

Syllabus: MA 321 Elementary Geometry

Bulletin description:

A review the major topics (from secondary school curriculum) of plane and solid geometry from the modern viewpoint; axioms, undefined terms, definitions, theorems, and proofs.

Prerequisite: C or better in MA 320.

Text:

Text and materials are to be selected by the instructor. Previous choices include:

- John Stillwell, *The Four Pillars of Geometry*, Springer (2005). ISBN: 0-387-25530-3
- Musser and Trimpe, *College Geometry*. ISBN: 0-02-385450-2

Coverage: (described using *College Geometry*)

Chapter 1	1 week
Chapter 2	1.5 weeks
Chapter 3	1.5 weeks
Chapter 4	2 weeks
Chapter 5	2 weeks
Chapter 6	2 weeks
Chapter 7	2 weeks
Chapter 8	1 week
Chapter 9	1 week

Learning Objectives:

Students will have a deeper understanding of elementary geometry from a modern viewpoint. They will understand Euclidean constructions and Cartesian algebra, as well as more modern techniques involving incidence axioms and isometric transformations. Students will gain experience in solving problems and communicating mathematical ideas effectively. Optional topics include non-Euclidean geometry, projective geometry, and finite geometries.

Remarks:

The computer software package WINGEOM may be used in a lab setting in approximately half of the class meetings.

(<http://math.exeter.edu/rparris/winggeom.html>)