Art W23 AC: Data Arts

Art Practice Department, University of California, Berkeley
Berkeley Center for New Media, University of California, Berkeley
American Cultures Program, University of California, Berkeley

Fig. 1: Physical demonstration of networking principles at Final Projects event for W23AC (Photo: Irene Chien)

Course Description
From tax returns and health records to social media and traffic updates, many aspects of our lives depend on information that is stored deep in networked databases.

In Data Arts, we question the role of that data in our lives with critical and creative methods. We become data artists. Through our creative explorations, we will test limit cases for data. These limit cases can challenge conventional concepts of data, its generation, its reception, and its power. Through the creation of online media from raw data to refined visualizations, we approach core questions of data ethics, aesthetics and practices, including:
Can we measure everything? What is the role of privacy? Can we count beauty? Is data always fair? How can the meaning of data change? When does data box us in, and when does it set us free? How does a database work? Can there be data art? Can code be art? Can we make art with, about, for and against data? Does art provide us with cultural experiences that can make us more emancipated data citizens?

Rather than writing, we will count, measure, draw, film, animate, glitch, hack, share, photograph and program online content to advance and exchange ideas about data. In course galleries and video chat seminars we give each other peer-to-peer reviews of our works, and we will study the masters, heroes and villains of data culture in weekly missions.

Keeping with the data culture theme, grading is based on a final project and online exam (30%) and on an Engagement Index (70%) which counts our interactions throughout the online course experience.

See the syllabus for more information about this innovative course which is useful for anyone who wants to play an innovative role in online media, privacy, new media art, app development, and data-driven decision making.

Note: This course is 100% online. The website for the course will be linked here.

**Course Instructors:**

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**Course Designers, Advisors and Video Lecturers:**

Greg Niemeyer  
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Scott Friese

**Reading List**

All texts listed in the syllabus are provided online.

**Tech Requirements**

1. You will need access to a computer with fast, reliable Internet access and a web cam, such as one built into a laptop. If your connection is slow or choppy, you will not have a good video chat experience.
2. You will need access to a digital camera (smartphone works well enough).
3. An USB audio headset with mic for video chat seminars. If you don’t have this item, here’s an example of one that works pretty well: Headset Link
4. You need access to bluejeans via your university account.
5. Otherwise... no special tech knowledge is required!

Course Structure
This course emphasizes creativity and collaboration, through lessons that mimic achievements in online games, and learning in ‘the real world.’ Our aim is show how forms of play can be productive and to capitalize on technology’s ability to facilitate innovation and cooperation. Grading will consist of assignment completion and engagement as expressed by your engagement index.

Grading

<table>
<thead>
<tr>
<th>Grade Elements</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final project</td>
<td>10 % of final grade</td>
</tr>
<tr>
<td>Final exam</td>
<td>20 % of final grade</td>
</tr>
<tr>
<td>Engagement Index (between 1 and 99 percentile)</td>
<td>60 % of final grade</td>
</tr>
<tr>
<td><strong>Total Grade</strong></td>
<td><strong>100 %</strong></td>
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Missions/Assignments
Learning units in this course are called ‘Missions.’ You will need to complete at least one mission prior to your scheduled video chat section. Each mission consists of the following elements:
- View a video
- Read and view required text and artwork
- Complete assignment
- Review peer assignments.

15 Missions
The 15 Missions address the topics listed below:

1. Course Basics
   a. Texts and Videos (Text)
   b. Missions (Text)
   c. Gallery (Text)
   d. Engagement Index (Text)
   e. Leaderboard (Text)
2. Abstraction
   a. Classical Origins (Text)
b. Mirror as Medium (Text)
c. Bill T. Jones: Ghostcatching (Video)
d. Mission: Announcing the Invention of a New Unit (Video)

3. Identity
   a. Naming Conventions (Text)
   b. Mask, Performance and Transformation (Text)
   c. Nakamura: Identity Tourism and Racial Passing on the Internet (Text)
   d. Mission: Representor and Represented (Image)

4. Energy
   a. Imperial Turtles (Text)
   b. Edison and Tesla, AC and DC
   c. Energy and Data
   d. Mission: 1 Minute of Wasted Energy

5. Time and Frequency
   a. The Timestamp (Text)
   b. Atomic Clock, UTC, and GPS (Text)
   c. How Data Changes Its Meaning Over Time (Video)
   d. Mission: Delta (Animation)

6. Protocol and Territory
   a. Diplomacy and Treaties
   b. Layers of Network Protocols
   c. Mission: Performing off Protocol (Video)

7. Numeracy and Manipulation
   a. From I Ching to Leibnitz: Origins of the Binary System (Text)
   b. Twisting Numbers (Text)
   c. Charts and Graph Types (Text and Video)
   d. Using Stop Motion for Data Stories
   e. Using d3 for Dynamic Data Displays
   f. Mission: Visualize a Change (URL or video)

8. Taxonomy
   a. Aristotle: Category and Property (Text)
   b. Classification Crises (Video)
   c. Mission: Hidden Structure (Image)

9. Storage
   a. Server Farms (Video)
   b. Query (Text)
   c. Bryn, Page: The Anatomy of a Large-Scale Hypertextual Web Search (Text)
   d. Mission: A Legacy (Audio)

10. Adoption
    a. Language of the Oppressor (Text)
    b. Child Mirror (Text)
    c. Hebdige: Subcultures (Text)
    d. Mission: Contradicting Signs (Image)

11. Delegation, Automation and Participation
a. Feedback Loops for Engagement (Text)
b. Disney: Sorcerer’s Apprentice (Video)
c. The Art of Participation (Text)
d. Mission: Marking Exclusion (URL)

12. Privacy, Celebrity and Surveillance
a. Surveillance and Capture (Text, Reading: Agre, Philip)
b. Hassan Elahi: The Orwell Project (URL)
c. James Bridle: Watching the Watchers (URL)
d. Mission: Geotemporal Mapping (URL)

13. Aggregation and Diffraction
a. Background-specific Dating Sites (Text)

b. What Does Your Credit-Card Company Know About You? (Text)
c. Mission: Resisting Aggregation (Image)

14. Simulation, Immersion and Disembodiment
a. Digitization Completed (Text)
b. Stelarc: Ping Body (URL)

c. Yayoi Kusama: Mirrored Room (URL)
d. Mission: Immersive Mood (Video)

15. Innovation as Critique
a. Technological Determinism (Text)
b. Wiener: Revolt of the Machines (Text)
c. Mission: Underserved and Underused (PDF)

Section
The section meetings for this class will all take place online via video chat. You select your section time during course registration.

Each student is required to arrive at discussion time prepared to present for 3 minutes on the missions that they completed for homework. Additionally, you will have to bring at least one question concerning your coursework and be prepared to share critiques of fellow students’ artwork and remarks. Discussions for this course will take place via video chat (google hangout). Each section includes about 10 students and one instructor.

Participation
Internet Citizenship is about active collaboration and communication. An Engagement Index* is provided under your main profile in the course-site to help you measure this interaction. The engagement index measures your level of participation in this course including: comments on colleagues’ work, responses to readings and lectures, questions, answers, +1s, and other online interactions. Active collaboration in section and on the Website is required to complete each mission, but don’t wait for others to start your assignments. Be the first and get the most
comments!

*Engagement Index*
On your profile for the course Web site, you will find a very prominent number under your photo. That number is a total calculation of your interactions on the course site. This number can get quite high as you comment on your peers’ work and talk about readings, lectures and artwork. The index is worth 60% of your grade.

The Engagement Index is a constant tally of your activity on the course website. You get:
- 10 points for posting artwork to a mission
- 1 point for voting on another person’s work
- 1 point for receiving a positive vote on your work
- -1 point for receiving a negative vote on your work. This happens rarely.
- 2 points for writing a comment on any item in the website
- 2 points for receiving a comment on any of your work.

Class Format
This class combines online discussion (video chat) with an “anytime” virtual classroom. Students must choose a “Discussion Session” slot to meet with their instructors weekly. Once set, this discussion time will be relatively stable throughout the course. The missions, however, can be completed at any time, and in any order once the first four have been completed. All assignments and missions are found at UC Online.

Assignments
- **Missions**: Each week students are required to complete one Mission. They must be uploaded 24 hours before the first section of the week meets to allow for peer reviews.

Final Project
Students will work in groups to innovate and present a prototype of a data-driven solution to a currently emerging social challenge. The basic idea is to design a connection between an underused resource and underserved need. Such a connection could come in the form of a website, a mobile device, a meet up, a performance, installations, games, web services, social apps, and other projects in the physical world.

Final Exam
Students will complete a final exam with 10 essay themes. The exam will be administered online, and students will have to complete the exam in a time frame of 2 hours. The exam is “open book” so students may consult the web during the exam. The grading emphasis is on accuracy, quality of analysis and originality of argumentation.

Open Source Disclaimer
All student content produced through “Data Arts” is considered “open source” — ideas and projects that are meant to be shared and available to those engaged in the course, with no reasonable expectation that students retain intellectual property rights. Students will work with instructors to collaboratively build course content. Students and instructors may use and build on each others’ ideas for future educational and personal use. It is the student’s responsibility to separate licensable intellectual property from coursework. All student work is protected by FERPA and not to be shared outside of the course community. All course content will be deleted one week after grades are finalized.

**Attendance:** Students are required to attend class each day. Unexcused absences will negatively impact your participation grade. Excessive tardiness is not permissible, students will not be allowed to join online discussions after they have started.

**Email Policy:**
We will respond to email once per day, Monday-Friday only. The function of email is for scheduling a meeting or discussing an emergency situation only.

**Grade Dispute Policy:**
If you feel that a grade is unfair, please send an e-mail outlining your reasons for disputing the grade. After careful consideration, the instructor has the right to raise, lower or maintain the grade in question. Most successful grade change petitions are based on demonstrations of a clerical error.

**Academic Honor Code:**
Plagiarism, cheating, and other forms of academic dishonesty will not be tolerated. Plagiarism involves presenting other people’s ideas as your own without citing the appropriate source. Please review the university policy on academic honesty: [http://students.berkeley.edu/osl/sja/asp?id=983&rcol=1202](http://students.berkeley.edu/osl/sja/asp?id=983&rcol=1202)

If you have any questions about the policy, or about how to avoid academic dishonesty, please email me.

**Accommodations for students with disabilities:**
Please let us know as soon as possible if you need disability-related accommodations in this class. With a letter from the Disabled Students Program ([http://dsp.berkeley.edu](http://dsp.berkeley.edu)) detailing your situation we will be adequately prepared and more than willing to discuss and make any appropriate arrangements.

**Start here:** [https://login.uconline.edu/auth.html#](https://login.uconline.edu/auth.html#)