MATH 119 – Geometry for Architects

Course Description from Bulletin: Basic analytic geometry in two and three dimensions; trigonometry. Equations of lines, circles and conic sections; resolution of triangles; polar coordinates. Equations of planes, lines, quadratic surfaces. Applications. (3-0-3) (C)

Enrollment: This course does not count for graduation in any engineering, mathematics, natural science or computer science degree program

E.A. Abbott, *Flatland*, Dover

Other required material: None

Prerequisites: None

Objectives:
1. Students will learn to find the equation of a straight line satisfying given conditions.
2. Students will learn to do vector arithmetic problems including cross-product.
3. Students will learn to solve a right triangle using basic trigonometry.
4. Students will learn to find equations of lines and planes in space.
5. Students will learn to graph conic sections.

Lecture schedule: 3 50 minute (or 2 75 minute) lectures per week

Course Outline: Hours
1. Cartesian coordinates, distance and midpoint formulas in n-dimensions
2. Slope and equations of lines in the plane
3. Vectors
4. Trigonometric functions
5. Lines and planes in several dimensions
6. Conic sections
7. Hypercubes
8. Miscellaneous Topics

Assessment: Hours
Homework 5-10%
Projects 10-15%
Quizzes/Tests 50-60%
Final Exam 20-30%

Syllabus prepared by: Art Lubin and Jerry Frank
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