

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

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Course MAT-42-22-K-7

Complex Manifolds and Hodge Theory (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	Böhm, Janko, Dr. (WMA DEPT: MAT) (/staff/4/) Gathmann, Andreas, Prof. Dr. (PROF DEPT: MAT) (/staff/14/) Schulze, Mathias, Prof. Dr. (PROF DEPT: MAT) (/staff/33/)
Area of study	[MAT-AGCA] Algebra, Geometry and Computer Algebra
Lifecycle-State	[NORM] Active

Contents

- complex manifolds, subvarieties,
- vector bundles, sections, cohomology,
- applications, e.g. divisors and line bundles,
- differential forms,
- Serre duality.

Literature

- P. Griffiths, J. Harris: Principles of Algebraic Geometry,
- K. Fritzsche, H. Grauert: From Holomorphic Functions to Complex Manifolds.

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-40-12-M-7] Algebraic Geometry (M, 9.0 LP) (/mhb/modules/MAT-40-12-M-7/)

Courses

- [MAT-12-24-K-3] Introduction to Complex Analysis (2V+1U, 4.5 LP) (/mhb/courses/MAT-12-24-K-3/)

Requirements for attendance (formal)

None

References to Course [MAT-42-22-K-7]

Module	Name	Context
[MAT-42-22-M-7 (/mhb/modules/MAT-42-22-M-7/)]	Complex Manifolds and Hodge Theory	P: Obligatory 2V, 4.5 LP