

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

TUK (<https://www.uni-kl.de>) MODHB (<https://modhb.uni-kl.de/>) Homepage (/)

Course MAT-42-13-K-7

Geometry of Schemes (2V, 4.5 LP)

Course Type

SWS	Type	Course Form	CP (Effort)	Presence-Time / Self-Study
2	V	Lecture	4.5 CP	28 h / 107 h
(2V)			4.5 CP	28 h / 107 h

Basedata

SWS	2V
CP, Effort	4.5 CP = 135 h
Position of the semester	1 Sem. irreg.
Level	[7] Master (Advanced)
Language	[EN] English
Lecturers	Gathmann, Andreas, Prof. Dr. (PROF DEPT: MAT) (/staff/14/) Zintl, Jörg, PD Dr. (EXT DEPT: MAT) (/staff/43/)
Area of study	[MAT-AGCA] Algebra, Geometry and Computer Algebra
Additional informations	Informations about the course (https://www.mathematik.uni-kl.de/agag/lehre/)
Lifecycle-State	[NORM] Active

Contents

- theory of schemes (affine, projective and relative schemes),
- structure sheaves and sheaves of modules,
- flat families,
- Grothendieck functor.

Literature

- D. Eisenbud, J. Harris: The Geometry of Schemes,
- H. Matsumura: Commutative Ring Theory,

- R. Hartshorne: Algebraic Geometry.

Materials

Further literature will be announced in the lecture.

Requirements for attendance (informal)

Modules:

- [MAT-10-1-M-2] Fundamentals of Mathematics (M, 28.0 LP) (/mhb/modules/MAT-10-1-M-2/)
- [MAT-40-11-M-4] Commutative Algebra (M, 9.0 LP) (/mhb/modules/MAT-40-11-M-4/)
- [MAT-40-12-M-7] Algebraic Geometry (M, 9.0 LP) (/mhb/modules/MAT-40-12-M-7/)

Courses

- [MAT-12-11-K-2] Algebraic Structures (2V+2U, 5.5 LP) (/mhb/courses/MAT-12-11-K-2/)

Requirements for attendance (formal)

None

References to Course [MAT-42-13-K-7]

Module	Name	Context
[MAT-42-13-M-7 (/mhb/modules/MAT-42-13-M-7/)]	Geometry of Schemes	P: Obligatory 2V, 4.5 LP