Syllabus

ACM215: 3D Scene Design
Spring 2007

Schedule & Location: Mon & Fri, 10:30-11:45, CR212
CRN: 86809
Credits: 3

Instructor Information

Kaveh Kardan   kaveh@hawaii.edu
Crawford 208   www2.hawaii.edu/~kaveh
956-5302   Office hours by appointment

Academy for Creative Media Student Learning Objectives

ACM stresses the interdisciplinary nature of media production and study within an Arts & Sciences foundation that reflects the development of academic, technical, creative and critical thinking skills. All ACM courses reflect a combination of our Student Learning Objectives across the curriculum. They include: Critical Thinking, Writing, History & Aesthetics, Professional Skills, Creativity, Responsibility and Student-Centered Learning.

This course will emphasize the skills underlined above through lectures, assignments, and discussions.

Course Description

The purpose of this course is to introduce students to – and give them some experience in – 3D computer graphics. The course will cover the principles, techniques, and history of 3D computer graphics. Modeling techniques, using both polygon meshes and NURBS surfaces will be covered, as well as basic lighting and rendering. This course does not cover animation.

Lectures will primarily cover the principles and theory behind 3D graphics, and students will be relied upon to learn the workings of the necessary software packages on their own and from each other, using the available text and online tutorials and reference documentation.

This is an intensive course, with time-consuming and challenging assignments and projects. This hands-on approach is meant to give students a practical counterpoint to the principles that will be discussed in class. The 3D application used in class with be Maya, and Photoshop will be used for 2D paintings.

Texts

Online Maya tutorials, "Learning Maya 7: Foundations" book.

Learning Outcomes

At the successful completion of this course, students will be able to:
1) convert a design from a sketch into a 3D model
2) identify why a given 3D model is or is not well-constructed
3) perform basic lighting and rendering operations to produce images
4) be able to inspect a 3D rendered image and determine what techniques were used to produce it
5) be prepared to continue their 3D graphics education along the ACM animation and gaming track

General Requirements and Policies

Grading scale:

Homeworks	60%
Mid-term project	20%
Final project	20%

A: 90-100%	Excellent, little room for improvement
B: 80-89%	Good
C: 70-79%	Average
D: 60-69%	Poor, minimal passing of objectives
F: < 60%	Did not meet minimum objectives

Due Dates and Penalties
Assignments are due by midnight of the day before class.
Late assignments will not be accepted.

Course Schedule

	Monday	Friday
1 - Jan 8	L1 - intro to 3D; transforms; rendering 1	hw 1 review
	hw 1 assigned	
2 - Jan 15	Holiday	L2 - polygon modeling 1; textures 1
		hw 2 assigned
3 - Jan 22	L3 - rendering 2	L4 - polygon modeling 2; MEL basics
4 - Jan 29	composition (Linda Dorn)	hw 3 review
	hw 3 assigned	
5 - Feb 5	L5 - hierarchies, nurbs, sweeps	hw 2 review
6 - Feb 12	character design (Linda Dorn)	hw 4 review
	hw 4 assigned	midterm project assigned
7 - Feb 19	Holiday	L6 - textures 2; batch rendering; renderfarm
8 - Feb 26	[to be determined]	[to be determined]
9 - Mar 5	history/technology of computer graphics	midterm project review (rendered turntable)
		hw 5 assigned
10 - Mar 12	L7 - image planes; texturing from photos	L8 - shaders
11 - Mar 19	L9 - paint effects	hw 5 review (rendered turntable)
		hw 6 assigned
12 - Mar 26	Holiday	Holiday
13 - Apr 2	L10 - sculpting/painting	Holiday
14 - Apr 9	hw6 review (rendered turntable)	L11 - global illumination
	final project assigned	
15 - Apr 16	survey of computer graphics	survey of computer graphics
16 - Apr 23	survey of computer graphics	survey of computer graphics
17 - Apr 30	final project review (rendered turntable)	