Computer Animation I

(CS 174) Spring 2006 Syllabus revision date: 4/4/06 22:58

Date	#	Class Topic	Assignment
Wed Feb 1	1	First day stuff. The CG production pipeline and the ray tracing algorithm for making images.	Kerlow sections 2.4, 10.1, 6.3, 6.6 and chapter 7. Optional BG reading: Kerlow chapter 1.
Mon Feb 6	2	Discuss reading. Cameras in detail. Orthographic and perspective views. Simple transformations (translate, rotate). Maya: running, loading a scene, camera settings, camera transformations, rendering images. How to hand in assignments.	**Assignment 1** (camera control), due Weds. Do the Maya intro tutorials and read the relevant sections of the Maya manuals (in the classroom and online) for assistance with the software.
Wed Feb 8	3	Hand in and discuss assignment 1. Get to know each other. Expose the wizard behind the curtain: Animating numerical values using keyframes. Curve control, ease-in and ease-out.	**Assignment 2** (2D ball), due Weds. Kerlow section 11.1, 11.2 (through "motion paths"), 11.7, 10.2 (stop before "A Few New Principles"). Lasseter on squash/stretch and timing.
Mon Feb 13	4	Discuss reading. Principles of animation I (squash and stretch, timing). Controlling keyframes and interpolation in Maya. Making playblasts.	Read about the graph editor in the Maya manual. Finish Assignment 2.
Wed Feb 15	5	Hand in and discuss assignment 2. Introduce transformation hierarchy.	**Assignment 3** (2D ball with tail), due Mon Feb 27. Read Kerlow and Lasseter on anticipation, follow-through/overlapping action, and secondary action. Kerlow section 11.5 (animating hierarchies)
Mon Feb 20	6	Principles of animation II (anticipation, follow-through/overlapping action, and secondary action). Basics of hierarchical animation and more advanced Maya animation tools (dope sheet, re-timing in the time slider).	Finish assignment 3 for next Monday.

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Weds Feb 22	-	NO CLASS (Hampshire advising day)	Finish assignment 3 for Monday.
Mon Feb 27	7	Hand in and discuss assignment 3. Return to 3 dimensions.	**Assignment 4** (3D balls), due Weds March 8. Read Kerlow and Lasseter on staging, exaggeration, slow in/slow out, and arcs.
Wed Mar 1	8	Principles of animation III (staging, exaggeration, slow in/slow out, arcs). Brainstorming ideas and planning for assignment 4.	Finish assignment 4 for next Weds.
Mon Mar 6	9	In-class bouncing ball demo and the layered approach to animating.	Finish assignment 4 for Weds.
Wed Mar 8	10	Hand in and discuss assignment 4. Basics of lighting outside of the computer (key, fill, rim, etc.). Lighting theory from Calahan. Digital color.	**Assignment 5** (light a scene to match), due Wed March 15. Read Kerlow chapter 8 (pp. 199-226). Read Maya manual on lighting.
Mon Mar 13	11	Lighting on the computer. Light types, cheats to simulate diffuse reflection, shadows. Maya: light creation, control.	Finish assignment 5 for Weds.

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Wed Mar 15	12	Hand in and discuss assignment 5. Cover the previously-skipped lighting theory stuff and introduce the final project.	Final project pre-proposals, due Monday March 27.
Mon Mar 20	-	NO CLASS (Spring Break)	Finish final project pre-proposals for next Monday.
Wed Mar 22	-	NO CLASS (Spring Break)	Finish final project pre-proposals for Monday.
Mon Mar 27	13	Hand-in pre-proposals. Storyboarding, shot breakdown, and other supporting material for final project proposals. Modeling with polygons. Modifying primitives (SRT on part or whole).	Due Friday: finished **final project proposal**. Read Kerlow section 2.1, 10.3, 10.4.
Wed Mar 29	14	Hand back pre-proposals. Comments. Review modeling thus far. Image planes. "Baking in" vertex data versus transforming an object. Rigging complexities, such as scale correction, and the expression editor.	Due Friday: finished **final project proposal**. Read Kerlow chapter 3 for Monday (don't worry too much about section 3.5). Begin working on final project models.
Mon Apr 3	15	Discuss reading. Building a reasonably complex character from the ground up (more on expressions, hierarchies). Introduction to single-skin modeling.	Final project models due Monday April 10. Consult the Maya manual and CG community as needed for assistance. Optional reading: Kerlow chapter 4.

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Wed Apr 5	16	More on modeling and rigging: normals and poly smoothness, Milestone 3 Q&A, some more single-skin examples and tools.	Finish main models for Monday.
Mon Apr 10	17	SPLIT CLASS. Hand-in and look at models. Q&A on modeling. Intro to blocking.	Layout and do blocking animation for Weds.
Wed Apr 12	18	SPLIT CLASS. Layout/blocking dailies in class.	Polish final project animation for next Weds. 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).
Mon Apr 17	19	Shading in depth. Naming the parameters in the Phong illumination model. Smooth vs. faceted shading. Maya: material assignment and surface attributes.	Finalize as much of the animation as possible for Wednesday's second animation dailies.
Wed Apr 19	20	SPLIT CLASS. Animation dailies in class.	Make appropriate animation fixes given comments during review. Add lights to your scene(s) and render a single frame of each for review next Wednesday.
Mon Apr 24	21	TBD (lighting Q&A, probably)	Finish your lit frames for Wednesday.

Date	#	Class Topic	Assignment
Wed Apr 26	22	SPLIT CLASS. Lighting review in class.	Finish final projects for Wednesday May 3.
Mon May 1	23	Final Project Q&A. Maybe some animation Division 3s. What working in the industry is like, course evaluation forms.	Finish final projects for Wednesday.
Wed May 3	24	Hand in and screen final projects.	