Web Front-End Development

**ATLS 4630/5630 Fall 2021**

**Class:**

TR 2:20-4:10pm

ATLS 104

**Instructor:**

Aileen Pierce (she/her)

[apierce@colorado.edu](mailto:apierce@colorado.edu)

**Office Hours:**

ATLS 235C

Tues/Thurs 11:00-12:30 or by appt

# Course Description

The Web has evolved. What was once comprised of static documents, at its inception in 1990, is now a platform for interactive applications that run on a myriad of platforms and devices and can asynchronously access data from numerous rich data stores. Reflecting this evolution, development tools, libraries, and frameworks have likewise advanced to provide web designers and developers the ability to create a new generation of immersive experiences for web users.

In Web Front-End Development, students will explore the web technologies and concepts required to build modern interactive web applications. Students will gain mastery in designing and developing immersive web experiences. Classes will feature a combination of lectures, demonstrations, guest speakers and open lab sessions. Selected research, tutorials, and related readings will contribute to class discussions and projects.

**Objectives**

At the end of this course, students will have the knowledge and experience needed to create modern immersive web applications. Students will gain these skills by meeting the following objectives:

* Understanding modern web concepts and architecture
* Mastery of the web platform and technologies
* Proficiency in web programming
* Ability to create interactive web applications

# Pre-requisites

ATLS-2200 Web and either ATLS-1300 Code/Computational Foundations 1, CSCI-1300 Computer Science 1, or an equivalent course are required prerequisites.

Knowledge of Web technologies – HTML, CSS, and JavaScript, along with basic programming concepts is necessary for this course. For students that have not taken the courses listed above, please come speak with me.

**Required Hardware/Software**

You will need a reliable laptop computer for this class or I can check one out for you to borrow during class. For work outside of class you can use the computers in the CTD commons, ATLS 235, or any other campus computer lab.

The computer lab in ATLS 235 will have 8 computers for in-person use and 1 computer for remote access.

* Remote access will be available through Splashtop following these [instructions](https://docs.google.com/document/d/1-nQRjxnXcNNWIbJSoVmTPJDR1nFdA33BTqxafc4utrc/edit) <https://oit.colorado.edu/services/learning-spaces-technology/computing-labs/remote-access>
* Only 1 person can be logged into a remote computer at a time, same as in person
* Please LOGOUT of the computer when you are done, don’t just exit Splashtop. Otherwise the computer won’t be made available for others. Lab computers will automatically log users off after 15 minutes of inactivity.

You will need an editor of your choice to author web pages. You can use a basic text editor such as TextEdit, TextWrangler, or Notepad (NOT a word processor), or a Web editor such as Sublime Text, Brackets, Coda, Atom, Visual Studio Code, or any other that is not a WYSIWYG editor (no Dreamweaver).

You will need FTP software. CU provides Fetch for Mac <https://oit.colorado.edu/software-hardware/site-licenses/fetch>, recommends PuTTY for Windows <http://www.putty.org/>, or Cyberduck for either platform <https://cyberduck.io/>.

You might want to purchase an Adobe Creative Cloud student account to use Photoshop or XD but these are not required. Adobe CC is now available for $95/year by purchasing through the bookstore <https://www.cubookstore.com/p-101756-adobe-creative-cloud-for-students-boulder-campus-only.aspx>.

We will be using the ATLAS creative.colorado.edu server to host our web sites. Detailed instructions for setup and connecting are available at <http://tam.colorado.edu/itresources.html>. You are given 10GB of server space, but you still need to backup your work. Lost or corrupted work is not an acceptable excuse for late work.

**Class Resources**

All class information is available on Canvas at <https://canvas.colorado.edu/courses/75753>. This includes the class schedule, assignments, examples and resources. Notes and other documents will be posted to Github <https://github.com/aileenjp/Fall21_WebFrontEndDev>. It is your responsibility to check the site regularly to keep up with the class and complete all assignments.

We will be using Slack, a communication and collaboration tool that is used throughout the high-tech industry, for communication in the class. Please accept the Slack invitation to the workspace [webfrontenddevfall21.slack.com](https://webfrontenddevfall21.slack.com/)

as that is where ALL class communication will take place.

**Topical Outline**

We will be exploring many areas that are integral to creating modern interactive web applications. These include, but are not limited to:

* Advanced HTML5 and CSS3
* User interface design methods
* Advanced JavaScript
* Mobile interaction design principles
* Document Object Model
* Web development libraries
* APIS and JSON
* Firebase
* Web development frameworks

**Workload**

This course is very technical and challenging and requires a great deal of time and commitment. Students should plan on spending 2-3 hours of outside class time for every hour in class. For this class, that translates to 8-12 hours per week of work outside of class. I welcome any students that are concerned about the time commitment or find themselves struggling to please talk to me personally.

**Attendance**

This is a fast-paced course with new topics covered every class and each new concept building on top of previous ones.  Attendance and class participation are important components of the course. You are encouraged to ask relevant questions, share your thoughts, and work with fellow students. You are expected to spend all class time working on class-related projects. Class time should not be used for any other classes or activities.

You are responsible for all material and announcements made in class. Do not expect me to catch you up for classes you’ve missed -- that’s your responsibility. Critique days are required; an absence that day will impact your grade for that project.

In extreme situations such as major illnesses, death in the family (or close friends), religious observances (see below), or school related absences, please talk or email [me](mailto:aileen.pierce@colorado.edu) **before** your absence.

**Grading**

Grades will be posted on Canvas at<https://canvas.colorado.edu/courses/75753>.

Grading in this course is based on the following components:

* Portal 5%
* Projects 40%
* Quizzes 20%

### Labs 35%

**Grading Criteria**

The grading standard used in ATLAS courses is as follows:

A: excellent work – far beyond minimal requirements  
B: above average work – went beyond minimal requirements  
C: average/competent work – met minimal requirements  
D: below average work – did not meet minimal requirements  
F: unsatisfactory work

**Grading Rubric**

Labs are graded based on their completeness (meets the assignment’s requirements) and technical proficiency (works correctly).

Projects are graded based on meeting their minimum viable product goals, user interaction and design, and technical execution.

Note: I do not give out A’s easily. If you turn in all your work on time (and if it is satisfactorily completed), and if you attend class and participate, you are ensured a C. A’s and B’s are reserved for students who excel beyond average and competent work. I take your grades very seriously and will do the best that I can to give you a fair and accurate grade. I know many students believe they deserve an A for the course if they do the minimally accepted work, but I don’t.

**Late work**

All assignments are due on your portal at the start of class on their due date. Please make sure your assignments are clearly labeled so they are easy for me to identify. Late assignments will be penalized 10% per 24-hour period that it’s late.

In case of an emergency, students must notify [me](mailto:aileen.pierce@colorado.edu) if you will miss an assignment deadline **before** the due date to discuss special arrangements.

**Computing Devices Policy**

Laptops and mobile computing devices can be a great asset to learning, but they can also be a source of distraction and actually impair the learning environment. Within ATLAS courses, laptops and mobile computing devices should only be used for class related activities. Students should not email, text, message, check social media, play games, surf the web, or work on assignments or projects for other courses during class. If you are using your own computer please disable and sign out of all messaging apps during class. Additionally, the use of cell phones or other devices is prohibited during class. If you are found to be engaging in these activities during course time faculty reserve the right to ask you to leave the classroom. If you have an emergency situation that requires access to your cell phone please come talk to me before class starts.

**Code Plagiarism**

I encourage students to work together on assignments, but I expect the work turned in to be each student’s own. So work together, talk, brainstorm, trouble shoot, but make sure that the assignments you turn in are created by you. Class examples are available as a reference but should not be used as starting code or heavily copied for the work you turn in. The web is a great resource, and searching for help, answers, and inspiration is very useful, so take advantage of it. You can adapt ideas and concepts you find online to be part of your projects, but your projects must be written entirely by you, and you should be able to explain all of the code you use in a project. If your project uses code snippets found from other sources they should not exceed 20% of your project’s code and you should be able to explain how that code works. Turning in a project that doesn’t meet this guideline will result in an F. If you are using code snippets, or coding concepts, from other sources you must cite the sources in the comments section. Copying programs directly out of a book, web site, or from another person without properly citing them is considered plagiarism and will be dealt with in accordance with the CU Honor Code (see below). Please check with me if you are unclear on the line between adaptation and plagiarism. Also, reusing projects from another class or commercial work is not acceptable for projects in this course unless you get previous approval from me.

**Intellectual Honesty**

All work is assumed to be your own and produced exclusively for this course. Work done for one course, even if revised, is not to be submitted in another without the instructor's prior approval. Borrowing of ideas or language from other sources (including published material, other student papers, the Internet or other electronic resources, etc.) must be carefully documented. Cases of suspected plagiarism will be referred to the University, and the student if convicted will receive a grade of F in the course in addition to sanctions assigned by the University. Carelessness in documenting sources, even if not technically plagiarism, will be penalized as I deem appropriate. If you are uncertain about how or whether to document sources, please consult me.

**Policies**

Preferred Student Names and Pronouns

CU Boulder recognizes that students' legal information doesn't always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructors' class rosters. In the absence of such updates, the name that appears on the class roster is the student's legal name.

Accommodation for Disabilities

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the [Disability Services website](http://www.colorado.edu/disabilityservices/students). Contact Disability Services at 303-492-8671 or [dsinfo@colorado.edu](mailto:dsinfo@colorado.edu) for further assistance. If you have a temporary medical condition or injury, see [Temporary Medical Conditions](http://www.colorado.edu/disabilityservices/students/temporary-medical-conditions) on the Disability Services website.

Classroom Behavior

Both students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote or online. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. For more information, see the policies on [classroom behavior](http://www.colorado.edu/policies/student-classroom-and-course-related-behavior) and the [Student Conduct & Conflict Resolution policies](https://www.colorado.edu/sccr/student-conduct).

Honor Code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code ([honor@colorado.edu](mailto:honor@colorado.edu)); 303-492-5550). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found at the [Honor Code Office website](https://www.colorado.edu/osccr/honor-code).

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation

The University of Colorado Boulder (CU Boulder) is committed to fostering an inclusive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, or protected-class discrimination or harassment by or against members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or email [cureport@colorado.edu](mailto:cureport@colorado.edu). Information about OIEC, university policies, [reporting options](https://www.colorado.edu/oiec/reporting-resolutions/making-report), and the campus resources can be found on the [OIEC website](http://www.colorado.edu/institutionalequity/).

Please know that faculty and graduate instructors have a responsibility to inform OIEC when made aware of incidents of sexual misconduct, dating and domestic violence, stalking, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about their rights, support resources, and reporting options.

Religious Observances

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please contact me **before** class regarding any absences or conflicts due to religious observances.

See the [campus policy regarding religious observances](http://www.colorado.edu/policies/observance-religious-holidays-and-absences-classes-andor-exams) for full details.

Requirements for COVID-19

As a matter of public health and safety due to the pandemic, all members of the CU Boulder community and all visitors to campus must follow university, department and building requirements and all public health orders in place to reduce the risk of spreading infectious disease. Students who fail to adhere to these requirements will be asked to leave class, and students who do not leave class when asked or who refuse to comply with these requirements will be referred to [Student Conduct and Conflict Resolution](https://www.colorado.edu/sccr/). For more information, see the policy on[classroom behavior](http://www.colorado.edu/policies/student-classroom-and-course-related-behavior) and the [Student Code of Conduct](http://www.colorado.edu/osccr/). If you require accommodation because a disability prevents you from fulfilling these safety measures, please follow the steps in the “Accommodation for Disabilities” statement on this syllabus.

As of Aug. 13, 2021, CU Boulder has returned to requiring masks in classrooms and laboratories regardless of vaccination status. This requirement is a temporary precaution during the delta surge to supplement CU Boulder’s COVID-19 vaccine requirement. Exemptions include individuals who cannot medically tolerate a face covering, as well as those who are hearing-impaired or otherwise disabled or who are communicating with someone who is hearing-impaired or otherwise disabled and where the ability to see the mouth is essential to communication. If you qualify for a mask-related accommodation, please follow the steps in the “Accommodation for Disabilities” statement on this syllabus. In addition, vaccinated instructional faculty who are engaged in an indoor instructional activity and are separated by at least 6 feet from the nearest person are exempt from wearing masks if they so choose.

Students who have tested positive for COVID-19, have symptoms of COVID-19, or have had close contact with someone who has tested positive for or had symptoms of COVID-19 must stay home. In this class, if you are sick or quarantined, please email me so we can come up with a plan to handle your work in the class.

**By enrolling, and remaining enrolled in this class, you signify your awareness and understanding of the policies contained within this syllabus and your agreement to conduct yourself in accordance with these policies.**