

SYLLABUS FOR “SINGULARITY THEORY I”

I. Basic properties of complex spaces and germs.

- I.1. Weierstrass theorems with applications to analytic algebras.
- I.2. Complex spaces, complex space germs and singularities.
- I.3. Finite morphisms and finite coherence theorem.
- I.4. Applications of the finite coherence theorem.
- I.5. Finite morphisms and flatness.

II. Hypersurface singularities.

- II.1. Invariants of hypersurfaces singularities.
- II.2. Finite determinacy.
- II.3. Algebraic group actions.
- II.4. Classification of simple singularities.
- II.5. Topology of isolated hypersurface singularities.
- II.6. Plane curve singularities. Parametrization.