

CS 4451A: Computer Graphics
Spring 2005
MWF 10–11, CoC 102

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Office Hours: Monday and Friday after class (until noon), 1st floor CoC or by appointment, starting from the second week of classes.

TA: TBA, Office hours: TBA

Class webpage: TBA (will be accessible from <http://www.cc.gatech.edu/classes/>)

Class email: cs4451@cc.gatech.edu

Recommended textbook:

3D Computer Graphics, by: Alan Watt
Addison-Wesley, ISBN: 0201398559

Grading

- * 5 individual programming assignments (12 % each; in C/C++ under linux, have to run on the machines in the states cluster)
- * 2 tests (10 % each) Tentative dates: February 16 and April 12
- * final (20 %)
- * $\geq 90\%$ guarantees A, $\geq 80\%$ guarantees B, $\geq 70\%$ guarantees C ...

Approximate coverage, not necessarily in order:

1. Simple ray tracing
2. Graphics pipeline: transformations, perspective, Z-buffer, shading models, texturing, rasterization, OpenGL tricks (shadows, environment maps, bump mapping)
3. Geometric modeling topics: simplification, subdivision, polynomial curves and patches, spatial subdivision datastructures, delaunay triangulations and applications
4. Global illumination: local reflection and light scattering models (basics of photometry, BRDFs), elements of radiosity, more ray tracing
5. A few other fun topics like light fields, volume visualization, signal processing and antialiasing...