



**Catalog Description:**

Topics in Euclidean, spherical, and hyperbolic geometries. Connections to high school mathematics, calculus, and the theory of groups are emphasized.

**Prerequisite:**

C- or better in 3345 and in C- or better in 2568 or 5520H; or credit for 345, and credit for 568, 571, or 520H; or graduate standing.

**Text:**

Course notes.

**Purpose:**

This course treats Euclidean, spherical, and hyperbolic geometry from a unified point of view. Moreover, in this course students essentially write their own “textbook” with the proofs of a majority of the theorems left to the student. With this in mind, we hope to encourage the student to become a “do-er” of mathematics.

**Topics List:**

1. Neutral geometry.
2. Euclidean geometry.
3. Spherical geometry.
4. Hyperbolic geometry.