ME 57400 (CS 57400)
ADVANCED COMPUTER GRAPHICS APPLICATIONS

Course Outcomes
1. Develop an understanding of advanced computer graphics concepts.
2. Apply computer graphics concepts and systems to design and develop a large-scale application that uses computer graphics to solve a technical problem.

Concepts

3D Graphics Systems and Methods
(6 wks)
1. OpenGL
2. Basic 3D Graphics
3. Texture Mapping
4. Blending
5. High Performance Graphics Methods
6. 3D Interaction Methods

Advanced Geometric Modeling
(4 wks)
1. 3D Data Representations and Methods
2. Solid Modeling Methods and Systems

Applications (5 wks)
1. Project Topic Formulation
2. Project Design and Development
3. Technical Presentations on Project Topics
4. Project Presentations

Revision Date: 7/30/2012
1. **COURSE NUMBER AND TITLE:** ME 57400 (CS 57400) Advanced Computer Graphics Applications

2. **CREDITS AND CONTACT HOURS:** 3 credits
   - Lecture – 3 days per week at 50 minutes for 16 weeks

3. **COURSE COORDINATOR OR INSTRUCTOR:** D.C. Anderson

4. **TEXTBOOK:** None

5. **SPECIFIC COURSE INFORMATION:**
   - **a. Catalog Description:** Direct application of interactive computer graphics to selected independent research projects. The projects are chosen, developed and implemented by the students in great detail, including documentation and presentation. Typically offered in the spring.
   - **b. Prerequisites:** ME 57300 (CS 53500) – Interactive Computer Graphics
   - **c. Status:** Elective

6. **SPECIFIC GOALS FOR THE COURSE**
   - **a. Course Outcomes:**
     1. Develop an understanding of advanced computer graphics concepts.
     2. Apply computer graphics concepts and systems to design and develop a large-scale application that uses computer graphics to solve a technical problem.
   - **b. Related ME Program Outcomes:**
     A1. Engineering Fundamentals; B3. Prof/Ethical Responsibility;  
     A3. Experimental Skills; B5. Life-Long Learning;  
     A4. Modern Engr Tools;   C1. Leadership,  
     A5. Design Skills;       C2. Global Engineering Skills;  
     A6. Impact of Engr Solns; C3. Innovation;  
     B1. Communication Skills; C4. Entrepreneurship

7. **LIST OF TOPICS:** See following page.

**PREPARED BY:** D.C. Anderson  
**REVISION DATE:** July 30, 2012