Intro to Web Development

Tandon School of Engineering of New York University
Technology, Culture + Society | Integrated Digital Media
DM-UY 2193 Section C | Fall 2020

September 2 - December 13
Monday + Wednesday 10:00 am - 11:50 pm
IDM - 370 Jay Street, 3rd Floor, room 313 + ONLINE

Course Website: Forthcoming
Course Wiki: Forthcoming

Professor: rebecca (marks) leopold
Contact: rebleo@nyu.edu
Office: 370 Jay Street, 3rd Floor, room 344
Office hours: Online by appointment. Please schedule with me at least 24 hours in advance.

Course Pe-requisites:

Basic computer knowledge. Familiarity with programming is preferred but not required.

Course Description:

This course is an introduction to viewer (client) side programming. The semester is scheduled in sequence to enable incremental understanding and application of best practices for authoring the web. This course will provide a basic understanding of the methods and techniques of developing a simple to moderately complex front end site. Students will create and maintain websites that take into consideration aesthetic quality, user experience and technical expertise. Participants will explore granular techniques for design and programming using: HTML5, CSS3, EcmaScript6 and various external libraries.

IDM Program Learning Objectives:

Students will:

1. develop conceptual thinking skills to generate ideas and content in order to solve problems or create opportunities.

2. develop technical skills to realize their ideas.

3. develop critical thinking skills that will allow them to analyze and position their work within cultural, historic, aesthetic, economic + technological contexts.

4. gain knowledge of professional practices and organizations by developing their verbal, visual, and written communication for documentation and presentation, exhibition and promotion, networking + career preparation.

5. develop collaboration skills to actively and effectively work in a team or group.

Course Objectives:

* Web Development Workflow Including Command Line Tools
* User Interface (UI) / User Experience (UX)
* HTML5 / CSS3
* The Responsive Web (flexible media & media queries)
* EcmaScript 6
* CSS + EcmaScript Libraries: Bootstrap, Materialize, etc.

Student Learning Outcomes:

By the end of the course, students will be able to:

1. Design, build, and develop content for a professional-quality website
2. Understand + implement the iterative process - including maintaining + adding to an existing site
3. Learn how to proactively learn + use the web to research open source tools + documentation
4. Create an internal developer / creative community

Course Structure:

Class time will be spent as a combination of lecture, discussion, in class exercises, group work, critique + student presentations. Homework will consist of weekly projects that ask students to respond to readings, thinking critically about the cultural implications of networked technologies while building on each week's technical material. After week two - students should expect to build and publish a new web page every week in response to the technical and conceptual material.

Course Modality:

This will be a blended synchronous class with many students learning remotely via Zoom. Class meetings will be recorded in the event a students is unable to attend synchronously. There will be a class forum in NYU Classes where students will give feedback on one another's work asynchronously. In the event NYU returns to remote learning - all students should expect to attend class via Zoom.

Course Materials:

- Students will need a laptop (or desktop) for class (if this is an issue, please come talk to me).
- Text editing software - VCS, Atom, Sublime
- Web Browser: Chrome or Firefox
- Command Line - Mac Terminal or Windows Power Shell
- A Github Account + Git

Research + Resources (or the class repo):

All materials for this class are open source + can be accessed via the web. Regular updates to the class repo will contain starter code gone over during class as well as links to further technical reading (or watching). There will likely be more resources than you could possibly research + implement each week. The idea is to point students to a wide array of resources with an emphasis on the most modern + concise online documentation. Pick and choose what is of most interest to you - the repo is a jumping off point for your own research + you can always return back to a week to catch up on missed material. Later in the semester students will be responsible for citing + discussing their research methods and discoveries with the class.

"Share" (or the class wiki):

The class wiki - is where the rest of the syllabus including in-class and homework assignments will be found. To turn in your homework you should add a link to your work weekly using [Markdown](https://www.markdownguide.org/). You are required to post on the wiki. To contribute to the wiki you must set up a [Github](http://www.github.com) account.

Readings:

Readings will be assigned weekly and can be accessed from the class wiki.

Grading + Attendance Policy:

Class Participation (20% of grade): Please arrive on time having completed the assignments. Participation in class discussions and peer feedback are not only expected, but will be reflected in your grade.

Weekly Design + Technical Exercises (20% of grade): will be executed through the semester by following in class demonstrations, online tutorials and assigned readings. These exercises will be essential for learning markup and coding and to successfully complete more complex projects.

Class Site for Documentation + Reflection (15% of grade):
Students will be expected to document their work, write reading and personal reflections on a website built for + during class using [Github pages](https://pages.github.com/). We will build this site together incrementally during the first few weeks, following assignments + projects are to be added + linked to throughout the semester.

Midterm Project (20% of grade)
The midterm assignment will be a project that demonstrates a working knowledge of HTML and CSS elements. This project must be completed, published + presented in class.

Final Project (25% of grade)
Class will culminate with final projects. It is expected that these will be both technology and content driven. The final project will be built over the course of several weeks. This project must be completed, published + presented in class.

Qualitative Grading Overview

A. Excellent (90-100)

Performance, participation, and attendance of the student has been of the highest level, showing sustained excellence in meeting course responsibilities. Work clearly differentiates itself from other work, has memorable impact, pursues concepts and techniques above and beyond what is discussed in class. The student thoroughly understands the web design and development process.

B. Very Good / Good (80-89)

Performance, participation, and attendance of the student has been good, though not of the highest level. Work demonstrates a better than average web design and development process.

C. Satisfactory (70-79)

Performance and attendance of the student has been adequate, satisfactorily meeting the course requirements. Work is average and competent, showing a basic understanding of the web design and development process.

D. Poor; Below Average (60-69)

Performance and attendance of the student has been less than adequate. Work is lacking in many or most areas that show any understanding of visual foundation. Problems may include lack of interest, procrastination, poor planning and poor craft.

F. Unacceptable (59 & Below)

Performance and attendance of the student has been such that course requirements have not been met. Work shows no overall understanding of the course material on many levels or either a severe lack of interest.

Academic Accommodations:

If you are student with a disability who is requesting accommodations, please contact New York University's Moses Center for Students with Disabilities at 212-998-4980 or mosescsd@nyu.edu. You must be registered with CSD to receive accommodations. Information about the Moses Center can be found at http://www.nyu.edu/csd. The Moses Center is located at 726 Broadway on the 2nd floor.

Weekly Schedule:

**** Note - the following schedule is an outline, subject + likely to change. After the first week please refer to the class repo + wiki.**

Part 1 - Introduction to the (local) Web (dev workflow)

Week 1 - Wednesday September 2

* Intro to Course
* What is the web?
* Intro to GitHub

Assignment:

1. Sign up for Github + email me yr username. Download + install the requisite software. Set your local UI ready for the semester.

2. Reading: John Berger - Ways of Seeing episodes 1, 2, 3, 4 (approx 1 hour 45 minutes), 1972. Take notes. Be prepared to talk about the text in class next week and to prepare a website response the following week.

* https://www.youtube.com/watch?v=0pDE4VX_9Kk
* https://www.youtube.com/watch?v=m1GI8mNU5Sg
* https://www.youtube.com/watch?v=Z7wi8jd7aC4
* https://www.youtube.com/watch?v=5jTUebm73IY

Wednesday September 9

* Intro to Unix + the Command Line
* Intro to HTML

In Class Exercise:

* Clean the Fridge

Assignment

* Write a response to the "text." Do not simply summarize what you saw, instead tell us your thoughts. Did a moment jump out at or resonate with you? Did you disagree with something? Did it make you think of something you hadn't thought previously?
* *Ways of Seeing* website response: Using the sample HTML - create a webpage to contain your written response. Feel free to use images and hyperlinks. Be creative!

Week 2 - Monday September 14

* Discuss *Ways of Seeing* web pages
* Lecture: HTML
  * The <img> tag - Intro to Images in HTML
  * Hyperlinking w/ HTML

In Class Exercise:

* Creating a local directory to house your work locally
* Running a local HTTP Server for prototyping

Assignment:

* Reading - Vannevar Bush, 1945 + Tim Berners Lee, 2010. Be prepared to discuss the reading in small groups on Wednesday.

Wednesday September 16

Class Site Workshop:

* Installing Git
* Setting up class site w/ Github Pages
* Creating + cloning a repo to publish finished work

Assignment:

* In groups of 2 -, discuss your thoughts on the reading and devise a web page response you will code together. Create a webpage to contain your written response. Include at least one image to illustrate your thoughts.
* Push your new class site to Github pages. With your partner - be prepared to share your work with thee class on Monday.

Part 2 - Interaction Design for the Web w/ CSS

Week 3 - September 21 and 23

* Intro to CSS styling
* Site Maps + Wireframes

Assignment:

Design Thinking Presentations - Your presentation must be created in HTML + CSS

Week 4 - September 28 and 30

* Student Design Thinking Presentations

* CSS Box Model + CSS Positioning

Assignment:

Reading + Website Prompt: Net Art

Week 5 - October 5 and 7

* Responsive Web Design
* CSS Flexbox + Grids

Assignment:

Reading + Website Prompt: Gee Debord

Week 6 - October 12 and 14

* CSS Animation
* Midterm Project Proposals + User Testing

Week 7 - October 19 and 21

* Midterm Project Presentations

Assignment:

Reading: Tim O'Reilly, 2005 + 2009

Part 3 - Programming Interaction in the Browser with JavaScript + the DOM

Week 8 - October 26 and 28

* Intro to JavaScript + the DOM

Assignment:

Reading + Website Prompt: Marshall McLuhan

Week 9 - November 2 and 4

* Programming in the Browser w/ Native JavaScript

Assignment:

Reading: What is the DOM + Eloquent JS

Week 10 - November 9 and 11

* Programming in the Browser w p5.js
* Intro to JQuery

Week 11 - November 16 and 18

* More JQuery
* Intro to Bootstrap

Week 12 - November 23 and 25

* Final Project Proposals

Week 13 - November 30 and December 2

* Final Project User Testing

Week 14 - December 7 and 9

* Final Project Critique