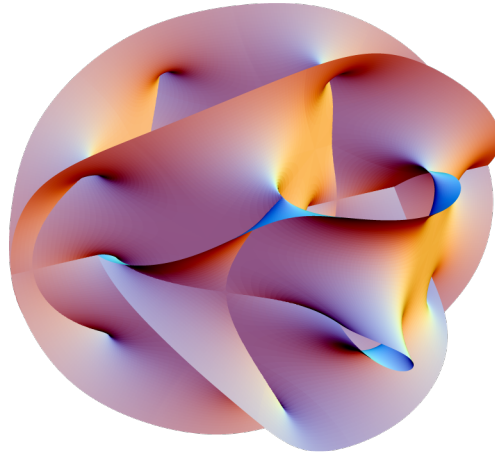


MAT 598 – Kähler & Complex Geometry (Fall 2021)



Instructor: Maxwell Stolarski	Lecture: TTh 1:30–2:45pm
Email: mstolars@asu.edu	Room: Wexler A302

Course Description: **Complex geometry combines the study of complex analysis with the study of smooth manifolds.** This course will introduce foundational results in the theory of complex manifolds accompanied by applications to interesting examples and the development of computational tools. In particular, we'll study Kähler manifolds, complex manifolds with a compatible Riemannian metric.

Prereqs: Students should be familiar with **complex analysis** and **smooth manifolds**. You'll get more out of the class if you know simplicial/singular homology and DeRham cohomology, but these aren't required.

Textbook: (Optional) *Principles of Algebraic Geometry* by P. Griffiths and J. Harris

Expectations: There are three possible types of final projects you may complete to earn credit in the course: an encyclopedia of material covered in the course, an article on a supplement topic, or a 30-minute talk on a supplemental topic.

Topics: Complex analysis in several complex variables, sheaves, Čech cohomology, intersection theory, vector bundles, Hodge theory, divisors, line bundles, Chern classes, the Kodaira embedding theorem, the Calabi-Yau theorem, etc.

For further details, see the syllabus linked in the ASU Course Catalog/Class Search at <https://webapp4.asu.edu/catalog/>.