

## CS 6250 : ADVANCED COMPUTER GRAPHICS

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<i>Semester Hours:</i>	3.0	<i>Contact Hours:</i> 3
<i>Coordinator:</i>	Jong Kwan "Jake" Lee	
<i>Text:</i>	Various	
<i>Author:</i>	VARIOUS	
<i>Year:</i>	Various	

### SPECIFIC COURSE INFORMATION

#### *Catalog Description:*

Topics may include hidden line/surface algorithms, curved lines and surfaces, illumination and shading techniques, color models, geometric and solids modeling, animation, graphics for game programming, virtual reality, image processing, image compression, and pattern recognition algorithms. Prerequisites: Admission to MS in CS program, or consent of department; and CS 5250 or equivalent.

Course type: **ELECTIVE**

### SPECIFIC COURSE GOALS

- I can use OpenGL libraries for graphics-related implementations.
- I understand the basics of 3D graphics.
- I know how to produce 2D and 3D graphics using rendering methods.
- I can implement basics of image processing methods.
- I know the basics of image segmentation techniques.

### LIST OF TOPICS COVERED

- X-Windows
  - Client/Server model
  - XLIB graphics toolkit
  - Graphical User Interface Toolkits
- Hidden line/surface algorithms
  - Z-buffer
  - Heedless Painter
  - Scanline methods
  - Area Subdivision methods
- Curved line and surfaces

- Hermite, Bezier and Splines
  - Bi-cubic surfaces
  - Drawing Techniques
- Color
  - Theory of color
- Color Models