



Computer Science Department
Course Syllabus
CS450 - Computer Graphics

Catalog Description: Fundamentals of input and display devices, output primitives and their attributes, two- and three-dimensional transformations and clipping, windowing techniques, curves and curved surfaces, three-dimensional viewing and perspective, hidden surface removal, illumination and color models, graphics API's, 3-D modeling tools.

Credit Hours: **3 Credit hours:** 3 Lectures per week 0 Labs. per week 0 Recitation per week

Prerequisites: CS242

Course Learning Outcomes:

1. Describe the ways in which multimedia is captured, processed and rendered.
2. Introduce multimedia quality of service (QoS) and compare subjective and objective methods of assessing user satisfaction
3. Analyze the ways in which multimedia data is transmitted across networks
4. Discuss privacy and copyright issues in the context of multimedia.

Major Topics:

- Graphics Models
- Graphics Models
- Graphics Programming
- Input and Interaction
- Geometric Objects
- Geometric Transformations
- Viewing
- Shading
- From Vertices to Fragments
- Discrete Techniques
- Programmable Shaders
- Modeling
- Curves
- Surfaces
- Advanced Rendering

Text Books:

- Required: Interactive Computer Graphics, A Top-Down Approach Using OpenGL, Angel, 5th edition, Addison-Wesley Professional, 2008.
- Optional: Real-Time Rendering, Akenine-Moller, Haines, 2nd edition, AK Peters Ltd, 2002.
- Optional: Fundamentals of Computer Graphics, Shirley, Ashikhmin, Gleicher, Marschner, Reinhard, Sung, Thompson, and Willemssen, A K Peters, 2005.
- Optional: Computer Graphics: Principles and Practice, Foley, Addison-Wesley, 2000.
- Optional: Computer Graphics: Using OpenGL, Hill, 2nd edition, Prentice Hall, 2001.
- Optional: Computer Graphics C Version, Hearn and Baker, Prentice Hall, 1996.



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• Optional: OpenGL Programming Guide: The Official Guide to Learning OpenGL, Version 2, Shreiner, Woo, Neider, and Davis, Addison-Wesley, 2005

Grading:

- ⊙ The grading scale for this course is:
 - . 95 - 100 A+ Passing
 - . 90 - 94 A Passing
 - . 85 - 89 B+ Passing
 - . 80 - 84 B Passing
 - . 75 - 79 C+ Passing
 - . 70 - 74 C Passing
 - . 65 - 69 D+ Passing
 - . 60 - 64 D Passing
 - . 0 - 59 F Failing

- ⊙ Final grades will be determined based on the following components:
 - . 60% Semester Work
 - . 40% Final Exam

- ⊙ Students may not do any additional work for extra credit nor resubmit any graded activity to raise a final grade.

- ⊙ Late submissions will not be accepted for any graded activity for any reason.

- ⊙ Students have one week to request the re-grading of any semester work.

Attendance Policy:

Students should attend 80% of the overall course hours taught in the semester as per the University regulations.

If a student fails to achieve this portion, he/she shall not be allowed to appear in the final exam and shall be awarded “DN” grade and repeat the course.

Cheating and Plagiarism Policy:

The instructor will use several manual and automated means to detect cheating and/or plagiarism in any work submitted by students for this course.

When a student is suspected of cheating or plagiarism, the instructor raises the issue to the disciplinary committee.



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Communications: Registered students will be given access to a section of the Blackboard Learning System for this course. Bb will be used as the primary mechanism to disseminate course information, including announcements, lecture slides, assignments, and grades.

Communication with the instructor on issues relating to the individual student should be conducted using CIS email, via telephone, or in person.