

# Math 797 - Complex Algebraic Surfaces - Spring 2009

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

**Instructor:** Eyal Markman

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**Office hours:** Wednesday 5:00 → 6:30 pm, Friday 9:00 → 10:00 AM, and by appointment.

**Prerequisites:** Familiarity with the basic language of algebraic geometry (divisors, differential forms, and sheaf cohomology) will be needed. Those who took Algebraic Geometry 797 in Spring 2008 are all set. We will accommodate also students who took a course on Riemann surfaces or algebraic curves. Those students are advised to read about sheaves and Čech cohomology. If you used R. Miranda's "Algebraic curves and Riemann surfaces" then the relevant chapters are: IX, X, and the first three sections of XI.

## References:

1. The main textbook will be: "Complex algebraic surfaces", by Arnaud Beauville, translated by R. Barlow, London Mathematical Society Student Texts 34. Any version of this text is fine.
2. "Compact complex surfaces", by Barth, Wolf P.; Hulek, Klaus; Peters, Chris A. M.; Van de Ven, Antonius. Second edition. Springer-Verlag, Berlin, 2004.
3. "Principle of algebraic geometry", by P. Griffiths and J. Harris.
4. "Algebraic Geometry", by R. Hartshorne, Springer Verlag GTM 52, 1977.
5. "Chapters on algebraic surfaces", by Miles Reid, available on the web at: <http://www.warwick.ac.uk/~masda/> under "algebraic geometry links: Surfaces".

**Course Plan:** We will study the theory of (complex) algebraic surfaces, with the goal of understanding Enriques' classification of surfaces.

**Homework:** Will be assigned.

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