USC Iovine and Young Academy
Arts, Technology and the Business of Innovation

ACAD 275 - Dev I

Spring 2024 | 4 Units
Tuesday/Thursday 5:00pm - 7:50pm
Room IYH 211

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IT Help
Hours: M-F 9:00am - 6:00pm
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Course Description
Whether Twitter, Facebook, Google Maps, or Dropbox, the vast majority of cutting-edge software applications are now developed on the Web. Because of this, being able to develop websites is a core competency that any innovative technologist must understand. Students will learn the basics of web design, scripting, and interactivity. By the end of the course students will not only have the skills to build an interactive website but will have a solid foundation in scripting fundamentals.

Learning Objectives and Outcomes
By the end of this course students should be able to:
- Have a working knowledge of the web development process
- Demonstrate an in-depth understanding of HTML and CSS
- Have a working knowledge of JavaScript language and jQuery library
- Demonstrate a fundamental understanding of scripting and programming concepts.
- Demonstrate a basic fluency in the structure and protocols of the internet
- Apply UI, UX, interactivity, and visual design principles to their work

Recommended Preparation
Download and install the FileZilla FTP client and the Visual Studio Code IDE software in order to start uploading content to the web on day one.

Course Notes
The class will be a mix of technical demonstrations, software workshop exercises, lectures on the history and contemporary applications of web design, as well as collective critique sessions. Technical demonstrations may be recorded and shared with the students afterward for further review.

Course Structure
Students are expected to participate in lecture discussions and critiques. Students are responsible for completing assignments and projects by stated deadlines. Most assignments will be uploaded by students to their USC web space and linked from an assignment page.

Technological Proficiency and Hardware/Software Required

Students will need a laptop computer and the following software:

• Visual Studio Code
• Adobe Photoshop CC
• Adobe Illustrator CC
• Figma
• Git

How to Purchase Software at the Discounted Rate Through the USC Bookstore

The following first year software are now available for purchase online through the USC Iovine and Young software catalog at the Academy discounted rate:

Software	IYA Short-Term License at USC Bookstore
Adobe Creative Cloud	$70 2022-2023 annual license

To purchase:
• Visit: https://commerce.cashnet.com/IOVINE
• Select the software license(s) you would like to purchase by clicking "View Details" or the software title, and make your purchase.
• You will receive an order confirmation receipt at the email address you provided.
• You will be notified by email when the software license has been activated.

If you have any questions about this process, please do not hesitate to contact Academy IT Support at iya.helpdesk@usc.edu.

Grading Breakdown

Assignment	Grade %
Class Participation	10%
Labs	48%
Midterm	12%
Final	30%
TOTAL	100%

Lab1: Hello World

Create a simple HTML page and upload it your server space using FileZilla
Name the page index.html and place it on the root. The page includes:
• Your name
• A picture, it could be a photo or an avatar

• A link to a website you think is well designed and you feel has interesting layout and interaction
Submit a link to the LMS

Lab2: HTML
Create a webpage highlighting a collection of local and campus businesses. The page should have at least 8 entries as well as a title header and some description text. This page does not need CSS but do include a favicon. Place the whole project in a folder called "lab2", with no capital letters and no spaces. Place your images in a subfolder called "img" or "images". Name the page index.html
Each entry should have:
• A tite
• Some description text
• An image that floats in the text
• The title and image should link to the businesses in a new tab
• A properly placed <title> tag and semantic tags where appropriate.
Submit a link to the LMS yoursite/lab2

Lab3: Design
Take inspirations from websites you find interesting and begin the process of designing one for yourself. This site should function as a portfolio website, highlighting your past work, interesting projects, and achievements. The site should have a home page and at least 3 subpages with a consistent nav and design between them. But the first step is just design it. Think about colors and layout. Where you want sections and subsections. How will you draw viewers in? Using Figma, mockup and wireframe how you imagine, you would like your site your site to look. Include at least one mockup and one wireframe in your Figma submission. You are not shackled to what you create but it will be a critical starting point and reference. This site will keep iterating and evolving through several labs going forward.
Submit a link to your Figma design to the LMS

Lab4: CSS
Referencing your design mockups and wireframes from lab3, begin building your site. Use CSS to develop and implement colors and layout. For this lab you only need to build the homepage but do include the navigation for the other pages.
Your site should have:
• A cohesive color scheme that uses at least 4 colors
• Rollover changes for both text and image links
• An aesthetic layout for dividing up the space and sections
• A background image banner, with a text title on top
• A background for the site.
Submit a link to the LMS yoursite/lab4

Lab5: Sass and Grids
Copy Lab4 and convert your CSS to Sass. Then convert your site to a grid layout using the display grid property. Some things should full width like the title or banner. The subsections should be a

fraction of the full grid, creating your layout columns. Experiment with different column widths. Use nesting, variables and any other Sass functionality you like.

Now is also the time to build out the rest of the site's sub pages. There should be at least 3 sub pages as well as the home page. All pages should reference the same stylesheet. Make sure you have a constant navigation menu across all sections. Highlight the active tab.
Submit a link to the LMS yoursite/lab5

Lab6: Responsive Design
Copy Lab5 and create a new version that features an adaptive layout, that changes to display optimally for a range of devices.

Rewrite your original css to reorganize and optimize your layout in such a way that it works better across small, normal and large device targets. Also consider ways in which images and video can scale regardless of target. Don't forget to take extra large resolutions into consideration. You don't need to make targets for them but your default layout should not break if stretched extra wide.

Your site is to have at least two media queries: One for 768 pixels and under and another media query for 480 pixels and under. Write your default css to target 768 pixels and over. Put all CSS directives for a specific media query in a single media query. Be sure not to repeat your CSS directives in ways that do nothing. This is the last lab that is a direct iteration of your portfolio site.

Make sure to include a viewport tag in your header such as:
<meta name="viewport" content="width=device-width, initial-scale=1">
Submit a link to the LMS yoursite/lab6

Lab7: CSS Transitions
Create a page that showcases 5 different CSS animations and transitions. Include some rollovers, some image changes, some text effects, and some animations. Consider this lab a sandbox to experiment with some transitions you might consider adding to your portfolio site.
Submit a link to the LMS yoursite/lab7

Lab8: jQuery
Create a page that showcases 5 different jQuery interactions and animations. The page should include an animated dropdown menu and some page load effects. Different page elements can animate or transition in different ways, (ie position, fade, rotate, zoom, etc). Use media queries so that the main main navigation becomes a dropdown menu at small device widths.
Submit a link to the LMS yoursite/lab8

Lab 9: Random Image Gallery
Using your knowledge of javascript or jQuery create a image gallery that has the ability to display a collection of images both sequentially and randomly. The gallery should have:
• Next and Back buttons
• A random button

- An autoplay feature that pauses when the user interacts with it
- An animated visual transition between images
- Clicking an image expands it to a full screen with a shaded overlay
- Clicking the overlay reduces an expanded image

Submit a link to the LMS yoursite/lab9

Lab 10: Forms

Create and style an order form. The page should give the user feedback when submitted as well as emailing them a receipt. Consistent style and alignment is critical. The form should include:
- Text fields, dropdown menus, a check box, radio buttons, a submit button, and anything else.
- One field that has input limited to numbers only
- One input field that requires a valid email address and checks the user submission before they submit the form

Submit a link to the LMS yoursite/lab10

Lab11: Login Page

Create a simple login page that uses persistent data. The user should be prompted to log in. When the user is logged in the page should display welcome (username), an icon, and a logout button at the top. The user should remain logged in, even if they refresh the page. Only clicking the logout button will reset the page. Make it look good.

Submit a link to the LMS yoursite/lab11

Lab 12: Version Control

Using GitHub and GitHub desktop, create a git repository with your final project group. After the repo is created, each group member needs to pull the repo, update some of the files and push at least one commit, with a clear comment. Make sure your GitHub repository is public.

Submit a link to your group git repo. Everyone in the group posts the link to the LMS

Midterm: Portfolio Website

Using your skills from the labs so far, create a polished portfolio website. The site should have a home page and at least 3 subpages with a consistent navigation and design between them. The site should employ responsive design and incorporate JavaScript or jQuery interactions. Make the page slick and visually interesting, highlighting your past work, interesting projects, and achievements. The midterm will have one beta milestone. Use useful feedback from the crit to iterate on your design and polish it for the final deliverable.

Submit a link to the LMS yoursite/midterm

Final: Web App

The Final is a fully flushed out large scale project. Working in groups, design and develop a mobile first web application. Your group may opt to use any javascript library or framework they wish. The project will begin with an individual proposal. Proposals will be voted on in class in order to form groups. Once groups are formed each group will be tasked exploring ideas and thinking about how they would best convey them as a software product. The groups then build

off these ideas and develop a prototype, a beta, and a release candidate all while documenting the process. Students shouldn't hesitate to experiment with design and interface, and explore the limitations of the medium. There is an expectation however, of a well-considered, well-designed application. Milestones and a groups ability to self organize will be critical.
Submit a link to the LMS https://yourproduct.com

Participation

In-class participation is an important and required component of the learning methodology for this course. You are expected to attend class and coordinate with classmates on group projects, as well as maintain communication and progression of your group assignments outside of class. Come to an agreement with group mates on a specific medium for communication and how to make up for a missed class session or meeting.

Grading Scale

Course final grades will be determined using the following scale

A   95-100
A-   90-94
B+   87-89
B   83-86
B-   80-82
C+   77-79
C   73-76
C-   70-72
D+   67-69
D   63-66
D-   60-62
F   59 and below

Course Outline (Subject to Change)

	Tuesday	Thursday
Week 1	Introduction to class Setting up your environment Connecting with FileZilla Begin Lab 1	Server file systems and naming Basic Html, Head, title, body, h1, a, img Visual studio code with extensions, Live server, Sass compiler
Week 2	Examine and crit favorite sites Style building blocks, div, span, p Semantic html, main, header, footer, nav Begin Lab 2	(Remote) Layout Design Wireframes, Mockups Introduction to Figma
Week 3	Introduction to CSS Colors, text, hover styling, layouts Begin Lab 3	CSS Continued Borders, radius, shadows Box model Display, Position, Rotation, Calc, index

Week 4	More CSS Images and backgrounds Pseudo classes and class selectors Begin Lab 4	Introduction to Sass nesting, variables Compiling to CSS
Week 5	Using the Grid Layout Fractional sizing Begin Lab 5	Static Overlay Menu Anchors and smooth scrolling
Week 6	Begin Responsive Design Media queries Target widths Begin Lab 6	Responsive Design Continued Changing the grid, margins, font sizes, images, videos
Week 7	CSS Transitions Rollovers, image and text Transitions, Animations Begin Lab 7	Intro to JavaScript and jQuery Functions and Events Creating an animated menu
Week 8	jQuery animation, transition, and chained sequences Begin Lab 8	In Class Crit Midterm Beta Due
Week 9	JavaScript Programing Basics, variables, conditionals Loops, arrays	In Class Crit Midterm Site Due
Week 10	JavaScript Lightbox, carousels, photogallery with random image Begin Lab 9	LAMP and PHP Setting up a WAMP / MAMP server PHP includes, Designing reusable HTML
Week 11	Forms, CSS, and JavaScript Form styling and input checking Begin Lab 10	Begin work on Finals Mobile first web app
Week 12	Persistent data, Sessions, and Cookies Login page Begin Lab 11	In Class Crit Final Proposal and Mockups Due Form Groups
Week 13	Version control and repositories Working with Git and Github Begin Lab 12	In Class Crit Final Design, Wireframe and Figma Due
Week 14	Mobile-first web applications JavaScript Touch Events	In Class Crit Final Alpha and Git Due
Week 15	Unity Preview with AR and VR C# vs JavaScript	In Class Crit Final Beta Due
Final	Presentations - Final Site Due	

Assignment Rubrics

Student work will be assessed based on:

• Level of understanding and execution of software skills on assignments.

- Degree of complexity of the assignment goal both creatively and technically.
- Innovative application of tools and concepts covered in class.

Assignment Submission Policy

Upload all of your digital assets for your assignments via FTP to your assigned web account and submit the URL to your assignment in the LMS at least one hour prior to the start of the class session.

Late Submissions

Due dates and requirements for all assignments will be posted on the course site. Students will "post" their work to their USC web space as defined on the course site. It is the student's responsibility to post work by the due date following the defined class procedures, even if you miss class. Assignments will be accepted after the deadline with the following grade penalties. Do not ask for extensions.

- Submission in the 24 hours after the deadline   10% deduction
- Submission more than 24 hours after the deadline   25% deduction
- Submission more than 1 week after the deadline   100% deduction

Grading Timeline

Checkpoints and assignments will be reviewed, graded, and provided with feedback within two weeks of submission.

Exam Policy

No make-up exams (except for documented medical or family emergencies).

Classroom norms

Students are expected to be respectful of each other and the space in which they inhabit. We are all here to have a positive learning experience, have fun, get to know each other, and grow as creative thinkers. Students being disruptive to the class who do not cease their activities will be asked to leave and if necessary will be escorted out by DPS officers.

Synchronous session recording notice

Some synchronous sessions will be recorded and provided through recorded Zoom. USC has a policy that prohibits sharing of any synchronous and asynchronous course content outside of the learning environment.

SCampus Section 11.12(B)
Distribution or use of notes or recordings based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study is a violation of the USC Student Conduct Code. This includes, but is not limited to, providing materials for distribution by services publishing class notes. This restriction on unauthorized use also applies to all

information, which had been distributed to students or in any way had been displayed for use in relation to the class, whether obtained in class, via email, on the Internet or via any other media. (See Section C.1 Class Notes Policy).

Class Attendance Policy

The Academy maintains rigorous academic standards for its students and on-time attendance at all class meetings is expected. Each student will be allowed **two absences** over the course of the semester for which no explanation is required. Students are admonished to not waste excused absences on non-critical issues, and to use them carefully for illness or other issues that may arise unexpectedly. Except in the case of prolonged illness or other serious issue (see below), no additional absences will be excused. Each unexcused absence will result in the lowering of the final grade by ⅓ of a grade (e.g., an A will be lowered to A-, and A- will be lowered to a B+, etc.). In addition, being tardy to class will count as one-third of an absence. Three tardies will equal a full course absence. Missing more than 15min of class time will be counted as an absence.

Students remain responsible for any missed work from excused or unexcused absences. Immediately following an absence, students should contact the instructor to obtain missed assignments or lecture notes and to confirm new deadlines or due dates. Extensions or other accommodations are at the discretion of the instructor.

Automatically excused absences normally may not be used for quiz, exam or presentation days. Using an excused absence for a quiz, exam or presentation, such as in the case of sudden illness or other emergency, is at the discretion of the instructor.

In the case of prolonged illness, family emergencies, or other unforeseen serious issues, the student should contact the instructor to arrange for accommodation. Accommodation may also be made for essential professional or career-related events or opportunities. Additionally, students who need accommodations for religious observations should provide advanced notice to instructors and student athletes should provide Travel Request Letters. All accommodations remain at the discretion of the instructor, and appropriate documentation may be required.

Unless students provide an accommodation letter from USC's Office of Student Accessibility Services (OSAS) or a letter from IYA Student Services detailing visa or travel restrictions, attendance and active participation is expected in the classroom. Any student with such accommodations should submit their accommodation document to the instructor as soon as possible to discuss appropriate accommodations.

Students who are experiencing illness should not attend class in person. Please inform the instructor in advance of any class sessions that you can't attend for medical reasons, and accommodations will be arranged to view recorded lectures and submit alternatives to any

missed class participation. Students will not be penalized for not attending class in person under these circumstances.

Spring 2023 addendum
Unless students provide an accommodation letter from USC's Office of Student Accessibility Services (OSAS) or a letter from IYA Student Services detailing visa or travel restrictions, attendance and active participation is expected in the classroom. Any student with such accommodations should submit their accommodation document to the instructor as soon as possible to discuss appropriate accommodations. Either classroom recordings or live remote access to the class via Zoom will be provided.

Students who are experiencing illness should not attend class in person. Please inform the instructor in advance of any class sessions that you can't attend for medical reasons, and accommodations will be arranged to view recorded lectures and submit alternatives to any missed class participation. Students will not be penalized for not attending class in person under these circumstances.

In the event that you find yourself experiencing COVID-19 related symptoms, in keeping with university recommendations, you should Stay home! This is the best way to prevent spreading COVID-19 as supported by scientific evidence; Please do not come to an in-person class if you are feeling ill, particularly if you are experiencing symptoms of COVID-19.

Iovine and Young Hall Cleanout
The Academy is unable to store student projects and materials beyond the end of the semester. Students must remove all projects and personal materials from the Creators Studio, lockers/locker room, and other classrooms by the end of each semester. **All projects and materials left in Iovine and Young Hall will be discarded two days after final exams end. No exceptions**.

Statement on Academic Conduct and Support Systems

Academic Conduct
Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on Research and Scholarship Misconduct.

Students and Disability Accommodations
USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a

student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services
(RSVP) - (213) 740-9355(WELL), press "0" after hours - 24/7 on call
Studenthealth.usc.edu/sexual-assault
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX) - (213) 740-5086
eeotix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS) - (213) 740-0776
osas.usc.edu
OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention - (213) 821-4710

campussupport.usc.edu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity, Equity and Inclusion - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 - 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 - 24/7 on call

dps.usc.edu

Non-emergency assistance or information.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

ombuds.usc.edu

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

Occupational Therapy Faculty Practice - (323) 442-3340 or otfp@med.usc.edu

chan.usc.edu/otfp

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.