

Brooklyn College
Department of Computer and Information Science

CISC 3620 [41] Computer Graphics

3 hours 3 credits

Fundamentals of computer graphics programming. Graphics hardware and software standards. 2D geometric primitives and raster images. 3D object representations. Data structures, algorithms, and the graphics pipeline. Graphical user interfaces. Underlying concepts in computer graphics systems, including games, animation, modeling, rendering, and paint systems.

Textbooks

Angel, [*Interactive Computer Graphics: A Top-Down Approach Using OpenGL, 5/E*](#), Addison-Wesley.

Syllabus

1. Introduction
2. Basic Line Drawing Algorithms
3. Overview of Graphics Programming in OpenGL
4. User Interaction - Introduction to GLUT
5. Mathematics Review
6. Geometric Objects and Transformations
7. Viewing
8. Rasterization
9. Selected Advanced Topics

Bibliography

- Shriener, et al, [*OpenGL® Programming Guide: The Official Guide to Learning OpenGL®*](#), Addison-Wesley Professional.

*(Known as **The Bluebook** -- This is more of a refence manual-- basicallly a collection of man pages for the commands. Again, can be found online as well a bit more difficult to find though than the Redbook).*

- Kilgard, *The OpenGL Utility Toolkit (GLUT) Programming Interface*
- *The API specification for GLUT-- This is available in [PDF](#) or [HTML](#) format.*