Exam 2 Next Week

Exam 2 Overview

- Wednesday, November 6, in-class
- Will cover lecture 6-8 (today’s class)
  - Does NOT include lectures 1-4
- Can bring:
  - One page cheat-sheet, hand-written (not typed)
  - Calculator
- Will test:
  - Theoretical concepts
  - Mathematics
  - Algorithms
  - Programming
  - OpenGL/GLSL knowledge (program structure and some commands)

What am I Really Testing?

- Understanding of
  - concepts (NOT only programming)
  - programming (pseudocode/syntax)
- Test that:
  - you can plug in numbers by hand to check your programs
  - you did the projects
  - you understand what you did in projects

General Advise

- **Read your projects** and refresh memory of what you did
- **Read the slides**: worst case – if you understand slides, you're more than 50% prepared
- Try to **predict subtle changes** to algorithm.. What ifs?..
- **Past exams**: One sample midterm is on website
- All lectures have references. Look at refs to focus reading
- Do all readings I asked you to do on your own

Grading Policy

- I try to give as much partial credit as possible
- In time constraints, laying out outline of solution gets you healthy chunk of points
- Try to write something for each question
- Many questions will be easy, exponentially harder to score higher in exam

Topics

- Viewing and Camera Control
  - Specifying, using view volume in program
- Lookat(Eye, COI, Up) to set camera
  - How to build 3 new vectors for axes
  - How to build world-to-eye transformation
  - Pitch, yaw, roll

Topics

- Projection
  - Derivation of orthographic, perspective transformations
- Lighting, shading and materials
  - Phong lighting model
  - Specifying lighting, material properties, programming it
  - Physically-based lighting, cook-Torrance
  - Non-photorealistic rendering (Toon shading)
- Shading (flat, smooth), interpolation
- Per-vertex, per-pixel lighting

Topics

- Texturing & Environment mapping
  - Steps to apply textures, parameters, etc
  - Refraction, reflection, texture lookup
- Cube, Sphere maps
  - Storage, lookup, etc