Advanced Design: Product Design

The Cooper Union School of Art
Spring 2025
FA-315B-1

Class Website
adpd2025.niktari.com

Time & Location
Mondays, 6–9:50pm
41 Cooper Square
901 Studio

Instructor
Nikki Makagiansar
nikki.makagiansar@cooper.edu

Course Description

In this course, students will learn how to critically conceptualize, develop, and iterate on interactive web-based products. Through a mix of lectures and tutorials, we will explore the web as a creative medium, and investigate past and present efforts that expand on and challenge the product design process. Projects will be guided by comprehensive research, wire-framing, and developing an interactive system using both prototyping software and basic HTML, CSS, and JavaScript. No prior coding experience is required.

3 credits. Pre-Req: Graphic Design II, Pre/Co-Req: Typography.

Learning Outcomes

By the end of this semester, students will:
- Use a basic vocabulary of interaction design to articulate their design process and critique others within the context of web-based projects.
- Evaluate how typography and its variables are applied to interactive systems to facilitate orientation, create consistency, and support users and systems.
- Use appropriate prototyping methods, including software tools and basic HTML, CSS, and JavaScript to visualize, communicate, and evaluate web-based products.
- Think critically and develop their own thoughts on the role of digital within the larger canon of design.

Required Materials & Supplies

Hardware
- A working laptop with modern browser(s) installed

Technology
- [Microsoft Teams](#)
  We will be using this to organize our class material and submit our projects and presentations.
- [Google Chrome](#)
  A fast, secure, and free web browser. We'll be mainly using Chrome for in-class demonstrations.
- [GitHub](#)
  We will be using GitHub to manage our code. Sign up with your cooper.edu email.
- [GitHub Desktop](#)
  We will also be using GitHub Desktop to manage our code.
- [Figma Desktop](#)
  Figma is a modern interface design tool that is collaborative online. Complete these three steps:
  1. Sign up with your cooper.edu email.
  2. Afterward, get verified as a student for a free education account [here](#).
  3. Lastly, once you have an account and are verified as a student, join our class team space [here](#).
- [CodePen](#)
  We will be using CodePen for our technical demonstrations. Sign up for an account.
- [Visual Studio Code](#)
  Visual Studio Code is a sophisticated text editor for code, markup, and prose.

Course Outline

Unit 1: The Web is Fluid
Weeks 1–5

Students will be introduced to the web, its unique affordances, and its base technologies. In this unit, the main affordance we will focus on is the web's fluid nature. Students will be primarily working with text, with the web as a substrate. We will do a review of the core principles of typography, and how those principles translate when working with the web. Students will learn about HTML, semantic DOM, and basic CSS. Students will also be introduced to web-specific planning methods for their projects.

This unit will culminate with Project 1: Book, which will be presented to the class on February 24.

Project 1: Book
Due February 24

Choose a piece of text to work with and typeset it as a multipage website. Consider how you can take advantage of the dynamic and non-linear potential of the web to create a compelling new experience for the reader.

Part 1: Concept & Site Maps
Part 2: HTML Skeleton
Part 3: CSS Styles
Part 4: Finalize

Unit 2: The Web is Interactive
Weeks 6–8

In this unit, students will learn about the interactive potential of the web, in which the user takes a central role. We will build on our knowledge of CSS and learn how to develop more complex, responsive layouts by introducing positioning techniques and media queries.

This unit will culminate with Project 2: Poster, which will be presented to the class on March 17.

Project 2: Poster
Due March 17

Create a series of three interactive web-based posters for a real or fictional event series.

Part 1: Concept & Sketch
Part 2: Refinement & Interaction
Part 3: Finalize

Unit 3: The Web is Generative
Weeks 9–12

In this unit, students will learn about the generativity within the web: creating an infinite amount of outputs based on a fixed set of rules. Students will be introduced to JavaScript to take the interactivity learned in the previous unit to the next level.

This unit will culminate with Project 3: Tool, which will be presented to the class on April 21.

Project 3: Tool
Due April 21

In this project, we'll explore the boundaries of what a generative tool can be when it is made on the web. Students will develop a website that generates content and form by an audience's input based on a set of rules. This can take the form of a practical tool or an abstract online experience. Students are encouraged to test and try the tool they made, along with their friends and peers.

Part 1: Concept & Sketch
Part 2: Coded Draft
Part 3: Refinement & Testing
Part 4: Finalize

Unit 4: The Web is Fluid
Weeks 9–12

In this unit, students will continue to explore the generative potential of the web, but this time in the context of data. Building on their knowledge of JavaScript, students will learn how to incorporate data into their work and explore how data can manipulate the form and content of a website.

This unit will culminate with Project 4: Clock, which will be presented to the class on May 12.

Project 4: Clock
Due May 12

In this project, you'll explore unconventional ways to visualize time by developing a time-based website. Consider different ways to visualize time: with or without numbers, literally or abstractly. The clock can be for a particular use case or have no specific function.

Part 1: Concept & Sketch
Part 2: Coded Draft
Part 3: Finalize

Grading Breakdown & Policy

Attendance & Participation	20%
Project 1: Book	20%
Project 2: Poster	20%
Project 3: Tool	20%
Project 4: Clock	20%

Your performance will be evaluated on its own merits, not based on comparing your work with other students. I focus on your understanding of concepts and your ability to apply them in a meaningful way. I don't prioritize code efficiency or professionalism as the primary criteria. I value the learning process and recognize that everyone progresses at their own pace. Should you have any inquiries regarding grading, please don't hesitate to reach out to me directly.

Attendance & Participation

Active participation is essential and comprises 20% of the final grade. This includes, but is not limited to: keeping up with readings, exercises, and projects; contributing meaningfully to class discussions; active participation in group work; and coming to class regularly on time.

Feeling underprepared for class is not an excuse for an absence. It is expected that students will complete the coursework on time, but if that is not possible for any reason, students are still expected to attend class. The class moves at a rapid pace, and failure to attend class will likely cause students to fall behind. Students are responsible for catching up on all missed material on their own or by contacting their classmates.

While attendance is one aspect of active participation, absence from a significant portion of class can compromise successful attainment of the course objectives. A significant portion is considered to be three weeks or 20% of class time. Lateness or early departure from class may be recorded as one full absence. I encourage you to let me know as much in advance as possible if you need to miss a class, are running late, or need to leave class early. More than three uncommunicated absences, late arrivals, or early departures will result in a deduction from your final grade.

Late Assignments

Assignments are due on the specified date and time mentioned in the course instructions. I understand that sometimes life gets busy, so late submissions are allowed. For each week your assignment is late, I'll deduct a small percentage from your score. If something unexpected happens (like a medical emergency or a family issue), let me know. I'll work with you to find a fair solution, like an extended deadline.

Assignment Rubric

ASSESSMENT	NEEDS IMPROVEMENT	SATISFACTORY	GOOD	EXCELLENT
CODE	Does not meet the stated requirements. Is missing core components of the assignment. Contains significant errors that display a lack of comprehension or understanding of the material.	Ability to develop working functional code with limited errors. Demonstrates comprehension by building upon the technical concepts in submitted work.	Initiates learning beyond the minimum requirements of the assignment. Attempts to develop skills and takes risks without sacrificing legibility and functionality of code.	Creative solutions to nuanced and complex problems in programming. Code is formatted in an organized, highly readable manner, with minimum bugs and errors.
DESIGN	Design shows a lack of intentions or does not respond to the assignment brief.	Design elements are intentional and motivated by the assignment brief.	Design demonstrates an emerging level of care and consideration. Work shows strong potential with space for improvement.	Design demonstrates a well-developed sense of aesthetics or form through execution. The work demonstrates mature consideration of the relationship between concept and execution.
CRITIQUE	Engages superficially with the conceptual material delivered each week.	Evidence of engagement with the conceptual material delivered each week.	Demonstrates engagement with the conceptual material beyond the minimum requirements for the course. Shows emerging fluency in utilizing concepts within their own work.	Demonstrates fluent grasp of conceptual material presented. Is able to skillfully integrate concepts into their own work. Ability to build compelling narratives around individual assignments.

Basis of Grade Determination

Grades are determined by converting percentages to GPA based on this table.

%	94–100	90–93	89–87	86–84	80–83	79–77	74–76	70–73	69–67	64–66	60–63	0–59
LETTER	A	A–	B+	B	B–	C+	C	C–	D+	D	D–	F
GPA	4	3.7	3.3	3	2.7	2.3	2	1.7	1.3	1	0.7	0

Open Source

You are encouraged to help each other out with programming, but unless otherwise specified you must turn in your OWN work.

Copying/pasting and reusing code is a key part of the programming process. You often learn best by modifying working examples rather than starting from scratch. We stand on the shoulders of giants; that's the essence of open-source philosophy. However, there is a very important caveat: any open-source code you borrow and/or modify must be labeled as such.

Class Schedule

The schedule may be subject to change over the course of the semester.

📌**Key Dates**

Wednesday, 3/12   Modified Schedule Day (Monday Classes Meet)

Monday, 4/14   Spring Break (No Class)

Week 1 1/27

Lecture   Introductions & Course Overview
The World Wide Web

Activity   Think Like a Coder

Assigned   Download Software
Class Survey
Project 1, Part 1

Week 2 2/3

Lecture   Intro to HTML
Environment Setup
Folder Structure & File Linking

Activity   In-Class Exercise: HTML Wiki

Assigned   Finish In-Class Exercise
Project 1, Part 2
Submit a Website: Raw HTML

Week 3 2/10

Lecture   HTML as Design
Intro to CSS
Choosing a Typeface

Activity   In-Class Exercise: CSS Wiki

Assigned   Finish In-Class Exercise
Project 1, Part 3

Week 4 2/17

Lecture   CSS Layout

Activity   In-Class Exercise: CSS Layout Worksheet

Assigned   Finish In-Class Exercise
Project 1, Part 4

Week 5 2/24

Lecture   CSS Layout Part 2, Nested Targeting & Hovering
Website as Poster

Activity   ⚠️ Project 1 Crit ⚠️
In-Class Exercise: Nested Targeting & Hovering Worksheet

Assigned   Finish In-Class Exercise

Submit a Website: Poster
Project 2, Part 1

Week 6   3/3

Lecture   Responsiveness & Media Queries
In-Class Exercise: Creative Media Queries

Assigned   Finish In-Class Exercise
Project 2, Part 2

Week 7   3/12   (MODIFIED SCHEDULE DAY)

Lecture   Flexbox

Activity   In-Class Exercise: Flexbox Letterforms

Assigned   Finish In-Class Exercise
Project 2, Part 3

Week 8   3/17

Lecture   Intro to JavaScript

Activity   ⚠️ Project 2 Crit ⚠️
In-Class Exercise: JavaScript ABCs

Assigned   Finish In-Class Exercise
Project 3, Part 1

Week 9   3/24

Lecture   DOM Manipulation & Inputs

Activity   In-Class Exercise: Inputs Worksheet

Assigned   Finish In-Class Exercise
Submit a Website: Inputs
Project 3, Part 2

Week 10   3/31

Lecture   Conditionals

Assigned   Project 3, Part 3

Week 11 4/7

Lecture   Events & Functions

Assigned   Project 3, Part 4

🌴 SPRING BREAK 🌴 4/14

No Class   Enjoy your break!

Week 12 4/21

Lecture   JavaScript Date Methods

Activity   ⚠️ Project 3 Crit ⚠️

Assigned   Project 4, Part 1

Week 13 4/28

Lecture   Mapping Data

Assigned   Project 4, Part 2

Week 14 5/5

Lecture   Wildcard!

Assigned   Project 4, Part 3

Week 15 5/12

Activity   ⚠️ Project 4 Crit ⚠️

Lecture   What's Next

Class Policies

Office Hours
If you've already troubleshoot your coding problem with a member of your cohort, or if you need to discuss anything else with me outside of class hours, you can email me to schedule a meeting, which will be held either in-person or virtually depending on the time. Meeting blocks are limited to 30 minutes. Please schedule meetings at least 48 hours in advance.

Community Agreements
On the first day of class, we will collectively write and agree upon a code of conduct for our group. This agreement is intended to help us create and maintain a safe, empathetic, and productive space for our course. It will live on our course site and can be revised and modified, with all of our input, over the semester.

Statement of Inclusion
The School of the Art supports inclusive and accessible learning environments where diverse perspectives are recognized, respected, and seen as a source of strength. The school is enriched and enhanced by diversity, including race, ethnicity and national origins, gender and gender identity, sexuality, socio-economic class, age, religion and disability. The SoA expects every member of the community to contribute to an inclusive and respectful culture for all in its classrooms, work environments, and at campus events. Every student has a right to learn in an environment free of harassment, sexual misconduct, or discrimination.

As an instructor of this class, I will uphold these values: it is my intent that students from all diverse backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that the students bring to this class be viewed as a resource, strength and benefit. As an instructor of this class, I intend to foster an environment of trust and safety in the classroom so that each student will be able to hear and respect each other along with the different perspectives and worldviews expressed in class. It Is our intent to present materials and activities that are respectful of diversity: gender identity, sexuality, disability, age, socioeconomic status, ethnicity, race, nationality, religion, and culture.

Your suggestions on any of the above are encouraged and appreciated. Some of the material in this course may evoke strong emotions; please be respectful of others' emotions and be mindful of your own. Please let me know if something said or done in the classroom, by either myself or other students, is particularly troubling or causes discomfort or offense. While the intention may not be to cause discomfort or offense, this kind of

impact should not be ignored and is something that is taken seriously and deserves attention.

Accommodations

The Cooper Union makes reasonable accommodations and modifications to policies, practices, and procedures to meet the needs of students with disabilities on campus. Students with disabilities seeking any accommodations regarding any aspect of the full Cooper Union experience—including anything pertaining uniquely to one of the Cooper Union's distinct schools— are expected to contact the Office of Student Care and Support to formally register their accommodations requests, demonstrate self-advocacy, and responsibly engage in their learning. Questions about disability and medical support should be sent to disability@cooper.edu. The Director of Student Care and Support oversees the student disability and medical accommodation and support processes. For more information visit: https://cooper.edu/students/student-affairs/disability.

Sexual Misconduct and Discrimination Reporting Requirements

While I want you to feel comfortable coming to me with issues you may be struggling with or concerns you may be having, please be aware that we have some reporting requirements that are part of our responsibilities as a member of the faculty. If you inform me of an issue of sexual harassment, sexual assault, or discrimination, I will keep the information as private as I can, but I am required to reportthe basic facts of the incident to Cooper's Title IX Coordinator, Grace Kendall. If you would like to speak to the coordinator directly, she can be reached at gkendall@cooper.edu, 212–353 4053, or in person on the 3rd floor of the residence hall (29 3rd Avenue). The Title IX Coordinator will be able to assist you in understanding all of your options and in connecting you to available resources on and off-campus. Remember that speaking with the Title IX Coordinator does not obligate you to file a complaint or participate in an investigation unless you choose to do so.

To speak with someone confidentially about issues of sexual misconduct, you may contact the Student Care Coordinator and Counselor, Cassandra Jolicoeur at jolicoeu@cooper.edu, 212–353–4006, or in person on the 3rd floor of the residence hall (29 3rd Avenue). For on-campus confidential support, see counseling below. Off-campus confidential supportfor sexual violence is available through the Safe Horizon Crisis Center (212–577-7700) or the RAINN hotline (877–995–5247). For more information: https://cooper.edu/students/student-affairs/sexual-misconduct.

Counseling and Mental Health Support

Counseling and Mental Health Support at The Cooper Union are coordinated through the Office of Student Affairs. The Student Care Coordinator and Counselor Cassandra Jolicoeur meets with students to provide support and to discuss mental health and counseling needs. Cassandra can be reached at jolicoeu@cooper.edu or at 212.353.4006. See this link for more detailed information: [Counseling and Mental Health Services | The Cooper Union](#).