

LCC 6322 Responsive and Topological Media

Sha Xin Wei

Fall 2003 • M W • Skiles 349

xinwei@lcc.gatech.edu • 404-579-4944

http://www.lcc.gatech.edu/~xinwei/classes/lcc/6318_ResponsiveMedia

Abstract

We develop design intuitions about physical and digital materials such as glass, networks, clay, lattices, and video, out of which we can construct contemporary hybrid digital artifacts.

Course Description

What makes something tangible? Does causality imply tangibility? What makes stuff material rather than “virtual”? What kinds of temporality are there? Does temporality impart tangibility? When is it better to use physical media, numerical simulations or representations? (And what’s the difference?) What makes a substance responsive, active, agentful, lifelike? (Or is that a grammatical or categorical error?)

Design firms like IDEO maintain stocks of samples of materials such as fabric, wire mesh and sandpaper to sharpen their designers’ intuitions. Inspired by such professional design practice, this course explores the materials out of which hybrid spaces are constructed: physical media such as crystal, cobwebs and water, as well as computational media such as lattices, deformable solids and digital video. The purpose of this survey is to offer students a chance to acquire, in the form of studio-lab exercises and projects, intuitions about matter that span both physical and computational domains.

This is a companion course to LCC 6321 Architecture of Responsive Spaces, in which students design tangible or responsive media installations for the urban environment. In the studio-lab part of this course, students will learn to create hybrid materials using realtime video audio synthesis authoring systems and analog techniques.

Prerequisites

Facility with, or strong preparation for professional media synthesis tools digital graphics, video, sound, *or* programming experience with physics simulations. Dedication to materializing concepts with programming tools like Max / MSP / jitter / FinalCut / Flash.

Readings and Themes

Readings will be supplied in the areas of design -- material, fabric, paper, etc., simulations, computational physics, responsive media, sensors and effectors. Material themes may include:

Air / storm / Gas models
Clay / Topology / Deformable solid
Copper / Ornament /
Crystal / Linguistics / Lattices
Foam, Soapfilm / / Area Minimization
Gel / Touch, desire, flesh / Haptic, plastics
Glass / vision / Amorphous solid, Fiber optics
Paper / Print, trash, clothing / Folding, print
Sound / speech / Waves
Spacetime / Striated and smooth spaces / Elastica
Thread / Weaving / Graphs, knots
Tissue / Touch, desire, flesh / immunology, elastica
Water / geography, thirst / Phase change, Fluid dynamics

Schedule

Each unit is named after a material whose symbolic and physical values constitute the themes to explore. We explore poetically and technically a material, objects made from such material, digital correlates and associated computational or physical tools. Unless otherwise noted, each unit occupies approximately one week.

Students will collect materials -- both physical and computational -- in personal Scrapbooks, and develop their own materials notes. Each material can be associated with: (1) objects that are typically made from that substance; (2) a set of symbolic values; (3) computational correlates and tools. Students will develop and sharpen their design intuitions by working with these physical and computational media, and document their insights in their personal Scrapbooks of digital pieces and written or sketched notes.

Assignments/Evaluation

Students will be evaluated based on class participation and responses in the form of digital artifacts: software, animations, video, as well as short written notes, collected in their Scrapbooks, and on a report/construction/simulation about a substance they choose.