

## Mathematics (M.Sc., Master Degree Programme)

Study plan | Start in winter term

Version: 08.01.2025

*Note: The following overview offers a non-binding overview of the structure and composition of the modules. The legally binding criteria are available in the examination regulations.*

Module code	Module title (Compulsory/Elective)	Sem.	CP	Type	hours	Course title	Assessment	Module Convenor	Comment/ Language
<b>1<sup>st</sup> Semester (Wi)</b>									
■	Basic Specialization (WP)	Wi	30			A choice of 30 CP from the current offer of compulsory elective <a href="#">Basic Specialization Modules</a> must be completed according to the module description specifications.			English
<b>2<sup>nd</sup> Semester (Su)</b>									
■ <b>Module code</b>	Seminar Module A (P)	Su	5	S	2	Analysis (WP)		de Vries	English
				S	2	Numerical Mathematics (WP)			
				S	2	Optimization (WP)			
				S	2	Stochastics (WP)			
				Ü	1	Practical course from the module's current range of courses.			
						Poster presentation			
■	Advanced Specialization – Part 1 (WP)	Su	15			A choice of 15 CP out of 30 CP from the current offer of compulsory elective <a href="#">Advanced Specialization</a> must be completed according to the module description specifications.			English
■	Free Electives (WP)	Su	10			10 CP out of a total of 20 CP from the free electives for Master's degree programmes (cf. <a href="#">note 1</a> ) must be successfully completed.			

3 <sup>rd</sup> Semester (Wi) <sup>M</sup>									
■ <b>Module code</b>	Seminar Module B (P)	Wi	5	S	2	Analysis (WP)		de Vries	English
				S	2	Numerical Mathematics (WP)			
				S	2	Optimization (WP)			
				S	2	Stochastics (WP)			
				Ü	1	Practical course from the module's current range of courses.			
						Poster presentation			
■	Advanced Specialization – Part 2 (WP)	Wi	15	A choice of 15 CP out of 30 CP from the current offer of compulsory elective <a href="#">Advanced Specialization</a> must be completed according to the module description specifications.				English	
■	Free Electives (WP)	Wi	10	10 CP out of a total of 20 CP from the free electives for Master's degree programmes (cf. <a href="#">note 1</a> ) must be successfully completed.					
4 <sup>th</sup> Semester (Su)									
■ <b>Module code</b>	Master's Thesis (P)	Su	30			Master's Thesis		Schulz	English
				Master's Thesis					

<sup>M</sup> Mobility window

**Compulsory Elective "Basic Specialization" Modules (30 CP to be chosen)**

■ <b>Module code</b>	Specialization Analysis I (WP)	Wi	10	V	4	Function theory (WP)		Frerick	English
				V	4	Functional Analysis (WP)			
				V	4	Lecture from the module's current range of courses. (WP)			
				Ü	2	Practical course from the module's current range of courses.			
				Written exam (105 min.) or Oral exam (20–30 min.)					
■ <b>Module code</b>	Specialization Numerical Mathematics I (WP)	Wi	10	V	4	Numerical Methods for Ordinary Differential Equations (WP)		Schulz	English Students must select one of the compulsory elective (WP) lectures (V).
				V	4	Numerical Solutions of Partial Differential Equations (WP)			
				V	4	Numerical Optimization (WP)			
				Ü	2	Practical course from the module's current range of courses.			
				Written exam (105 min.) or Oral exam (20–30 min.)					
■ <b>Module code</b>	Specialization Optimization I (WP)	Wi	10	V	4	Lecture from the module's current range of courses.		de Vries	English
				Ü	2	Practical course from the module's current range of courses.			
				Written exam (105 min.) or Oral exam (20–30 min.)					
■ <b>Module code</b>	Specialization Stochastics I (WP)	Wi	10	V	4	Lecture from the module's current range of courses.		Mattner	English
				Ü	2	Practical course from the module's current range of courses.			
				Written exam (105 min.) or Oral exam (20–30 min.)					

**Compulsory Elective "Advanced Specialization" Modules (30 CP to be chosen, at least 20 CP in "Specialization")**

■ <b>Module code</b>	Specialization Analysis II (WP)	Wi/ Su	10	V	4	Lecture from the module's current range of courses.		Frerick	English
				Ü	2	Practical course from the module's current range of courses.			
				Oral exam (20–30 min.)					
■ <b>Module code</b>	Specialization Numerical Mathematics II (WP)	Wi/ Su	10	V	4	Lecture from the module's current range of courses.		Schulz	English
				Ü	2	Practical course from the module's current range of courses.			
				Oral exam (20–30 min.)					
■ <b>Module code</b>	Specialization Optimization II (WP)	Wi/ Su	10	V	4	Lecture from the module's current range of courses.		de Vries	English
				Ü	2	Practical course from the module's current range of courses.			
				Oral exam (20–30 min.)					
■ <b>Module code</b>	Specialization Stochastics II (WP)	Wi/ Su	10	V	4	Lecture from the module's current range of courses.		Mattner	English
				Ü	2	Practical course from the module's current range of courses.			
				Oral exam (20–30 min.)					

■ <b>Module code</b>	Selected Topics of Mathematics A (WP)	Wi/ Su	5	V+Ü	3	Lecture <i>and</i> Practical course from the module's current range of courses (WP) <i>or</i>		Roos	English
				S+Ü	3	Seminar <i>and</i> Practical course from the module's current range of courses (WP)			
				Oral exam (15–20 min.) <i>or</i> Poster presentation					
■ <b>Module code</b>	Selected Topics of Mathematics B (WP)	Wi/ Su	5	V+Ü	3	Lecture <i>and</i> Practical course from the module's current range of courses (WP) <i>or</i>		Roos	English
				S+Ü	3	Seminar <i>and</i> Practical course from the module's current range of courses (WP)			
				Oral exam (15–20 min.) <i>or</i> Poster presentation					
■ <b>Module code</b>	Selected Topics of Mathematics C (WP)	Wi/ Su	10	V	4	Lecture from the module's current range of courses.		Roos	English
				Ü	2	Practical course from the module's current range of courses.			
				Oral exam (20–30 min.)					

## Note

Modules totaling 20 CP must be chosen. The following can be selected as elective modules

- (1) Modules with a total of up to 20 CP from the compulsory elective modules listed above
- (2) Modules of up to 20 CP from the modules for the free electives for Master's degree programs of Trier University. Modules of up to 10 CP may be completed from the competence area "Interdisciplinary Competences". Otherwise, modules from all competence areas and subjects may be selected without further restriction,

## List of abbreviations

### *Compulsory attendance courses*

EX	Field trip/Day Field trip	LAB	Lab/lab course	PRS	Practice-oriented seminar
GÜ	Field exercise	PRA	Internship	PRÜ	Practical course
KOS	Colloquium seminar	PRO	Project seminar	SPÜ	Language course

### *Non-compulsory attendance courses*

EL	E-Learning-Course	LK	Reading course	TUT	Tutorium
FK	Specialised Course	OS	Advanced seminar	Ü	Practical course
HS	Master's-level seminar	PRP	Preparatory course	V	Lecture
KOL	Colloquium	PS	Bachelor's-level seminar	V+Ü	Lecture with practical course
K	Course	S	Seminar		

### *Other abbreviations*

LP	Credit Points	SWS	Hours	WP	Elective module or course
P	Compulsory module	Su	Summer term		
Sem	Semester	Wi	Winter term		