

Module Handbook (<https://modhb.uni-kl.de/>)

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Module MAT-30-10L-M-5

Specialisation Module (Teachers Training Programme Mathematics) (M, 9.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
MAT-30-10L-M-5	<i>Specialisation Module (Teachers Training Programme Mathematics)</i>	9.0 CP (270 h)

Basedata

CP, Effort	9.0 CP = 270 h
Position of the semester	2 Sem. from WiSe/SuSe
Level	[5] Master (Entry Level)
Language	[EN] English
Module Manager	Lossen, Christoph, Dr. habil. (WMA DEPT: MAT) (/staff/24/)
Lecturers	Lecturers of the department Mathematics
Area of study	[MAT-EDU] Mathematics (B.Ed./M.Ed.)
Reference course of study	[MAT-64.105-SG] M.Ed. LaG Mathematics (/mhb/FB-MAT/cos-612/)
Lifecycle-State	[NORM] Active

Module Part #A "*Lectures*" (Obligatory, 6.0 LP)

Lectures to a total of 4V must be chosen from the following list:

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
4V	MAT-40-11-K-4 (/mhb/courses/MAT-40-11-K-4/)	WP	-	PL1	6.0	WiSe
4V	MAT-40-14-K-4 (/mhb/courses/MAT-40-14-K-4/)	WP	-	PL1	6.0	SuSe
4V	MAT-70-11-K-4 (/mhb/courses/MAT-70-11-K-4/)	WP	-	PL1	6.0	SuSe
4V	MAT-50-11-K-4 (/mhb/courses/MAT-50-11-K-4/)	WP	-	PL1	6.0	WiSe
2V	MAT-80-12A-K-4 (/mhb/courses/MAT-80-12A-K-4/)	WP	-	PL1	3.0	SuSe
4V	MAT-50-12-K-4 (/mhb/courses/MAT-50-12-K-4/)	WP	-	PL1	6.0	SuSe
2V	MAT-80-11A-K-4 (/mhb/courses/MAT-80-11A-K-4/)	WP	-	PL1	3.0	WiSe
2V	MAT-80-11B-K-4 (/mhb/courses/MAT-80-11B-K-4/)	WP	-	PL1	3.0	WiSe
4V	MAT-60-11-K-4 (/mhb/courses/MAT-60-11-K-4/)	WP	-	PL1	6.0	WiSe
4V	MAT-60-12-K-4 (/mhb/courses/MAT-60-12-K-4/)	WP	-	PL1	6.0	SuSe

- About [**MAT-40-11-K-4**]: Title: "Commutative Algebra"; Presence-Time: 56 h; Self-Study: 124 h
- About [**MAT-40-14-K-4**]: Title: "Cryptography"; Presence-Time: 56 h; Self-Study: 124 h
- About [**MAT-70-11-K-4**]: Title: "Functional Analysis"; Presence-Time: 56 h; Self-Study: 124 h
- About [**MAT-50-11-K-4**]: Title: "Integer Programming: Polyhedral Theory and Algorithms"; Presence-Time: 56 h; Self-Study: 124 h
- About [**MAT-80-12A-K-4**]: Title: "Introduction to Systems and Control Theory"; Presence-Time: 28 h; Self-Study: 62 h
- About [**MAT-50-12-K-4**]: Title: "Nonlinear Optimization"; Presence-Time: 56 h; Self-Study: 124 h
- About [**MAT-80-11A-K-4**]: Title: "Numerics of ODE"; Presence-Time: 28 h; Self-Study: 62 h
- About [**MAT-80-11B-K-4**]: Title: "PDE: An Introduction"; Presence-Time: 28 h; Self-Study: 62 h
- About [**MAT-60-11-K-4**]: Title: "Probability Theory"; Presence-Time: 56 h; Self-Study: 124 h
- About [**MAT-60-12-K-4**]: Title: "Regression and Time Series Analysis"; Presence-Time: 56 h; Self-Study: 124 h

In addition to the lectures listed above, other lectures from the list of courses offered for the Master's programme in Mathematics by the Department of Mathematics can also be selected.

Module Part #B "*Seminar*" (Obligatory, 3.0 LP)

Students are required to attend a specialist seminar of their choice from the range of seminars offered by the Department of Mathematics.

Type/SWS	Course Number	Choice in Module-Part	Choice in Course-Pool	SL	PL	CP	Sem.
KPOOL	MAT-SEM-KPOOL-7 (/mhb/coursepools/MAT-SEM-KPOOL-7/)	P	WP-1	SEM-Schein	no	[3.0]	*

- About [**MAT-SEM-KPOOL-7**]: Title: "Seminars Mathematics (Master)";
- About [**MAT-SEM-KPOOL-7**]: A course from the course pool must be selected.
- About [**MAT-SEM-KPOOL-7**]: The study achievement [**SEM-Schein**] **proof of successful participation in the seminar** must be obtained.

Examination achievement PL1

- Form of examination: **oral examination (20-30 Min.)**
- Examination Frequency: each semester
- Examination number: 82601 ("Examination in specialization module")

Evaluation of grades

The grade of the module examination is also the module grade.

Contents

Choice of specialised courses from the course offerings of the Department of Mathematics for the topic modules A and B.

Competencies / intended learning achievements

The students

- have knowledge of individual areas of mathematics that goes beyond the basics; the topics treated can come close to current research areas;
- know current fields of application and are able to work independently in scientific manner;
- have experience in presenting and teaching mathematical topics.

Literature

For literature references to the lectures, see the respective course descriptions. Literature references for the seminar will be announced together with the announcement of the seminar.

Registration

Registration for the seminar usually via an online procedure (to be announced in advance).

Requirements for attendance (informal)

Depending on the choice of course, further knowledge may be required in addition to the modules listed below (see the respective course description).

Modules:

- [MAT-10-11-M-2] Fundamentals of Mathematics A: Linear Algebra I and Analysis I (M, 15.0 LP) (/mhb/modules/MAT-10-11-M-2/)
- [MAT-10-12L-M-2] Fundamentals of Mathematics B: Linear Algebra II and Analysis II (M, 9.0 LP) (/mhb/modules/MAT-10-12L-M-2/)

Requirements for attendance (formal)

None

References to Module / Module Number [MAT-30-10L-M-5]

Course of Study	Section	Choice/Obligation
[MAT-64.105-SG] M.Ed. LaG Mathematics (/mhb/FB-MAT/cos-612/)	Compulsory Modules	[P] Compulsory