

CS5500 Computer Graphics

Assignment 3

Due: 23:59 April 25, 2007

(10% penalty for each day late)

(1) Use GLUT to display and interact with the dragon.obj model. Your program must allow the user to move and rotate the model freely.

(2) Process the normal vectors (i.e., the \mathbf{vn} records and their indices in the \mathbf{f} records) and add lighting effects to your program. Use GLUT to add control of the light position as well.

(3) Add texture mapping using texture coordinates (i.e., the \mathbf{vt} records) already included in the dragon.obj model. (Texture image will be provided.)

(4) (Extra Credit) Show the model with texture AND specular lighting.

(Hint: Use `glLightModel(`

`GL_LIGHT_MODEL_COLOR_CONTROL, GL_SEPARATE_SPECULAR_COLOR)` in OpenGL 1.2, or use 2-pass rendering in older versions.)

A description of the OBJ format is available online at:

http://www.eg-models.de/formats/Format_Obj.html

Submit your program source files online through course website.