**Graphics or Games & Dynamic Modelling Coursework Test Specification**

Below is a list of all the tasks I attempted to implement into the shader program:

* Task 1: Complete lighting and reflection model
* Task 2: Task 1 but with diffuse reflections calculated from a texture
* Task 3: Extend task 2 to include a separate texture for specular reflections
* Task 7: Basic parallax occlusion mapping
* Task 8: Steep parallax mapping
* Task 10: Normal mapping with Phong model specular reflection

**How to run the shader program**

When you have retried the shader program from the repository, run ‘OpenGL Framework.sln’. This can be found inside the folder ‘OpenGL-Shader-Demo’.

When you have opened OpenGL Framework.sln, compile and run the program. A cube, where each face of the cube is textured with a lion’s head with 2 pillars and a stone wall background, should display. Use a mouse click and drag the cube to rotate it. Diffuse and specular reflections should be visible and should change when light shines at different angles. Reflections should be approximate to real-world examples. There should also be a noticeable parallax effect on the textures.

Three different keyboard functions have been provided to manipulate certain lighting aspects of the scene: ambient lighting intensity, direct lighting intensity and parallax effect intensity.

To increase ambient lighting intensity, press key ‘n’. To decrease ambient lighting intensity, press key ‘m’.

To increase direct lighting intensity, press key ‘k’. To decrease direct lighting intensity, press key ‘l’.

To increase parallax effect intensity, press key ‘o’. To decrease parallax effect intensity, press ‘p’.

To exit the program, press key ‘esc’.