ALGEBRAIC GEOMETRY 2023-2024

	DAY	TIME	WHERE	TYPE	TOPICS
LECTURE 1	3 oct	9:00	ROOM 134	THEORY	Presheaves, sheaves, morphisms, constant presheaves, sheaf condition via equalisers. Examples.
LECTURE 2	5 oct	11:00	ROOM 134	THEORY	Stalks, compatible germs. Surjectivity of maps of sheaves. Sheaf isomorphisms via stalks (proof). Existence of sheafification (proof). Skyscrapers. Exact sequences of sheaves.
LECTURE 3	10 oct	9:00	ROOM 134	THEORY	Supports of sheaves and sections. Defining sheaves on basic open sets. Direct image, inverse image, their adjunction. Sheaves supported on a closed subset.
LECTURE 4	12 oct	11:00	ROOM 134	THEORY	Locally ringed spaces, their morphisms. Immersions. Closed immersions = ideal sheaves. Zariski topology on Spec A and its quasicompactness. Closed points, closure of a subset of Spec A. “Functions” on Spec A.
LECTURE 5	17 oct	9:00	ROOM 134	THEORY	Localisation of a module. Structure sheaf of Spec(A). Definition of affine schemes. Schemes. Affine varieties.
LECTURE 6	19 oct	11:00	ROOM 134	THEORY	Quasicompact, connected, irreducible schemes. V(I) irreducible iff rad(I) is prime. Generic points on irreducible schemes. Morphisms of affine schemes. Spec is an equivalence Rings^op —> Aff.
LECTURE 7	24 oct	9:00	ROOM 134	THEORY	Examples of affine (and not affine) schemes and morphisms. Schemes over a base, closed subschemas. Hom(-,Y) is a sheaf. Morphisms to an affine scheme (adjunction). Affinisation.
LECTURE 8	26 oct	11:00	ROOM 134	THEORY	Proj of a graded A-algebra: Zariski topology and structure sheaf. Projective varieties. Projective A-schemes.
LECTURE 9	27 oct	9:00	ROOM 134	EXERCISES	Exercises on Spec and Proj.
LECTURE 10	31 oct	9:00	ROOM 134	EXERCISES	Exercises on projective varieties.
LECTURE 11	7 nov	9:00	ROOM 134	THEORY	Irreducible components. Locality Lemma. Reduced schemes. Integral schemes.
LECTURE 12	9 nov	11:00	ROOM 134		
LECTURE 14	14 nov	9:00	ROOM 134		
LECTURE 24	16 nov	11:00	ROOM 134		
LECTURE 13	17 nov	9:00	ROOM 134		
LECTURE 15	21 nov	9:00	ROOM 134		
LECTURE 23	23 nov	11:00	ROOM 134		
LECTURE 16	28 nov	9:00	ROOM 134		
LECTURE 17	30 nov	11:00	ROOM 134		
LECTURE 18	5 dec	9:00	ROOM 134		
LECTURE 19	7 dec	11:00	ROOM 134		
LECTURE 20	12 dec	9:00	ROOM 134		
LECTURE 21	14 dec	11:00	ROOM 134		
LECTURE 22	19 dec	9:00	ROOM 134		
LECTURE 25 (PHD)			ROOM 134		
LECTURE 26 (PHD)			ROOM 134		
LECTURE 27 (PHD)			ROOM 134		
LECTURE 28 (PHD)			ROOM 134		
LECTURE 29 (PHD)			ROOM 134		
LECTURE 30 (PHD)			ROOM 134		