

CSCE 565: Computer Graphics

1. Course number and name: CSCE 565: Computer Graphics
2. Credit: 3-hrs; Contact: 3 lecture periods of 50 minutes or 2 periods of 75 minutes per week
3. Instructor: Wang
4. Textbook: Edward Angel, *Interactive Computer Graphics: A Top-Down Approach Using OpenGL*, 4th edition, Addison-Wesley, Boston, MA, 2006.

Dave Schreiner, Mason Woo, Jackie Neider, and Tom Davis, *OpenGL Programming Guide: The Official Guide to Learning OpenGL, Version 2*, 5th edition, Addison-Wesley, Boston, MA, 2006.

5. Specific course information
 - a. Catalog description: Graphics hardware; graphics primitives; two-dimensional and three-dimensional viewing; basic modeling.
 - b. Prerequisites: CSCE 240, MATH 526 or 544
 - c. Elective Course
6. Specific goals for the course
 - a. Specific outcomes of instruction are that students will be able to:
 1. Describe the concept of OpenGL
 2. Describe geometrical transformations involved in computer graphics
 3. Describe the fundamentals of graphics hardware
 4. Describe shading models
 5. Model simple objects using OpenGL primitives
 6. Write a program to render scenes with OpenGL
 7. Use advanced techniques to render realistic computer graphic images
 - b. As an elective this course cannot be counted upon to contribute to the attainment of any student outcome.
7. Topics covered and approximate weight (14 weeks, 4 hours/week, 56 hours total)
 1. Computer graphics hardware (1 lecture)
 2. Geometrical transformation (6 hours)
 3. Shape modeling (4 hours)
 4. Surface shading (4 hours)
 5. Hidden surface removal (3 hours)
 6. Ray tracing (4 hours)
 7. Texture mapping (2 hours)

8. Realistic rendering (6 hours)
9. OpenGL programming (6 hours)

c.

Computer Engineering

Relation of Course Outcomes to EAC Student Outcomes*

Course Objectives	Program Outcomes										
	1. Logic & Math	2. Computing Fundamentals	3. Apply Computing Principles	4. Work on teams	5. Communicate Effectively	6. Liberal arts & Soc. Sciences	7. Basic Science and Lab Procedures	8. Learn New Tools & Processes	9. Employed upon Graduation	10. Application Area	11. Electronics and Digital Sys Design
1. Describe the concept of OpenGL		2									
2. Describe geometrical transformations	2	3									
3. Describe the fundamentals of graphics hardware		3									
4. Describe shading models		3					2				
5. Model simple objects using OpenGL primitives			3					2			
6. Write a program to render scenes with OpenGL			3				3	3			
7. Describe and use advanced techniques to render realistic computer graphic images			3				3	2			

* 3 = major contributor, 2 = moderate contributor, 1 = minor contributor; blank if not related

Estimated Computing Category Content (Semester hours):

Area	Core	Advanced	Area	Core	Advanced
Algorithms		1	Data Structures		1
Software Design		1	Programming Languages		
Computer Architecture					

Estimated Information Systems Category Content (Semester hours):

Area	Core	Advanced	Area	Core	Advanced
Hardware and Software		1	Networking and Telecommunications		
Modern Programming Language			Analysis and Design		1
Data Management		1	Role of IS in an Organization		
Quantitative Analysis			Information Systems Environment		