CS 6250 ADVANCED COMPUTER GRAPHICS

Semester Hours: 3.0
Coordinator: TBD
Text: TBD
Author(s): TBD
Year: TBD

Contact Hours: 3

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

- TBD

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
- Color Interpolation techniques

- Realism Techniques
  - Illumination Models

- Shading
  - Flat, Gouraud, Phong
  - Color issues

- Texture & Bump Mapping
  - Shadow & transparency effects
  - Ray Tracing
  - Radiosity

- Additional topics as time permits
  - JPEG and MPG standards

- VRML
  - Fractals