

Syllabus for CS290: Computer Graphics

Faculty Member: Alberto Moreira

Semester, Year: Summer 2004.

Course Number: CS290A

Title of Course: Computer Graphics

Faculty Office Hours: Tuesdays and Thursdays, 8:00pm to 10:00pm, STH135.

Phone: (603) 578-8570

Email Address: amoreira@ieee.org

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 : 10 weekly quizzes, 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 : Weekly quizzes, Homeworks, and a Final Examination.

10 Weekly Quizzes	2 points each	20 points
5 Homeworks	12 points each	60 points
Final Exam		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 Perspective 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:

You will get one short quiz every week except the first week, at the beginning of the class. Each quiz is worth 2 grade points. The answer is deliverable at the end of each class. The quiz questions will be about what I have taught in class during that day, so that attendance to the class will almost guarantee a successful answer.

You should find a "difficulty level 2" Project in your textbook and do it for your Final Exam. You can do it alone or in a group of two people. You will be required to present your project to the rest of the class on the day of the Final Exam.