CSE 121 : Game Development II / 3D Game Programming

Credits 5

Moving to the third dimension is quite a jump from 2D game development. Learn about the math involved and how to create 3d models for use in 3D worlds.

Prerequisites

CSE 111 and concurrent enrollment in CSE 141

Course Outcomes

Learn to use 3D modeling software to create objects for 3D worlds.

Work with bitmaps and shading techniques to create materials.

Learn about 3D rendering techniques and the pros/cons of each.

Understand 3D acceleration and how video cards reduce processing load on the CPU.

Write C# code that uses Direct3D or OpenGL to render 3D worlds.

Import 3D models into virtual worlds.

Learn 3D animation techniques such as inverse kinematics and pre-positioned frames.

Use pixel shaders and lighting techniques to add realism.

Gain familiarity with mathematical equations required to render 3D objects on a 2D screen.

Synchronize game data across the network to facilitate multiplayer virtual worlds.