

CSCI 4229 Computer Graphics – Syllabus (Spring 2004)

Instructor: Jane Mulligan

Office: ECOT 527

e-mail: Jane.Mulligan@colorado.edu

Phone: 303-492-4591

Web Page: <http://www.cs.colorado.edu/~janem/CS4229/syllabus.html>

Class: ECCS 108 Tues 09:30am-10:45am, Thurs 09:30am-10:45am

Office Hours: Tues: 11:00-12:00, Wed 10:00-11:00

E-mail is the most reliable way to contact me.

TEXT: *Interactive Computer Graphics: A top-down approach using OpenGL (3rd Ed)* by Edward Angel.

Supplementary: *OpenGL: A Primer* – by Edward Angel.

This syllabus: <http://www.cs.colorado.edu/~janem/CS4229/syllabus.pdf>

Prerequisites: Knowledge of basic linear algebra and CSCI 2270 (skills: C/C++ programming, transforms, projections, basic trigonometry).

Ethics: The *Honor Code* (<http://www.colorado.edu/academics/honorcode/Code1.html>) will be strictly enforced. Assignments are to be written/implemented individually. All parties handing in identical (copied) work will receive a grade of 0. Similarly if material is determined to have been copied directly from other sources (the Internet) the grade will be 0.

Topics

1. Overview (Ch 1):
 - Applications, equipment, architectures.
 - Image Formation
2. Intro to OpenGL/GLUT (Ch 2)
 - 2D systems, primitives and attributes.
 - Basic colour, basic viewing.
3. Input devices and interaction (Ch 3)
 - Display lists
 - Event driven and interactive systems
4. Geometry and transformations (Ch 4)
 - Geometric objects and 3D primitives

- Transformations
- 5. Generating views: (Ch 5)
 - Projections
 - Viewpoints
- 6. Shading (Ch 6)
 - Reflectance: light and matter
 - Light sources and surface orientation
 - Shading algorithms
- 7. Basic Rendering (Ch 8)
 - Tasks: Modelling, geometry, rasterization, display
 - Clipping
 - Hidden surface removal
 - Scan conversion and antialiasing
- 8. Scene Graphs (Ch 9.8)
- 9. Curves and Surfaces (in brief, Ch 10)
- 10. Texture mapping (Ch 7.6)
- 11. Animation (Ch 9.6)
- 12. Compositing (Ch 7.9)

Grading:

- Assignments: 50%
- Midterm: 20%
- Project: 30%
- Late assignments will be penalized 10% per day after the due date.

Accommodations and Policies:

If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities. (303-492-8671, Willard 322, www.Colorado.EDU/disabilityservices).

Any students who have conflicts with scheduled exams, assignments or required attendance because of religious obligations should contact the instructor as soon as the course due dates are posted in order that alternate arrangements can be made.