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.