

Advanced 3D Media Systems - Principles of Animation in S.I.S.: Physical Narratives, Movement, Interactivity, and Installation

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COURSE DESCRIPTION

This course is an investigative and experimental studio / lab that explores the relationship between animation and physical objects, prompting the constant navigation back and forth between digital and physical creative tool sets. The concepts we will explore as a group include the relationship between body and technology; scripted spaces; cybernetics, robotics, and the uncanny valley; choreographed and sympathetic movement; puppetry; games; the translation of the digital to the physical, vice versa, and more. Our experiments will take inspiration from the history, theory, and technology of both physical and digital animation as well as sculpture, and make use of various animation concepts and tools to develop physical works of sculpture, installation, performance, and interactive experiences. With animation as our lens, and from a critical perspective, we will explore ideas surrounding audience participation, multimedia sensorial experience, and post-digital aesthetic that are relevant to contemporary sculpture today. This course assumes knowledge of at least very basic 3d modeling, physical computing, and 3d media fabrication / construction techniques.

RECOMMENDED COURSE TEXTS

Note: These books and articles are relevant as whole texts, but optional. Excerpts, shorter readings, and additional articles, will be provided for group readings and discussion and study in and out of class.

- Karen Archey - *Bodies in Space: Identity, Sexuality, and Abstraction of the Digital and Physical* (2015)
- Esther Leslie - *Hollywood Flatlands: Animation, Critical Theory, and the Avant Garde* (2002)
- Katherine Hayles - *How We Became Posthuman: Virtual bodies in cybernetics, literature, and informatics* (1999)
- Norman Klein - *The Vatican to Vegas: A History of Special Effects* (2004)
- Rube Goldberg - *Rube Goldberg vs. The Machine Age* (1968)
- Artie Vierkant - *The Image Object Post-Internet* (2010)
- Casey Reas, Chandler McWilliams, and LUST - *Form+Code, In Design, Art and Architecture* (2010)
- Julian Oliver & Danja Vasiliev - *The Critical Engineering Manifesto* (2011)
- Friedrich Kittler - *Optical Media* (2010)
- Marshall McLuhan - *Understanding Media: The Extensions of Man* and *The Medium is the Massage: An Inventory of Effects* (1967)
- David Garcia & Geert Lovink - *The ABC of Tactical Media* (1997)
- *Making the Scene: A History of Stage Design and Technology in Europe and the United States* - Oscar Brockett, Margaret Mitchell, Linda Hardberger (2010)
- Albert Hopkins - *Magic: Stage Illusions, Special Effects and Trick Photography* (2010)

COURSE OUTLINE

Week 1

Narrative and scripted spaces, disney rides, maps, malls, and stories

Assignment 1: Collaborative project - create an installation that tells a story by creating spaces through which an audience must move in a certain direction

Week 2

Modeling, mapping, and patterning - 3d construction from 3d modeling concepts; Rigged models and puppetry.

Assignment 2:

Option 1 - Build something small from a digital model and do it in 3 different ways. This will be used later in Project 3.

Option 2 - Build a puppet from a rigged model. Use at least 2 different digital-to-physical construction techniques. This will be used later in project 3.

Weeks 3-4

Rube Goldberg, kinetic sculptures, simple machines, techniques, methods, experiments

Project 1: Create a sculpture that moves without electronics (not interactive)

Weeks 5-6

Analogue and physical animation techniques, simple zoetropes, and optical illusions; continuing modeling with assignment 2; remember how to do physical computing?

Project 2:

Option 1 - Build a Zoetrope from the model you developed in Assignment 2

Option 2 - Create a puppet show (performance), a moving puppet, or zoetrope, from the puppet model you developed in Assignment 2.

Weeks 7-9

Sympathetic motion, examples in animation, electronic-kinetic sculptures and physical computing

Project 3: Create a sculpture that moves or creates some kind of physical output from preprogrammed electronic digital input (not interactive)

Weeks 10-12

Alternative controllers, basic robotics, physical input to digital output

Project 4: Create an alternative control or interactive mechanism for a pre-existing game or digital experience

Weeks 13-14

Final Project - Finishing Project 4 or any other project in a new way; accessing points of interaction with animation and VR platforms; continuing to experiment with basic robotics; whatever skills necessary for your final project.

Jumping off from Project 4, your final version of it could be one of the following:

- 1) Create an alternative physical control or interactive mechanism for *your own* game, animation or digital experience
- 2) Develop a similar physical experience or interaction that accompanies a VR experience
- 3) Turn your physical interactive mechanism for a digital something into an experience in the physical realm - such as a robotic installation that responds to input and creates choreographed physical output - the audience could be interactive or not