Computer Animation I

(CS 174) Spring 2003 Syllabus 4/6/03 10:41 PM

Date	#	Class Topic	Assignment
Wed Jan 29	1	First day stuff (class overview, student information forms). Overview of history of 3D animation and discussion of the pipeline from the perspective of the camera.	Read Kerlow chapter 1 and 6, skipping sections 6.4, 6.5, 6.7, 6.8, and 6.9. Be sure to focus on the rendering technique called ray tracing.
Mon Feb 3	2	Introductions, tour of syllabus. Discuss reading. Ray tracing in detail, putting modeling, shading, animation, and lighting in context. Numerical representation of color.	Read Kerlow chapter 7 (pp. 181-196). Purchase a 100 Mb ZIP disk for use in the classroom. Sign up for the class email list at lists.hampshire.edu.
Wed Feb 5	3	Discuss reading. Cameras in detail. Orthographic and perspective views. Simple transformations (translate, rotate). Lightwave: running, loading a scene, camera settings, camera transformations, rendering images. How to hand in assignments.	**Assignment 1** (camera control), due Monday. Read the relevant sections of the LW manual (pdf) for assistance with the software.
Mon Feb 10	4	Hand in and discuss assignment 1. Expose the wizard behind the curtain: Animating numerical values using keyframes. Curve control, ease-in and ease-out.	Read Kerlow section 11.1. Read about the graph editor in the LW manual (pages 8.10-8.20). Feel free to read all of chapter 8 if you wish. Revise assignment 1 for Wednesday if necessary.
Wed Feb 12	5	Discuss reading. Keyframe and curve review. Animating with hierarchies. Building your own scene. LW: using multiple primitives, importing models, positioning models, parents and children.	**Assignment 2**, due Wed Feb 19 (swinging rope). Read Kerlow sections 10.1, 10.2, 11.5. Read section of Lasseter handout on follow-through (in Course Storage).
Mon Feb 17	-	CLASS CANCELLED - SNOW DAY	Finish assignment 2 for Mon Feb 24.

Date	#	Class Topic	Assignment
Wed Feb 19	6	Principles of animation I (ease in/out, anticipation, arcs, follow through/overlapping action, timing). In-class rope demo. Q&A for assignment 2.	Finish assignment 2.
Mon Feb 24	7	Hand in and discuss assignment 2. Principles of animation II & III (squash/stretch, exaggeration, silhouette, appeal). Staging to the camera. Possible in-class bouncing ball demo (translation only).	**Assignment 3** (bouncing balls) due Mon Mar 3. Read entire Lasseter handout. Revise assignment 2 for Wednesday if necessary.
Wed Feb 26	8	In-class bouncing ball demo and the layered approach to animating.	Finish assignment 3.
Mon Mar 3	9	Hand in and discuss assignment 3. Basics of lighting outside of the computer (key, fill, rim, etc.). Lighting theory from Calahan.	Read Kerlow chapter 8 (pp. 197-223). Revise assignment 3 for Wednesday if necessary.
Wed Mar 5	10	Lighting on the computer. Light types, cheats to simulate diffuse reflection, shadows. Lightwave: light creation, control.	**Assignment 4** (light a scene to match), for next Wednesday.
Mon Mar 10	11	TBA. Possibly Q&A on assignment 4.	Finish assignment 4.

Date	#	Class Topic	Assignment
Wed Mar 12	12	Hand in and discuss assignment 4. One last in-class animation exercise.	NONE.
Mon Mar 17	-	NO CLASS (spring break)	
Wed Mar 19	-	NO CLASS (spring break)	
Mon Mar 24	13	Introduce the final project. Modeling with polygons.	Due Wednesday, three final project pre-proposals. Optional: Read Kerlow section 2.1, 10.3, 10.4.
Wed Mar 26	14	Hand-in pre-proposals. Storyboarding, shot breakdown, and other supporting material for final project proposals. Modifying primitives (SRT on part or whole).	Due Monday, finished final project proposal. Read Kerlow chapter 3 (pp. 77-100). Don't worry too much about section 3.5.
Mon Mar 31	15	Hand in final project proposals. Discuss reading. Lightwave: using primitives (sphere, box, cone), managing selections, transforming points and polys. Using backdrops.	Main final project models due Mon Apr 7. Consult the LW manual for assistance.
Wed Apr 2	16	More on modeling: creating your own polygons. Triangles and quads, shared and unshared points. Planarity, surface normals, 1- and 2-sided polys. Using layers, pivots, and making a hierarchy. LW: creating polys from points, working with polys.	Finish main models.
Mon Apr 7	17	Hand-in and look at models. Q&A on modeling.	Read Kerlow chapter 4. Layout and do blocking animation for final project. Rough shots due Mon Apr 14.

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Date	#	Class Topic	Assignment
Wed Apr 9	-	NO CLASS (exam/advising day)	
Mon Apr 14	18	Animation dailies in class.	Read Kerlow sections 9.1, 9.2, 9.4 (skip Reflection Maps and Environment Maps), the first part of 9.5 (skip Color Maps), the first part of 9.7 (skip Transparency Maps). Continue animating.
Wed Apr 16	19	The math that happens when rays hit objects during rendering. Naming the parameters in the Phong illumination model. Smooth vs. faceted shading. LW: material assignment and surface panel.	Finalize as much of the animation as possible for Monday's second animation dailies.
Mon Apr 21	20	Animation dailies in class.	For Wednesday, add lights and render a single frame.
Wed Apr 23	21	Lighting review in class.	Finish final projects for Wed Apr 30.
Mon Apr 28	22	TBA. Working class?	Finish final project.
Wed Apr 30	23	Hand in and screen final projects.	