

Computer Science 411/611
Virtual Reality Systems
Fall 2004
Syllabus

Instructor

Dr. Timothy Davis
303 McAdams Hall
656-0309
Office hours: T 5:00-6:00, W 3:00-4:00
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Class Meeting Times

TTh 2:00-3:15 McAdams 114

Class Cancellation

Students are expected to wait for 15 minutes after the beginning of class before leaving if the instructor is late.

Textbooks

William R. Sherman and Alan B. Craig, *Understanding Virtual Reality: Interface, Application, and Design*, Morgan Kaufmann, 2003. (optional)

Alan Watt, *3D Computer Graphics (3rd Edition)*, Addison-Wesley, 1999. (optional)

Edward Angel, *OpenGL: A Primer (2nd Edition)*, Addison-Wesley, 2004. (optional)

David Shreiner, et al, *OpenGL Programming Guide: The Official Guide to Learning OpenGL, Version 1.4 (4th Edition)*, Addison-Wesley, 2004. (optional)

Grading

Final grades will be based on programming and homework assignments, a midterm test, and a final exam with appropriate weights based on difficulty. The midterm and/or final may be an in-class test, a programming assignment, or an in-class presentation.

Projects/HW	60%
Midterm	20%
Final	20%

Letter grades will be based on a 10-point scale. Plus/minus grades will also be assigned (e.g., 87.0-89.999 B+, 83.0-86.999 B, 80.0-82.999 B-). These ranges may be changed somewhat, but only to your advantage.

Programming Assignments

Programming assignments will constitute a significant portion of your grade for the course. Each of these assignments should follow the guidelines listed below.

- **Webpage** A webpage with your solution to the assignment must include:
 - description of the problem
 - description of the solution
 - user's guide
 - images produced by your code
- **Source Code** For each assignment, you will be notified on the method for submitting code.
- **Late Work** Late assignments will be accepted with penalty deemed appropriate.
- **Independent/Team Work** You must work on projects independently, unless specifically authorized to work in teams. Cheating of any kind will not be tolerated and will result in significant penalties.

411/611 Differences

Those students registered for the 611 section of this course will be required to submit additional work on some homework and project assignments.

Course Description

The course will cover various computer graphics topics in general and specific support of creating virtual environments. A rough outline of topics appears below:

- Introduction
- Tools and Equipment in VR
- Special Topics in Coding with OpenGL
- Color Models and Systems
- Mathematics of Virtual Environments
- The Rendering Equation
- Radiosity
- Texture Mapping
- Shadowing Techniques