

## **CS 537A: Interactive Computer Graphics**

**Instructor:** Philippos Mordohai (mordohai@cs.stevens.edu)

### **Textbooks**

Edward Angel

Interactive Computer Graphics: a top down approach with OpenGL (5th ed.)

Addison Wesley

ISBN-10: 0321535863

ISBN-13: 9780321535863.

D. Shreiner, M. Woo, J. Neider and T. Davis

OpenGL Programming Guide: The Official Guide to Learning OpenGL, Versions 3.0 and 3.1 (7th ed.)

Addison Wesley

ISBN-10: 0321552628

ISBN-13: 978-0321552624

**Use earlier online version:** <http://www.glprogramming.com/red/>

**Office Hours:** TBD

### **Evaluation**

Project 36%

4 homework sets 16% each

### **Schedule**

**Week 1:** Introduction

**Week 2:** Programming with OpenGL

**Week 3:** Input, interaction and event driven programming

**Week 4:** Geometry, coordinate systems and transformations

**Week 5:** OpenGL transformations, modeling and viewing

**Week 6:** Camera models and shading

**Week 7:** Shading II, clipping and scan conversion

**Week 8:** Hidden surface algorithms, line drawing and buffers

**Week 9:** Texture mapping, compositing and blending

**Week 10:** Programmable pipelines, introduction to GLSL and CUDA

**Week 11:** Hierarchical modeling and scene graphs

**Week 12:** Particle systems, curves and surfaces

**Week 13:** Bezier and spline curves and surfaces

**Week 14:** Ray tracing and radiosity