

DEPARTMENT OF MATHEMATICS

ORAL EXAMINATION

Minor area: HOMOLOGICAL ALGEBRA

Sources: Hilton-Stambach - A course in Homological Algebra
Gerstenhaber - On the Deformation of Rings and Algebras
A Hodge Type Decomposition for Commutative Cohomology

Topics: Chain and Cochain complexes
Homology and Cohomology
Chain Homotopy
Projective and Relative Projective Modules
Resolutions of Modules
Yoneda Theory and its Module Structure
Group Cohomology
Separable Algebras
Deformations of Algebras
Cohomology type Algebras
Hochschild Cohomology
Harrison Cohomology
Hodge type Decomposition