

ALGEBRAIC GEOMETRY 2024-2025

	DAY	TIME	WHERE	TOPICS
LECTURE 1	1 October	11-13	ROOM 134 (SISSA)	Intro to the course. Presheaves, sheaves, morphisms, constant presheaves, sheaf condition via equalisers. Stalks, compatible germs.
LECTURE 2	1 October	14-15	ROOM 136 (SISSA)	Characterisation of surjectivity and of isomorphisms via stalk. Existence of sheafification. Skyscrapers. Exact sequences of sheaves.
LECTURE 3	2 October	13-16	ROOM 136 (SISSA)	Supports of sheaves and sections. Sheaves on a base. Direct/inverse image sheaf, adjunction. Locally ringed spaces. Immersions.
LECTURE 4	8 October	11-13	ROOM 134 (SISSA)	Zariski topology on Spec A. Examples. Affine schemes.
LECTURE 5	8 October	14-15	ROOM 136 (SISSA)	Construction of the structure sheaf of Spec A.
LECTURE 6	9 October	13-16	ROOM 136 (SISSA)	Irreducibility, connectedness, quasicompactness. Morphisms of affine schemes and examples.
LECTURE 7	15 October	11-13	ROOM 134 (SISSA)	S-schemes, algebraic varieties. Gluing schemes. Morphisms to an affine scheme.
LECTURE 8	15 October	14-15	ROOM 136 (SISSA)	Proj of a graded ring and its Zariski topology.
LECTURE 9	16 October	13-16	ROOM 136 (SISSA)	Structure sheaf of Proj B. Projective varieties
LECTURE 10	22 October	11-13	ROOM 134 (SISSA)	Projective closure. Exercises on affine and projective schemes.
LECTURE 11	22 October	14-15	ROOM 136 (SISSA)	Exercises on projective schemes.
LECTURE 12	23 October	13-16	ROOM 136 (SISSA)	Irreducible components. Local properties. Reduced and integral schemes. Noetherian schemes.
LECTURE 13	29 October	11-13	ROOM 134 (SISSA)	
LECTURE 14	29 October	14-15	ROOM 136 (SISSA)	
LECTURE 15	30 October	13-16	ROOM 136 (SISSA)	
LECTURE 16		11-13	ROOM 134 (SISSA)	
LECTURE 17		14-15	ROOM 136 (SISSA)	
LECTURE 18		13-16	ROOM 136 (SISSA)	
LECTURE 19		11-13	ROOM 134 (SISSA)	
LECTURE 20		14-15	ROOM 136 (SISSA)	
LECTURE 21		13-16	ROOM 136 (SISSA)	
LECTURE 22		11-13	ROOM 134 (SISSA)	
LECTURE 23		14-15	ROOM 136 (SISSA)	
LECTURE 24		13-16	ROOM 136 (SISSA)	
LECTURE 25		11-13	ROOM 134 (SISSA)	