

**FDM 170A: FOUNDATIONS OF DIGITAL MEDIA**  
**University of California, Santa Cruz**

*instructor:* Dr. Warren Sack <wsack@ucsc.edu>

*time:* second summer session 2017, Tuesdays & Thursdays, 10:00-12:30

*note:* we will meet in class 5 hours / week, but you will likely need to be in the lab at least another 5 hours per week to complete the assignments

*place:* Social Sciences 1, Room 135

*office hours:* Tuesdays & Thursdays, 12:30-1:30 (in Social Sciences 1, Room 135); or, by appointment (send me email to arrange a time)

*“Conceptual Art, ... a significant precursor to New Media art, focused more on ideas than on objects. New Media art is often conceptual in nature. ... Much as Lawrence Weiner’s ‘Indefinite Material Descriptions’ (e.g., One Quart of Exterior Industrial Enamel Thrown on a Brick Wall, 1964) don’t need to be realized to exist as art works, [a New Media art work] doesn’t need to be seen (or completed) to be understood.”*

Mark Tribe and Reena Jana, *New Media Art*, 2006

*“I will refer to the kind of art in which I am involved as conceptual art. In conceptual art the idea or concept is the most important aspect of the work. ... The idea becomes a machine that makes the art.”*

Sol Lewitt, *Paragraphs on Conceptual Art*, 1967

*“The common threads that connect the different articles devoted to the arts and crafts are the description of elementary movements of production, how these movements are integrated and thereby define aggregate technical operations, and the logic of chaining together these operations to form processes organized according to a division of labor. The Encyclopedia repeatedly emphasizes the benefits of the division of labor. Movements, operations, processes: this triad was applied to the description of the fabrication of stockings, pins, or ropes, the extraction of iron ore and its refinement. This triad comprises a framework of interpretation to guide the reader through all potential obscurities. The notion of ‘operation’ occupies a central position in this framework. It is a kind of basic semantic unit that underlies the know-how of individuals and the logic of the entire chain of production. ... From individual movement to process chain, the thread that weaves them together is analogous to the overall aim of Diderot, D’Alembert, and their Encyclopedia collaborators: the integration of all forms of knowledge.”*

Antoine Picon, “Gestes ouvriers, opérations et processus techniques. La vision du travail des encyclopédistes,” in *Recherches sur Diderot et sur l’Encyclopédie*, numéro 13, 1992.

## **APPROACH**

This course takes the approach that digital art is a continuation of the twentieth century practice of conceptual art. In order to compose and analyze what we see and hear – what we experience – in digital media, we need the languages of art and critical theory. In order to talk about inner workings of digital media we need the languages of computer science or, more specifically, the language of code. The outstanding questions of digital media are how can we translate the language of art into the language of code and vice versa? We will pay attention to how the work of artwork is described and how the machines of code are articulated. Consequently, our discussions will recurrently address what I call “work languages” and “machine languages.”

Most new media artworks are constructed collaboratively using techniques of “montage,” “remix,” “mashup,” or, what the curator Nicolas Bourriaud has called “postproduction.” In other words, when a new artwork is made, it is frequently made from pieces of other existing artworks, or, more generally, found things. Marcel Duchamp called this a “readymade” when he made art out of things he bought from a local department store, like a bottle rack. In the twentieth century it was so-called “conceptual artists” who developed these techniques, this approach of

“postproduction.” Consequently, in this course, we explore the connections between earlier conceptual art and contemporary digital media works.

## LEARNING OBJECTIVES

First, I want to introduce you to new methods of composition that will expand your artistic practice. If you’ve never mod-ed a game, remixed a text, made a movie that watches the viewers reactions by methods of machine vision, or hacked a website, I want to introduce you to these artistic methods and more. This is the computer science side of digital media.

Second, I want to help you learn how to speak and write about your work in the languages of art and critical theory. We can call this second set of methods, methods of decomposition or critical analysis. If, in digital media, we just coded like computer scientists, we’d ask questions of our productions like “How fast is it?” “How efficient is it?” “How user friendly is it?” These are questions of aesthetics even though, in engineering, one would call them criteria of evaluation. But, in the art world, we know that aesthetics comes in many more flavors than the vanilla evaluations of computer science. For example, is your work funny? Is it scary? Does it make me think new things or even contemplate the impossible? This is the critical studies side of digital media.

Third, my goal as a teacher is to help you discover artists and artworks that you don’t know now, but that – after you discover them – you totally fall in love with. In fact, you come to love them so much that you want to do artworks just like them. Now, obviously, there is diversity in desire: some of you will love an artist that another of you thinks is just awful. So, for this to succeed in my classes, I need to show you tons of stuff, but even this isn’t enough. For me to succeed, I’ve got to get you hooked on browsing the web to find artists and artworks that appeal to you. This is the third dimension of digital media that is, actually, also the third dimension of everything else you will study and remember. Let’s call this third dimension simply “passion.”

In this course students will

1. practice a diverse set of artistic techniques for developing digital media artworks;
2. demonstrate a working knowledge of digital media technologies, especially the programming languages Processing and JavaScript and the mark-up language HTML;
3. gain experience planning and developing several smaller projects;
4. attain a literacy in some of the histories, theories, and critical languages of digital media that will allow them to speak knowledgeable about their own work and the artworks of others in a studio critique environment.

## REQUIREMENTS

I will give you a set of projects to do and we will talk during a portion of each class meeting about the work you have done. In the worlds of art and design, this form of review is called “critique,” which does not mean that one has to speak negatively about the work. To speak knowledgeably at the critiques you will need to study the required, weekly readings. To do a good job on the projects you will need to engage both art and code. What did you make in response to my project prompt? How does it work in terms of the code? What other programs does it resemble, borrow from, or incorporate? Now, from the art side, what did you make? How does it work as an artwork? What other artworks does it resemble, borrow from, or incorporate? If you make something and then answer these kinds of questions when we talk about your artwork in class, you will do well in the course. This course is designed to engage you in the primary questions of digital media: Can art be translated into code and vice versa?

Grades will be calculated using the following criteria. Note that most all of the projects can be done in collaboration with other students in the class.

1. 10%: Class attendance and discussion: You will be expected to attend all class meetings and actively participate in discussions and critiques.

2. 90%: Small projects: There will be nine projects assigned to you over the course of the term. Many of them you might be able to complete during the class meeting time.

### **Submission of Work**

You will be asked to submit your work by handing in a hardcopy or by uploading it to a shared Google Drive or onto Canvas directly. The specific location will depend on the assignment. If the work submitted was done collaboratively, you must also send me an email evaluating the efforts of your collaborators.

### **Attendance Policy**

Three unexcused absences will result in a failing grade for the course. If you cannot come to class or need to be late or early, please send me an email.

### **SCHEDULE**

#### **01.08.2017 Introduction**

##### Readings

Mark Tribe & Reena Jana, "Art in the Age of Digital Distribution," *New Media Art*, 2006.  
[reader]

##### Viewing

Aaron Koblin, *Flight Patterns*, 2006

<http://www.aaronkoblin.com/work/flightpatterns/>

<http://www.youtube.com/watch?v=dPv8psZsvIU>

Mark Hansen and Ben Rubin, *Listening Post*, 2003

<https://frieze.com/article/mark-hansen-and-ben-rubin>

<http://www.youtube.com/watch?v=kvraiGTPCHs>

<http://www.youtube.com/watch?v=QCwfw0v6mlo>

Rooster Teeth, "Why are we here?," *Red versus Blue*, Season 1, Episode 1

<http://roosterteeth.com/archive/?id=88&v=more&s=1> (start at 00.01:30)

Yes Men, *The Yes Men impersonate Dow Chemical on the BBC*, 2006

<http://www.youtube.com/watch?v=SIUQ2sUti8o>

<http://theyesmen.org/>

##### Agenda

1: Mutual introductions

2: A small questionnaire

3: Overview of the course

4: Look at the Tribe and Jana reading; read pages 60-74 of McCloud

5: Workshop: Frame-by-Frame Analysis [project 1] due 03.08.2017

#### **03.08.2017 Comics**

##### Readings

Scott McCloud, "Chapter 3: Blood in the Gutter," in *Understanding Comics: The Invisible Art*, 1993 [reader]

##### Optional Readings

Jill Lepore, "The Origin Story of Wonder Woman," *Smithsonian*, October 2014: 56-65.

[reader]

Ariel Dorfman and Armand Mattelart, *How to Read Donald Duck*, 1971

[reader]

### Agenda

- 1: Languages of Composition, Decomposition and Analysis: How does an artwork work?
- 2: Workshop: Collage together a comic [project 2] due 08.08.2017

08.08.2017

### **Cut-Ups and Concrete Poetry**

#### Readings

Tristan Tzara, "To Make a Dadaist Poem," 1920

[http://modernism.research.yale.edu/wiki/index.php/To\\_Make\\_a\\_Dadaist\\_Poem](http://modernism.research.yale.edu/wiki/index.php/To_Make_a_Dadaist_Poem)

William S. Burroughs, "The Cut-Up Method of Brion Gysin," 1963

[http://www.ubu.com/papers/burroughs\\_gysin.html](http://www.ubu.com/papers/burroughs_gysin.html) (text)

<https://www.youtube.com/watch?v=Rc2yU7OUMcl> (audio)

Mary Ellen Solt, "Introduction," from *Concrete Poetry: A World View* (1968, Indiana University Press)

<http://www.ubu.com/papers/solt/intro.html> O'Reilly *Safari* Database of reference books on HTML & JavaScript

[available through the UCSC Library website]

#### Optional Reading

Johanna Drucker, "Chapter 3: Experimental Typography as a Modern Art Practice," in *The Visual Word: Experimental Typography and Modern Art, 1909-1923* (University of Chicago, 1997) [reader]

#### Viewing

David Bowie on Cut-Ups

<https://www.youtube.com/watch?v=m1InCrzGIPU>

Nick Montfort, "Taroko Gorge" (2009)

[https://nickm.com/taroko\\_gorge/](https://nickm.com/taroko_gorge/)

jodi.org, "www.ubudesign.com/jodi.org"

<http://www.ubudesign.com/jodi.org>

jodi.org, "Yeeha"

<http://www.nettime.org/Lists-Archives/nettime-l-9607/msg00061.html>

Alexei Shulgina, "Form Art"

<http://www.c3.hu/collection/form/>

Heath Bunting, "\_readme.html"

[http://www.irational.org/\\_readme.html](http://www.irational.org/_readme.html)

Young-Hae Chang Heavy Industries, "Rain on the Sea"

[http://www.yhchang.com/RAIN\\_ON\\_THE\\_SEA.html](http://www.yhchang.com/RAIN_ON_THE_SEA.html)

#### Code

See the folder Files/Code/Project3

### Agenda

- Workshop: Write some dynamic, concrete poetry in HTML and JavaScript [project 3] due 10.08.2017

10.08.2017

### **Montage**

#### Reading

Scott McCloud, "Chapter 4: Time Frames," *Understanding Comics*

[reader]

O'Reilly *Safari* Database of reference books on HTML & JavaScript

[available through the UCSC Library website]

#### Viewing

Christian Marclay, *The Clock*, 2011

<http://www.youtube.com/watch?v=6cOhWtyXGXQ>  
Douglas Gordon, *24 hour Psycho*, 1993  
<http://vimeo.com/37328822>  
Thomson and Craighead, *Template Cinema*, 2004  
<http://www.templatecinema.com/>  
Zbigniew Rybczynski, *New Book*, 1976  
[https://www.youtube.com/watch?v=ZDem\\_3xr\\_3M](https://www.youtube.com/watch?v=ZDem_3xr_3M)

#### Code

See the folder Files/Code/Project4

#### Agenda

Workshop: Edit a multi-screen movie in HTML and JavaScript [project 4] due 15.08.2017

### 15.08.2017 **Découpage**

#### Reading

Noel Burch, "Chapter 1: Spatial and Temporal Articulations," in *Theory of Film Practice* (Princeton, 1981)

O'Reilly *Safari* Database of reference books on HTML & JavaScript  
[available through the UCSC Library website]

#### Optional Reading

Eisenstein, "A Dialectic Approach to Film Form," *Film Form: Essays in Film Theory*, [1929] 1949

#### Code

See the folder Files/Code/Project5

#### Agenda

Using the HTML <video> tag, edit together four or more clips [project 5] due 17.08.2017

### 17.08.2017 **Processing**

#### Reading

Casey Reas and Ben Fry, *Processing: a programming handbook for visual designers and artists, second edition* (MIT Press, 2014).

#### Viewing

<http://hello.processing.org/>  
<http://processing.org/tutorials/>

#### Agenda

1: Processing as a programming language for artists  
2: Workshop: Connect Three Points [project 6] due 22.08.2017  
<http://artport.whitney.org/commissions/codedoc/index.shtml>

### 22.08.2017 **Conceptual Art**

#### Readings

Sol LeWitt, "Paragraphs on Conceptual Art," 1967

[http://www.ddooss.org/articulos/idiomas/Sol\\_Lewitt.htm](http://www.ddooss.org/articulos/idiomas/Sol_Lewitt.htm)

Lawrence Weiner, "Indefinite Material Descriptions," 1968

<https://web.archive.org/web/20150513031004/http://iaaa.nl/cursusAA&AI/concept/weiner.html>

Videos of Casey Reas' work

(e.g., [http://www.youtube.com/watch?v=\\_8DMEHxOLQE](http://www.youtube.com/watch?v=_8DMEHxOLQE))

{Software} Structures by Casey Reas with Robert Hodgin, drive William Ngan, Jared Tarbell  
<http://artport.whitney.org/commissions/softwarestructures/>  
Casey Reas and Ben Fry, *Processing: a programming handbook for visual designers and artists, second edition* (MIT Press, 2014).  
[reader]

#### Optional Readings

Randy Kennedy, "Language as Sculpture, Words as Clay," New York Times, Oct. 21, 2007  
<http://www.nytimes.com/2007/10/21/arts/design/21kenn.html>

#### Viewing

Sol LeWitt, *A Wall Drawing Retrospective*  
<http://massmoca.org/sol-lewitt/>

#### Agenda

Workshop: Execute one of LeWitt's Wall Drawings by hand and then translate it into Processing [project 7] due 24.08.2017

### 24.08.2017 **Games and Postproduction**

#### Reading

Nicolas Bourriaud, *Postproduction: Culture as Screenplay: How Art Reprograms the World, Second Edition*, 2005

[reader]

Casey Reas and Ben Fry, *Processing: a programming handbook for visual designers and artists, second edition* (MIT Press, 2014).

[reader]

#### Viewing

Tómas Ybarra-Frausto, *Rasquachismo*, 2011  
<http://vimeo.com/27727487>

#### Agenda

1: Recycling, Reuse, Rasquachismo

2: Workshop: Remake Pong [project 8] due 29.08.2017

### 29.08.2017 **Machine Vision**

#### Reading

Vilém Flusser, "The Technical Image," *Towards a Philosophy of Photography*, 1983

[reader]

#### Optional Reading

Rosa Menkman, "Introduction," and "Glitch Studies Manifesto," and "A Technological Approach to Noise," *The Glitch Moment(um)*, 2011

<http://networkcultures.org/blog/publication/no-04-the-glitch-momentum-rosa-menkman/>

#### Code

See the folder Files/Code/Project9

#### Agenda

1: What happens when a moving image has a machine behind it?

2: Workshop: Play with machine vision [project 9] due 31.08.2017

### 31.08.2017 **Final Review**

