

# CS4204 Computer Graphics Fall 2014

## Homework Assignment 1

### Due Dates

Assignment 1 is due on Friday, 9/5/2014 11:59pm.

### 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 primitives, each rendering type counts for 5 points in your final grade (**50 points**):

- 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_TRIANGLES`, at least one usage of

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

In addition, you must experiment with all the following state modifications, 5 points for each state (**15 points**):

- Color – `glColor*()`
- Point Size – `glPointSize()`
- 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 (**15 points**). 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`. Zip the `cpp` file and `description.txt` into `assignment1.zip`, and upload the zip file to the Dropbox of the scholar site for this course.

### Grading

Your overall grade will be based on the following:

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