

C++ 3D Assignment 3 (2.5 pts) – Ambient, Diffuse & Specular

Learning goal 3: Applying the ADS lighting model in OpenGL (*see lecture 3*)

ASSIGNMENT

Implement lights in the MGE.

GRADING CRITERIA

- To **pass** this course, each assignment needs to be **finished at the ‘mediocre’ level at least**, and all assignments together need to result in a minimum grade of **at least 5.5 points** (e.g. 1 ‘mediocre’ + 3 ‘averages’).
- To **pass** a level for a specific rubric you also need to pass all the ‘lower’ levels in that rubric **and be able to explain all your implementation changes**.

MEDIOCRE (1 PTS):

Point light implemented.

Fragment lighting implemented with ambient and diffuse components.

No hardcoded values used, instead lighting data is correctly acquired through your scene graph.

AVERAGE (1.5 PTS):

Specular reflection component implemented.

You can explain the formula for the specular reflection.

Attenuation implemented.

GOOD (2 PTS):

Multiple lights implemented.

EXCELLENT (2.5 PTS):

Spotlight implemented.

Shader switches light calculation dynamically based on the Light type (DIRECTIONAL, POINT, SPOT).

Cookie bonus: animated or adjustable values at runtime.