CAP-5701 Advanced Computer Graphics

Catalog Description
Advanced topics in computer graphics; system architecture, interactive techniques, image synthesis, current research areas. (3 credits)

Prerequisites
SCIS Graduate Standing

Type
Elective for Graduate Students

Course Objectives
Students will learn OpenGL rendering pipeline, geometric primitives and representations, texture mapping, surface parameterization, and application examples.

Topics
Introduction and Motivation
Fundamental Mathematics and Geometry
Graphics Primitives and Representations
Geometric Transformations and 2D/3D Viewing
Meshes and Half-Edge Data Structure
Ray Tracer and Rendering
Texture Mapping and Surface Parameterization

Textbook
N/A

Reference
Donald Hearn, M. Pauline Baker and Warren R. Carithers, *Computer Graphics with OpenGL, Fourth Edition*, (Prentice Hall, 2010).

Last Update
Wei Zeng 04/26/2019