

**CMSC 23700
Winter 2008**

Introduction to Computer Graphics

**Project 2
January 29**

**A simple OpenGL viewer
Due: Wednesday, February 6 at 3pm**

1 Summary

This project is the second part of a three-part project. In it, you will extend the Project 1 code to use programmable shaders for lighting.

2 Description

You should extend your solution to project 1 with an additional keyboard command.

`s` toggle the rendering mode between shaders and fixed pipeline.

Your shader program should implement the same lighting modes as the fixed pipeline, but with per-pixel shading. The `gl_LightSource[]` uniform variable holds the state of the lights, which your shader program can use to determine the lighting mode. Your shader should support ambient and diffuse lighting.

We will provide sample code for the simulation and utility code for loading and compiling shaders. You will need to write the rendering code, but you should be able to use your code from Project 1 as a starting point.

2.1 Extra credit

For extra credit, make your balls shiny and implement specular lighting. Ph.D. students who are taking this course to satisfy their systems requirement should do the extra credit.

3 Submission

We will set up a **gforge** repository for each student on the Computer Science server (see the *Lab notes* (Handout 2) for more information on **gforge**). We will collect the projects at 3:30pm on Wednesday February 6th from the repositories, so make sure that you have committed your final version before then. You will also be expected to demonstrate your code during Lab in Week 5 (February 6).