

# CS4204 Computer Graphics Fall 2007

## Homework Assignment 1

### Due Dates

Assignment 1 is due on Monday, 8/27/2007 Midnight.

### Introduction

You need to write an application program that uses the OpenGL graphics package to draw a scene (or scenes) of your own design. Your scene must include one or more of each of the elements described below. **The scene should have the first letter of your name in it.**

### Important Elements

Your program must contain at least one instance of each of the following types of objects:

- Points – `GL_POINTS`
- Triangles – `GL_TRIANGLES`, `GL_TRIANGLE_STRIP`, `GL_TRIANGLE_FAN`
- Quads/Rectangles – `GL_QUADS`, `GL_QUAD_STRIP`
- Polygons – `GL_LINE_LOOP`, `GL_POLYGON`
- Lines – `GL_LINES`
- Polylines – `GL_LINE_STRIP`

i.e. for Triangles, your program should contain at least one usage of a `GL_TRIANGLE`, at least one usage of

`GL_TRIANGLE_STRIP` and at least one usage of `GL_TRIANGLE_FAN`.

In addition, you must experiment with at least one instance of each of the following state modifications:

- Filled polygon – `glPolygonStipple()`
- Color – `glColor*()`
- Point Size – `glPointSize()`
- Line style – `glLineStipple()`
- Line Width – `glLineWidth()`

You may, of course, use any number of variations on these. You are also encouraged to experiment with the mouse and keyboard callbacks. You must include specific running instructions in a `description.txt` file when you submit your program. The `description.txt` file must also include the basics of what your program does (or was supposed to do) and how you met the requirements of this project.

### What to Submit

Put your solution in one C++ source files, named `assignment1.cpp`. Send the source file to your TA, Sean Ponce, via email [ponce@vt.edu](mailto:ponce@vt.edu).

### Grading

Your overall grade will be based on the following:

- Demonstration of the required routines
- Complexity of your graphical output
- How good was your `descriptions.txt` file?
- The design of your code - is your coding style consistent, readable, commented and modularized?