Course Name	Algebraic geometry
Contents and Objectives	Content: • Basics of commutative algebra: integral ring extensions, Hilbert's Nullstellensatz, Localisations, Normalisations • Affine and projective varieties • Dimension theory • Sheaves and schemes • Smooth and singular points • Curves and Surfaces • Applications Objectives: The course gives a comprehensive introduction to the theory to affine and projective varieties and their geometry. It provides basics on commutative algebra, introduced the fundamental notion of schemes and leads to applications in number theory and representation theory as well as in other topics that are treated in more specialized courses.
Teaching	This course consists of lectures and exercise classes. • Lecture: Algebraic geometry (4h/week) • Exercise class: Algebraic geometry (2h/week) This class can be taught remotely.
Prerequisites	Basic notions of Linear Algebra and Higher Algebra
Verwendbarkeit des Moduls	-
Examination	Oral exam (30 minutes)
Credits	8 ECTS points
Frequency	This course is given at least every second year.
Workload	The estimated total working time for this course in 240 hours.
Duration	This course is given during one semester.