

SPRING 2017
MATH 595MAG
MODERN ALGEBRAIC GEOMETRY, II

CRN: 64836

Time: TBA

Instructor: Sheldon Katz

Text: Algebraic Geometry, R. Hartshorne, Graduate Texts in Mathematics
52, Springer NY 1977

Prerequisites: Modern Algebraic Geometry (Math 512) or equivalent, or
permission of the instructor

This first half minicourse develops the foundations of the theory of derived functors in algebraic geometry, including cohomology.

The course will for the most part follow the content of chapter III in the text. The classroom development may differ from the text. The text will frequently be supplemented with additional materials designed to enhance geometric intuition.

Topics covered include cohomology of sheaves, Ext groups and sheaves, Serre duality, higher direct images, and applications. We will learn how to use these techniques in both general and concrete situations in algebraic geometry, especially in the theory of projective varieties over an algebraically closed field.