

# MTH 935: Complex Geometry

**Lecture:** C301 Wells Hall, TTh 10:20-11:40.

**Instructor:** Xiaodong Wang

- Office: Wells Hall D202
- Email: [xwang@math.msu.edu](mailto:xwang@math.msu.edu)
- Office Hours: MW 2:00PM-3:30PM.

**Prerequisite:** Complex analysis (MTH 425), MTH 868 (smooth manifolds).

**Course description:** This is an introduction to complex geometry. We will cover the following topics: holomorphic functions of several variables on domains of  $\mathbb{C}^n$ , complex manifolds, holomorphic vector bundles and Chern classes, Kahler metrics, sheafs and their cohomology, Hodge theory, the Riemann-Roch theorem and proof for Riemann surfaces.

**References:**

- D. Huybrechts, *Complex geometry: An Introduction*, Springer, 2005. (Textbook)  
Electronic version available at <http://springerlink.com/>  
(Search 'complex geometry' and then select 'books' from content type on the right. The book is the first on the list.)
- P. Griffiths and J. Harris, *Principles of Algebraic Geometry*, Wiley.
- O. Foster, *Lectures on Riemann Surfaces*, Springer.

**Grading:** No exams. 3 or 4 Homework assignments.