

Syllabus for Introduction to Algebraic Geometry

- (1) Ideals in polynomial rings
- (2) Prime ideals and primary decomposition
- (3) Hilbert basis Theorem
- (4) Noether normalization
- (5) Hilbert Nullstellensatz
- (6) Projective varieties
- (7) Algebraic curves
- (8) Bezout's Theorem
- (9) Elementary dimension theory

First five topics can be found in any book on introductory commutative algebra. The last four topics can be found in introductory algebraic geometry book.

References:

- (1) Undergraduate commutative algebra --Miles Reid
- (2) Introduction to commutative algebra --Atiyah and Macdonald
- (3) Basic algebraic geometry --Shafarevich
- (4) Algebraic Geometry --Joe Harris