

MATH 431: FALL 2008
GEOMETRY FOR COMPUTER GRAPHICS:
ALL THE MATHEMATICS YOU NEED TO KNOW TO
GET A JOB IN THE GAME INDUSTRY!

Math 431 develops fundamental mathematics necessary for computer graphics:

- Projective geometry: the mathematics of perspective;
- Geometric transformations (rotations, reflections, translations, projections)
- Homogeneous coordinates, and data types for lines
- Basic topology

It will also be useful for students who wish to pursue Undergraduate Research Experience projects in the NSF-funded *Experimental Geometry Lab*. The picture below (lines on a cubic surface) was from a class project when the course was last taught in 2006.

Math 431 complements courses in the Computer Science Department. According to Dr. David Mount, Professor of Computer Science: “From personal experience, students who have taken MATH 431 have come to CS 427 (Graphics) and CS 498M (Game Programming) with a considerable advantage in their mathematical background.”

