahlpflicht				
Lern-/Lehrform / Type of program					
Vorkenntnisse / Previous knowledge					
Examination	Time of examination		Type of examination		
Final exam of module			KL		
Course type	Comment	SWS	Frequency	Workload attendance	
Lecture		3.00	--	42 h	
Exercises		1.00	--	14 h	
Total time of attendance for the module					56 h

mat839 - Time Series Models resp. State Space Models

Module label	Time Series Models resp. State Space Models				
Module code	mat839				
Credit points	6.0 KP				
Workload	180 h				
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule • Master Umweltmodellierung > Mastermodule 				
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 				
Entry requirements					
Skills to be acquired in this module					
Module contents					
Reader's advisory					
Links					
Languages of instruction	German, English				
Duration (semesters)	1 Semester				
Module frequency					
Module capacity	unlimited				
Modullevel	---				
Modulart	je nach Studiengang Pflicht oder Wahlpflicht				
Lern-/Lehrform / Type of program					
Vorkenntnisse / Previous knowledge					
Examination	Time of examination		Type of examination		
Final exam of module			KL		
Course type	Comment	SWS	Frequency	Workload attendance	
Lecture		3.00	--	42 h	
Exercises		1.00	--	14 h	
Total time of attendance for the module					56 h

mat840 - Monte Carlo Methods

Module label	Monte Carlo Methods			
Module code	mat840			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat843 - Elements of Multivariate Statistics

Module label	Elements of Multivariate Statistics				
Module code	mat843				
Credit points	6.0 KP				
Workload	180 h				
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule • Master Umweltmodellierung > Mastermodule 				
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Angelika May ◦ Marcus Christiansen ◦ Peter Ruckdeschel 				
Entry requirements					
Skills to be acquired in this module					
Module contents					
Reader's advisory					
Links					
Languages of instruction	German, English				
Duration (semesters)	1 Semester				
Module frequency					
Module capacity	unlimited				
Modullevel	---				
Modulart	je nach Studiengang Pflicht oder Wahlpflicht				
Lern-/Lehrform / Type of program					
Vorkenntnisse / Previous knowledge					
Examination	Time of examination		Type of examination		
Final exam of module			KL		
Course type	Comment	SWS	Frequency	Workload attendance	
Lecture		3.00	--	42 h	
Exercises		1.00	--	14 h	
Total time of attendance for the module					56 h

mat845 - Spatial Statistics

Module label	Spatial Statistics			
Module code	mat845			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat847 - Elements of Exploratory Data Analysis, Robust Statistics, and Diagnostics

Module label	Elements of Exploratory Data Analysis, Robust Statistics, and Diagnostics				
Module code	mat847				
Credit points	6.0 KP				
Workload	180 h				
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule • Master Umweltmodellierung > Mastermodule 				
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 				
Entry requirements					
Skills to be acquired in this module					
Module contents					
Reader's advisory					
Links					
Languages of instruction	German, English				
Duration (semesters)	1 Semester				
Module frequency					
Module capacity	unlimited				
Modullevel	---				
Modulart	je nach Studiengang Pflicht oder Wahlpflicht				
Lern-/Lehrform / Type of program					
Vorkenntnisse / Previous knowledge					
Examination	Time of examination		Type of examination		
Final exam of module			KL		
Course type	Comment	SWS	Frequency	Workload attendance	
Lecture		3.00	--	42 h	
Exercises		1.00	--	14 h	
Total time of attendance for the module					56 h

mat849 - Statistical Algorithms

Module label	Statistical Algorithms				
Module code	mat849				
Credit points	6.0 KP				
Workload	180 h				
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule • Master Umweltmodellierung > Mastermodule 				
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 				
Entry requirements					
Skills to be acquired in this module					
Module contents					
Reader's advisory					
Links					
Languages of instruction	German, English				
Duration (semesters)	1 Semester				
Module frequency					
Module capacity	unlimited				
Modullevel	---				
Modulart	je nach Studiengang Pflicht oder Wahlpflicht				
Lern-/Lehrform / Type of program					
Vorkenntnisse / Previous knowledge					
Examination	Time of examination		Type of examination		
Final exam of module			KL		
Course type	Comment	SWS	Frequency	Workload attendance	
Lecture		3.00	--	42 h	
Exercises		1.00	--	14 h	
Total time of attendance for the module					56 h

mat850 - Asset Liability Management

Module label	Asset Liability Management			
Module code	mat850			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		2.00	--	28 h
Seminar		2.00	--	28 h
Total time of attendance for the module				56 h

mat857 - Stochastic Models in Finance

Module label	Stochastic Models in Finance			
Module code	mat857			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	SuSe or WiSe	42 h
Exercises		1.00	SuSe or WiSe	14 h
Total time of attendance for the module				56 h

mat860 - Advanced Topics in Stochastic Modelling

Module label	Advanced Topics in Stochastic Modelling			
Module code	mat860			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat865 - Advanced Topics in Statistics

Module label	Advanced Topics in Statistics			
Module code	mat865			
Credit points	6.0 KP			
Workload	180 h			
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 			
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel Module counseling <ul style="list-style-type: none"> ◦ Kornelius Rohmeyer 			
Entry requirements				
Skills to be acquired in this module				
Module contents				
Reader's advisory				
Links				
Languages of instruction	German, English			
Duration (semesters)	1 Semester			
Module frequency				
Module capacity	unlimited			
Modullevel	---			
Modulart	je nach Studiengang Pflicht oder Wahlpflicht			
Lern-/Lehrform / Type of program				
Vorkenntnisse / Previous knowledge				
Examination	Time of examination		Type of examination	
Final exam of module			KL	
Course type	Comment	SWS	Frequency	Workload attendance
Lecture		3.00	--	42 h
Exercises		1.00	--	14 h
Total time of attendance for the module				56 h

mat870 - Seminar in Statistics

Module label	Seminar in Statistics	
Module code	mat870	
Credit points	6.0 KP	
Workload	180 h	
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 	
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 	
Entry requirements		
Skills to be acquired in this module		
Module contents		
Reader's advisory		
Links		
Languages of instruction	German, English	
Duration (semesters)	1 Semester	
Module frequency		
Module capacity	unlimited	
Modullevel	---	
Modulart	je nach Studiengang Pflicht oder Wahlpflicht	
Lern-/Lehrform / Type of program		
Vorkenntnisse / Previous knowledge		
Examination	Time of examination	Type of examination
Final exam of module		SA
Course type	Seminar	
SWS	2.00	
Frequency	--	
Workload attendance	28 h	

mat875 - Seminar in Actuarial Mathematics, Probability and Statistics

Module label	Seminar in Actuarial Mathematics, Probability and Statistics	
Module code	mat875	
Credit points	6.0 KP	
Workload	180 h	
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 	
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 	
Entry requirements		
Skills to be acquired in this module		
Module contents		
Reader's advisory		
Links		
Languages of instruction	German, English	
Duration (semesters)	1 Semester	
Module frequency		
Module capacity	unlimited	
Modullevel	---	
Modulart	je nach Studiengang Pflicht oder Wahlpflicht	
Lern-/Lehrform / Type of program		
Vorkenntnisse / Previous knowledge		
Examination	Time of examination	Type of examination
Final exam of module		RE
Course type	Seminar	
SWS	2.00	
Frequency	--	
Workload attendance	28 h	

mat880 - Seminar in Mathematical Finance

Module label	Seminar in Mathematical Finance	
Module code	mat880	
Credit points	6.0 KP	
Workload	180 h	
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 	
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Marcus Christiansen ◦ Angelika May ◦ Peter Ruckdeschel 	
Entry requirements		
Skills to be acquired in this module		
Module contents		
Reader's advisory		
Links		
Languages of instruction	German, English	
Duration (semesters)	1 Semester	
Module frequency		
Module capacity	unlimited	
Modullevel	---	
Modulart	je nach Studiengang Pflicht oder Wahlpflicht	
Lern-/Lehrform / Type of program		
Vorkenntnisse / Previous knowledge		
Examination	Time of examination	Type of examination
Final exam of module		RE
Course type	Seminar	
SWS	2.00	
Frequency	--	
Workload attendance	28 h	

mat905 - Selected Topics in Mathematics

Module label	Selected Topics in Mathematics	
Module code	mat905	
Credit points	6.0 KP	
Workload	180 h	
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 	
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Lehrende der Mathematik 	
Entry requirements		
Skills to be acquired in this module		
Module contents		
Reader's advisory		
Links		
Languages of instruction	German, English	
Duration (semesters)	1 Semester	
Module frequency		
Module capacity	unlimited	
Modullevel	---	
Modulart	je nach Studiengang Pflicht oder Wahlpflicht	
Lern-/Lehrform / Type of program		
Vorkenntnisse / Previous knowledge		
Examination	Time of examination	Type of examination
Final exam of module		KL
Course type	Course selection	
SWS	4.00	
Frequency	--	
Workload attendance	56 h	

pb - Professionalisierung

Module label	Professionalisierung	
Module code	pb	
Credit points	6.0 KP	
Workload	180 h	
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Mastermodule 	
Contact person		
Entry requirements		
Skills to be acquired in this module		
Module contents		
Reader's advisory		
Links		
Languages of instruction		
Duration (semesters)	1 Semester	
Module frequency		
Module capacity	unlimited	
Modullevel	---	
Modulart	je nach Studiengang Pflicht oder Wahlpflicht	
Lern-/Lehrform / Type of program		
Vorkenntnisse / Previous knowledge		
Examination	Time of examination	Type of examination
Final exam of module		KL
Course type	Seminar	
SWS		
Frequency		
Workload attendance	0 h	

Abschlussmodul

mam - Master's Thesis Module

Module label	Master's Thesis Module	
Module code	mam	
Credit points	30.0 KP	
Workload	900 h	
Used in course of study	<ul style="list-style-type: none"> • Master Mathematik > Abschlussmodul 	
Contact person	Module responsibility <ul style="list-style-type: none"> ◦ Alexey Chernov ◦ Marcus Christiansen ◦ Daniel Grieser ◦ Florian Heß ◦ Angelika May ◦ Peter Ruckdeschel ◦ Andreas Stein ◦ Hannes Uecker ◦ Boris Vertman 	
Entry requirements		
Skills to be acquired in this module		
Module contents		
Reader's advisory		
Links		
Languages of instruction	German, English	
Duration (semesters)	1 Semester	
Module frequency		
Module capacity	unlimited	
Modullevel	---	
Modulart	je nach Studiengang Pflicht oder Wahlpflicht	
Lern-/Lehrform / Type of program		
Vorkenntnisse / Previous knowledge		
Examination	Time of examination	Type of examination
Final exam of module		G
Course type	Seminar	
SWS	2.00	
Frequency	SuSe and WiSe	
Workload attendance	28 h	

