

CMSC 23700
Fall 2005

Introduction to Computer Graphics

Handout 1
September 27

Course information

Instructor: John Reppy
Hinds 033

TA: David Press
Hinds 026

Lectures: TuTh 1:30-2:50
Ry. 251

Lab: Wed 3:30-4:50
MacLab (Regenstein Library)

Office hours: Wed. 10-12 (Reppy; Hinds 033)
Fri. 11:30-1:30 (Press; Hinds 026)

Mailing list: `cmssc23700@cs.uchicago.edu`
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Home page: `www.classes.cs.uchicago.edu/archive/2005/fall/23700-1`

Overview

This course aims to provide an introduction to the basic concepts and techniques used in 3D computer graphics. The main focus is on real-time rendering techniques, such as those found in computer games. These techniques include: coordinate systems and transformations; the graphics pipeline; basic geometric algorithms; texture mapping; shadows; and optimizations such as level-of-detail and culling.

The course covers both the theory and practice of computer graphics. The lectures, homework assignments and exam will focus on the mathematical foundations of computer graphics, while while the lab sessions and programming projects deal with translating theory into practice. Note that the lab section is a required part of the course and you are responsible for the material presented in lab.

Texts

The main text for the course is

Mathematics for 3D Game Programming & Computer Graphics (2nd Edition)
by Eric Lengyel
Charles River Media, 2004

We strongly recommend that you also obtain a copy of

OpenGL: A Primer (2nd Edition)
Edward Angel
Addison Wesley, 2004

If your knowledge of C is uncertain, or if you are looking for a good C reference, you may want to acquire

C – A Reference Manual (5th Edition)
by Samuel P. Harbison and Guy L. Steele Jr.
Prentice Hall, 2002

These books are all available from the Campus Book Store.

We have also placed a number of different texts on reserve. In the Mac Lab we have two copies each of the following books, which are available for use in the Mac Lab.

OpenGL: A Primer
Edward Angel
Addison Wesley, 2002

OpenGL Programming Guide (3rd Edition)
by Mason Woo, Jackie Neider, Tom Davis, and David Shreiner
Addison Wesley, 1999

OpenGL Reference Manual (3rd Edition)
edited by David Shreiner
Addison Wesley, 1999

The following books are on 24-hour reserve in Eckhart library:

Real-time rendering (2nd Edition)
by Tomas Akenine-Moller and Eric Haines
A.K. Peters, 2002

Geometric Tools for Computer Graphics
by Philip J. Schneider and David H. Eberly
Morgan Kaufmann, 2002

Labs

In addition to the lectures, you should be registered for one of the lab sessions. These sessions are held from 3:00-4:30 on Thursdays in the Mac Lab in Regenstein Library. These lab sessions are important and you are expected to attend. All material and discussion related to the programming projects (with the exception of the handing out of assignments) will be presented in the lab sessions.

Assignments and Grading

There will be both written homework assignments and programming projects. In addition, there will be a midterm exam in class on Thursday, November 17th. Grades will be assigned based on roughly the following weights:

Homework	20%
Midterm exam	30%
Projects	50%

Paper copies of the assignments will be distributed in lecture and electronic copies will be made available for the course web page. Homework assignments should be handed in at the beginning of class the day they are due. Programming projects will be automatically collected from your course CVS repository. In general, late homework and programming assignments will not be accepted, although valid excuses delivered before the assignment is due will be considered.

Academic Honesty¹

The University of Chicago is a scholarly academic community. You need to both understand and internalize the ethics of our community. A good place to start is with the Cadet's Honor Code of the US Military Academy: "A Cadet will not lie, cheat, or steal, or tolerate those who do." It is important to understand that the notion of property that matters most to academics is ideas, and that to pass someone else's ideas off as your own is to lie, cheat, and steal.

The University has a formal policy on Academic Honesty, which is somewhat more verbose than West Point's. Even so, you should read and understand it.

We believe that student interactions are an important and useful means to mastery of the material. We recommend that you discuss the material in this class with other students, and that includes the homework assignments. So what is the boundary between acceptable collaboration and academic misconduct? First, while it is acceptable to *discuss* homework, it is not acceptable to turn in someone else's work as your own. When the time comes to write down your answer, you should write it down yourself from your own memory. Moreover, you should cite any material discussions, or written sources, for example,

¹In keeping with the spirit of this section, credit must be given to Stuart Kurtz for text.

Note: I discussed this exercise with Jane Smith.

The University's policy, for its relative length, says less than it should regarding the culpability of those who know of misconduct by others, but do not report it. An all too common case has been where one student has decided to "help" another student by giving them a copy of their assignment, only to have that other student copy it and turn it in. In such cases, we view both students as culpable and pursue disciplinary sanctions against both.

For the student collaborations, it can be a slippery slope that leads from sanctioned collaboration to outright misconduct. But for all the slipperiness, there is a clear line: present only your ideas as yours and attribute all others.

If you have *any* questions about what is or is not proper academic conduct, please ask your instructors.