Course information

Instructor: John Reppy
                  Ryerson 256

Lab TA: Lamont Samuels

TA: Tri Huynh

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

Labs: Wed 2:30-3:50
                  CSIL 1 (Crerar Library)
                  Wed 4:00-5:20
                  CSIL 1 (Crerar Library)

Office hours: Monday 10-11 (Reppy; Ry 256)
                  Wednesday 10-12 (Huynh; Ry 162)
                  Friday 1-2 (Reppy; Ry 256)

Web page: `www.classes.cs.uchicago.edu/archive/2015/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.

Note: the information in this handout is subject to change; please check the class web page for the latest information.

Texts

The main text for the course is

> *Mathematics for 3D Game Programming and Computer Graphics (3rd Edition)*
> by Eric Lengyel
> Cengage Learning PTR, 2011.

and you should also obtain a copy of

> *OpenGL SuperBible: Comprehensive Tutorial and Reference (7th Edition)*
> Graham Sellers, Richard Wright, and Nicholas Haemel
> Addison Wesley, 2015
> *The 6th Edition of this book is also sufficient for the course*

These books are all available from the Seminary Coop bookstore.

Labs

In addition to the lectures, you should be registered for a lab session. Labs are held from 2:30-3:50 and 4:00-5:20 on Wednesdays in the Computer Science Instructional Laboratory in Crerar 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. You will also occasionally be expected to demo your projects in Lab and there will be a **required** final project demo during exam week.

Assignments and Grading

There will be both written homework assignments and programming projects. In addition, there will be two exams given in the evening (7-9pm) on Wednesday February 5th (5th week), and Wednesday March 5th (9th week). Grades will be assigned based on *roughly* the following weights:

Homework	20%
Midterm exam	30%
Projects	50%

Assignments will be distributed via 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 gforge repository. In general, late homework and programming assignments will not be accepted, although valid excuses delivered before the assignment is due will be considered.

Project grades will consist of a correctness portion (worth 70%) and a style portion (worth 30%). Your code *must* compile. Failure to compile will result in a 0 for the correctness portion of the grade.

Syllabus

The course webpage has a tentative syllabus organized by lecture with associated readings. Note that not all topics that we will cover in class are covered in the main text.

Academic Honesty[1]

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,

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Note:  I discussed this exercise with Jane Smith.
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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 slipperyness, 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.

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