Syllabus for CS574: Computer Graphics

Faculty Member: Alberto Moreira
Semester, Year: Summer 2004.
Course Number: CS574A
Title of Course: Computer Graphics
Faculty Office Hours: Tuesdays and Thursdays, 8:00pm to 10:00pm, STH135.
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Brief Course Description: This is an introduction to 2D and 3D computer graphics. The course will examine the main algorithms for 2D graphics, and then move up to examine a typical 3D graphics pipeline. The OpenGL 3D pipeline will be used throughout the course. .

Required Course Textbook : F.S.Hill, Jr., **(2001)** Computer Graphics Using OpenGL, Upper Saddle River, New Jersey: Prentice-Hall.

Course Objectives : To teach 2D and 3D graphics algorithms and pipelines.

Teaching Strategies: Lectures, Lab sessions, homework, programming projects.

Course requirements : 5 programming homeworks, one final examination.

Examinations: The final examination will be in class according to the official college schedule.

Methods of Assessment and Computation of Grades : Homeworks, 16 points each, Final Examination, 20 points. Total 100 points.

General Course Calendar and Topical Outline:

May 25	Introduction to OpenGL.
June 1	Lines, Polylines and Bresenham.
June 8	Mapping the Window to the Viewport.
June 15	Drawing Circles, Ellipses, and Polygons.
June 22	Affine Transformations.
June 29	The OpenGL Pipeline.
July 6	Perspecive and 3D Objects.
July 13	Shading Models and Lighting.
July 20	Rendering and Alpha Blending.
July 27	Texture Mapping and Mipmapping.
August 3	Beziers and Splines.

August 10 Final Exam.

Bibliography:

Alan Watt, **(2000)** "3D Computer Graphics, 3rd Edition": Addison-Wesley.

Alan Watt and Mark Watt **(1992)** Advanced Animation and Rendering Techniques": Addison-Wesley.

Mark Kilgard, "OpenGL Programming for the X Window System" **(1996)**: Addison-Wesley.

Classroom Policies: None outside the college standard ones.