

Introduction to Digital Imaging (syllabus)

CS/HACU 116, Fall 2001

Class and Assignment Schedule

Date	#	Class Topic	Assignment
Thu Sep 6	1	First day stuff. What is digital imaging and why bother with it?	Get a Mac-formatted Zip disk (100 Mb) and read chapter 1 of Brinkmann (p 1-12).
Tue Sep 11	2	NO CLASS – cancelled due to terrorist madness.	
Thu Sep 13	3	Introductions, discuss reading. Images as arrays of pixels. Bits, bytes, bit depth and the conversion between resolution and memory.	Read chapter 2 of Brinkmann (p. 13-32). Read handout on digital image representation and answer the questions on it. Also, be sure to sign up for class email on lists.hampshire.edu.
Tue Sep 18	4	Discuss reading and questions. Quiz. Making images. Digitizing, aliasing, banding. Sampling theory. Scanning. Normalized color coordinates.	Scanning and file format assignment for Tuesday.
Thu Sep 20	5	Hand in and discuss assignment. Representing and perceiving color. RGB vs. HSV. Single-source image processing operators. (2 classes merged). Image manipulation with single-source operators. In-class color matching exercise.	Project I assigned, due Tuesday Oct 2. Read chapters 3 and 9 of Brinkmann (p. 33-63 and p. 133-139). Find images for project I.
Tue Sep 25	6	View images. Learning to See, part I (visual cues relevant for project I). Making localized changes using masks and Photoshop “selections.”	Finish project I for next class.
Thu Sep 27	-	NO CLASS (Yom Kippur)	
Tue Oct 2	7	Hand in and discuss project I. The mathematics behind masks. Masks/mattes as images used to blend between other images.	Write a post-mortem on project I, due Friday by 4:30pm.
Thu Oct 4	8	Discuss in-progress post-mortems. The alpha channel. Two-source operators such as “over” and others. Premultiplied alpha. Layers.	Read chapters 4 and 5 of Brinkmann (p. 65-92). Read handout on “over”.
Tue Oct 9	-	NO CLASS (October Break)	
Thu Oct 11	9	Discuss reading. Making mattes: Chromakeying, rotoscoping, etc. Debugging matte problems.	Project II assigned, due Tuesday Oct 23. Gather your source images and digitize an example image that contains matting.
Tue Oct 16	10	Learning to See, part II (visual cues relevant for project II). Review findings and other inspirational examples. How to break down a composite (in-class exercise).	Read chapters 12, 13, and 14 of Brinkmann (p. 189-240). Continue working on project II.
Thu Oct 18	11	Discuss reading. Correcting perspective, grain, and focus differences, retouching for wire removal and background replacement. Project II Q&A.	Finish project II for next class.

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Tue Oct 23	12	Turn in project II and review them in class.	Read chapter 6 of Brinkmann (p. 93-102).
Thu Oct 25	13	Discuss reading. Vector graphics and time-based compositing. Interpolation and keyframes.	Project III assigned, due Thursday Nov 15. Write script and bibliography for next Thursday.
Tue Oct 30	14	Discuss in-progress scripts. In-class screening of some time-based composites. Identify changes in position, opacity, scale. Basics of AE interface.	Finish script and bibliography for next class.
Thu Nov 1	15	Hand in scripts and bibliographies. AE in depth. Animating mattes/rotoscoping, tracking.	Continue working on project III. Read handout on AE.
Tue Nov 6	16	Audio import. Basics of using text. Readability and design in animated composites. Exporting movies, video compression.	Continue working on project III.
Thu Nov 8	17	In-class project Q&A. In-class text exercise. Temporal artifacts. Motion blur.	Finish project III for next class.
Tue Nov 13	-	NO CLASS (Exam/Advising Day)	
Thu Nov 15	18	Hand in project III and view projects in class. Discuss final class project.	Final Project assigned. Project proposals due Tuesday Nov 27. Read chapter 16 of Brinkmann (p. 269-290).
Tue Nov 20	19	Discuss reading and final project ideas. Inspirational screenings.	Finish project proposal.
Thu Nov 22	-	NO CLASS (Thanksgiving Break)	
Tue Nov 27	20	Final project proposals due. DV and codecs.	Finish final project for Tuesday Dec 11.
Thu Nov 29	21	Tour of AE filters.	Continue working on final project.
Tue Dec 4	22	In-class final project Q&A session.	Continue working on final project.
Thu Dec 6	23	Digital image capture and display: CCD, LCD, DMD, DVD.	Finish final project for next class.
Tue Dec 11	24	Final projects due. In-class screening/show. Last day of class.	