

**CS 4451A: Computer Graphics**  
**Spring 2004**  
**MWF 10–11, CoC 101**

Instructor: Andrzej Szymczak ([andrzej@cc.gatech.edu](mailto:andrzej@cc.gatech.edu))  
Office: TSRB 220  
Phone: 4-6609  
Office Hours: After class (until 11:45), 1st floor CoC  
TA: Justin Jang  
Webpage: <http://www.cc.gatech.edu/classes/AY2004/cs4451a.spring/>  
Email: [cs4451a@cc.gatech.edu](mailto:cs4451a@cc.gatech.edu)

**Textbook**

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

**Grading**

- \* 5 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 9 and April 2
- \* 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. Representing 3D objects: polygons, implicits
3. Graphics pipeline: transformations, perspective, Z-buffer, shading models, texturing, OpenGL tricks (shadows, environment maps, bump mapping)
4. Geometric modeling topics: simplification, subdivision, splines
4. Rasterization, Bresenham algorithm, antialiasing
5. More advanced local reflection and light scattering models (basics of photometry, BRDFs)
6. Global illumination: elements of radiosity, more ray tracing
7. Light fields