

Math 708 - Complex Algebraic Geometry - Spring 2018

Mondays and Wednesdays 2:30 PM → 3:45 PM LGRT 1322

Instructor: Eyal Markman

Office: LGRT 1223G

Office Phone: 545-2788

E-mail: markman@math.umass.edu

Course Web page: <http://www.math.umass.edu/~markman/>

Office hours: Wednesday 10:00 → 11:00 am, Friday 1:00 → 2:15 PM, and by appointment.

Prerequisites: Complex analysis of one variable at the level of Math 621 and Differentiable manifolds at the level of Math 703.

References: The main textbooks will be:

1. “Complex Geometry, an introduction”, by Daniel Huybrechts, Springer Univeritext, 2005.
2. “Principle of algebraic geometry”, by P. Griffiths and J. Harris.

Course Plan: The basic techniques of Kähler geometry, Hodge theory, line and vector bundles, needed for the study of the geometry and topology of complex projective algebraic varieties, will be introduced and illustrated in basic examples such as Riemann surfaces, algebraic surfaces, abelian varieties, and Grassmannians. The core material is contained in Chapters 0 and 1 of Griffiths and Harris and in an expanded and more detailed form in the first five chapters of Huybrechts’ book.

Homework: Will be assigned biweekly.

Grades: Will be determined by each student’s individual progress, homework, and class participation.