

**CS 159: Computer Animation and Lighting  
Class and Assignment Schedule**

**Fall 2000**

<b>Date</b>	<b>#</b>	<b>Class Topic</b>	<b>Assignment</b>
Wed Sep 6	1	First day stuff. Where animation and lighting fit into the computer graphics pipeline. Perspective student information forms.	If you're in the class (check Friday), read O'Rourke pp. 28-47 and online <a href="http://www.webreference.com/3d/lesson1">www.webreference.com/3d/lesson1</a> plus the glossary on transformations.
Mon Sep 11	2	Navigating in 3D space. Coordinates, transformations, projection and rendering. Transformations and rendering in Lightwave.	Read O'Rourke pp. 137-148 (up to Hierarchical Animation section), and chapters 1 and 2 (through page 2.14) of Lightwave motion book.
Wed Sep 13	3	Keyframes. Linear interpolation. Making QuickTime movies and handing them in.	Move an object, make a movie (assignment 1). Also, read Lasseter article.
Mon Sep 18	4	Principles of animation – Illustrated with examples.	Read chapter 3 of Lightwave motion book (Keyframing).
Wed Sep 20	5	Types of interpolation. Modifying interpolation between keyframes in Lightwave.	Bouncing ball assignment: 2 types, heavy and light. Also, read Halas pp. 32-39.
Mon Sep 25	6	Discuss ball assignment. Introduction to animation hierarchies.	Read O'Rourke pp. 148-151 about hierarchies, IK, and deformations.
Wed Sep 27	7	Animating hierarchies. Parents and children. The layered approach to hierarchical animation.	Hierarchical animation assignment.
Mon Oct 2	8	Discuss hierarchy assignments. Bones and deformations.	Read O'Rourke pp. 151-159 about IK and deformations, also chapter 5 of Lightwave motion book.
Wed Oct 4	9	Walk cycles.	Walk cycle assignment (due the 16 <sup>th</sup> ).
Mon Oct 9		NO CLASS (October Break)	
Wed Oct 11	10	In-class walk cycle workshop.	Finish walk cycle.
Mon Oct 16	11	Breaking down shots based on audio. Planning your shot.	Final shot project assigned. Pick one of the audio tracks for your shot project and break it down.
Wed Oct 18		NO CLASS (Exam/Advising Day)	
Mon Oct 23	12	Hand in choices of audio and breakdowns. Facial animation: eyebrows, eyes, lips and lip sync. Phonemes. Head cams.	Do rough blocking for your shot project. Read as much of Halas as you can.
Wed Oct 25	13	TBA. Possibly procedural animation or group blocking review.	Finish shot project for Nov 1 <sup>st</sup> .
Mon Oct 30	14	TBA	
Wed Nov 1	15	Look at shot projects. Trig review and some vectors, too.	Read Brown pp. 1-12 (chapters 1 and 2), Upstill pp. 1-10, Hill pp. 540-546.
Mon Nov 6	16	Modeling light transport with ray tracing. Microfacet theory and Phong shading model.	Read Brown pp. 57-66 (chapter 6) and Alton pp. 30-38. Optional: read Brown pp. 27-38 (chapter 4) on color.
Wed Nov 8	17	Examination of light types in context of Hollywood lighting (solar, spot, etc.).	Render stills of orange in room with key, bounce, fill, rim, etc.
Mon Nov 13	18	Hand in oranges. Shadows and antialiasing.	Orange matching project.
Wed Nov 15	19	Orange matching due. Discuss oranges, identify lighting schemes in examples.	Final lighting project assigned. Photorealistic integration or style emulation.
Mon Nov 20	20	TBA, perhaps lighting video.	Read Calahan pp. 337-382 over break.
Wed Nov 22		NO CLASS (Thanksgiving Break)	

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Mon Nov 27	21	Reflection and fog models. Environment maps. Extensions to Phong.	Write up a one-page description of your final lighting project.
Wed Nov 29	22	Photorealistic integration.	
Mon Dec 4	23	Radiosity and scanline rendering.	
Wed Dec 6	24	Review final lighting projects. Party.	

\* This schedule is subject to change throughout the semester! If you miss a class, make sure to check in with fellow students so you have the right assignment.