CS 450/550 – Introduction to Computer Graphics


Credits: 4  Terms Offered: Fall

Prerequisites: Linear Algebra; CS261 and (MTH 306 or MTH 306H or MTH 341)

Courses that require this as a prerequisite: CS551, CS554

Structure: Three 50-minute lectures per week, plus 3 open-lab hours per week

Instructors: Ronald Metoyer

Course Content:
- Graphics pipeline
- 2D transformations
- 3D transformations
- Viewing and Projections
- Visible surface determination
- Illumination and Shading
- Texture mapping
- Programmable Pipeline
- Computer Animation

Measurable Student Learning Outcomes:
At the completion of the course, students will be able to…
1. Describe the names and functions of the elements of the graphics pipeline (Level 1; ABET Outcomes: A)
2. Use 4x4 matrices to create and apply single and multiple transformations to 3D points (Level 3; ABET Outcomes: A)
3. Create a program using the OpenGL Graphics API (Level 3; ABET Outcomes: A, B, C, I)
4. Design a mouse-driven user interface for 3D applications (Level 3; ABET Outcomes: A, C, j)
5. Describe various visible surface determination algorithms (Level 1; ABET Outcomes: A, B, j)
6. Use OpenGL to model the interplay between a light source and a surface (Level 3; ABET Outcomes: A, B, C, i)
7. Describe the animation production pipeline (Level 1; ABET Outcomes: A)
8. Produce a short animation (Level 3; ABET Outcomes: A, B, C, J)
9. CS 550 Learning Outcome: Produce a term project that requires development of a 2D or 3D interactive graphics application.
Learning Resources:

Evaluation of Student Learning
- Homework & Programming Assignments 60%
- Midterm 15%
- Final 25%

CS550 Requirement

In place of the final assignment for CS450 students (Maya Animation Project), CS550 students will complete a term project.

Students with Disabilities:
Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 737-4098.

Link to Statement of Expectations for Student Conduct:
http://oregonstate.edu/admin/stucon/achon.htm

9/28/09