

**MATH 312A - GEOMETRY
FALL 2007**

TTH: 1:10 - 2:30 P.M. (HATHORN 100)

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Office hours: T: 2:30pm - 3:30pm, W: 2:00pm - 3:00pm, Th: 11:00am - 12:00pm, or by appointment

Prerequisites: Math 206

Tentative Syllabus:

Geometry is perhaps the oldest field in mathematics. Since the time of the ancient Greeks, geometry has dominated the field of mathematics for over two thousand years. In this course, selected topics of geometry are discussed, in particular, differential geometry, modern approach to classical Euclidean geometry and hyperbolic geometry.

Differential Geometry: Curves in three-space, Gaussian curvature of surfaces (approx. 3 weeks);

Euclidean Geometry: Isometries, matrices of transformations, tessellations, frieze patterns, wallpaper patterns, regular solids (approx. 5 weeks);

Non-Euclidean Geometry: Hyperbolic Plane, Isometries (approx. 2 weeks)

Grades: Presentation (of homework) - 35%; Papers(written homework, abstracts) - 30%; final project (presentation - 10%; paper - 25%)