CS 395: Frontend Web Development
Fall 2025

Contact Information

Facilitators:
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Course Description

CS 395: Frontend Web Development is a 1-credit student-initiated special topics course introducing students to core concepts, tools, and practices in frontend development. Over 12 weeks, students will explore modern frontend technologies like HTML5, CSS3, JavaScript, responsive design with Bootstrap, and component-based development using React.js.

Students will build interactive, visually engaging user interfaces and develop the ability to transform mockups into functional web applications. The course includes weekly hands-on assignments and culminates in a final group project showcasing a complete frontend interface. Emphasis is placed on clean UI/UX design, code readability, accessibility, and collaboration using GitHub and Agile practices.

Course Outcomes

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

- Design and build responsive web pages with HTML and CSS
- Implement interactive features using JavaScript and the DOM
- Apply responsive design principles with frameworks such as Bootstrap
- Develop modular, reusable components and interfaces using React.js
- Collaborate effectively in teams using Agile practices and Git workflows
- Apply best practices for performance, accessibility, and security in frontend development

Topics:
- Agile and GitHub workflow
- HTML
- CSS (including Flexbox, Grid)
- Bootstrap and Responsive Design
- JavaScript
- Databases & CRUD
- React
- Intro to UI/UX Principles

Prerequisite

Grade of C or better in CS211

Textbook

No textbook will be required. Assigned readings will be shared with the students or will be available online or through the library.

Grading Policy

Class Participation — Participating in-class discussions, in-class activities, survey's and providing constructive comments to the presenters.

Quizzes — Quizzes will be posted on Canvas, and you are required to complete them by the deadline. If you miss an examination, you cannot retake it later.

Homework — Small coding assignments. You must submit all related files by the deadline. Every week will have one homework assignment due. Only 1 day late submission is allowed for homework with a late penalty of 10% of the assignment's grade.

Final Project — A group project where the students will create and present a full-stack app. **No extension will be given for the final project.**

Class Participation	**20%**
Homework (Total: 4)	**20%**
Quiz (Total: 10)	**20%**
Final Project Presentation	**10%**
Final Project	**30%**

The class will use the following grading scale to determine your final letter grade:

A	>=90%
B	>=80%
C	>=70%
D	>=60%
F	< 60%

Semester grades will be automatically rounded up to the nearest whole number.

Honor Code

All students are expected to abide by the GMU Honor Code and the CS Department Honor Code. This policy is rigorously enforced. All class-related assignments are considered individual efforts unless explicitly expressed otherwise (in writing). Review the university honor code and present any questions regarding the policies to the instructor. Cheating on any assignment will be prosecuted and result in a notification of the Honor Committee as outlined in the GMU Honor Code.

Disability Accommodations and Nondiscrimination Policy

Students with a learning disability or other condition (documented with GMU Office of Disability Services) that may impact academic performance should speak with the faculty advisor ASAP to discuss accommodations.

GMU, the CS Department, and the CS Faculty are committed to providing an educational environment free from any discrimination on the basis of race, color, religion, national origin, sex, disability, veteran status, sexual orientation, gender identity, gender expression, age, marital status, pregnancy status, or genetic information. If you feel there has been a violation of the University's policies on discrimination, please contact GMU's Office of Access, Compliance, and Community. https://oacc.gmu.edu/

Week No.	Topic	Assignment Posted	Assignment Due
1 (8/24 - 8/30)	- Introduction to Front End Web Development - Introduction to Github - Agile methodology		
2 (8/31 - 9/6)	- HTML basics - CSS basics - CSS Flexbox	- Quiz 1 (9/2)	- Quiz 1 (9/5)
3 (9/7 - 9/13)	- CSS Grid - JavaScript basics	- Homework 1 (9/9) - Quiz 2 (9/9)	- Quiz 2 (9/12)
4 (9/14 - 9/20)	- DOM traversal and manipulation - Event listeners and form handling - Introduction to JavaScript libraries	- Quiz 3 (9/16) - Final Project (9/16)	- Homework 1 (9/19) - Quiz 3 (9/19)

5 (9/21 - 9/27)	- React Basics
	  - Creating Functional React components
	  - Defining and passing in props to components
	  - Introduction to State
	  - Applying CSS styling to React components and JSX
		- Quiz 4 (9/23)
		- Homework 2 (9/23)
			- Quiz 4 (9/26)

6 (9/28 - 10/4)	- React Hooks
	  - useState
	  - useEffect
	  - Controlled forms
		- Quiz 5 (9/30)	- Quiz 5 (10/3)
			- Homework 2 (10/3)

7 (10/5 - 10/11)	- React + APIs Part1:
	  - Understanding API Documentation
	  - Static API Calls using async/await
	  - How to add and edit query parameters for API calls
	  - Parsing JSON data
		- Quiz 6 (10/7)	- Quiz 6 (10/10)

8 (10/12 - 10/18)	- React + APIs Part 2:
	  - Fetch API data
	  - How to dynamically render a group of elements
	  - How to filter data based on user input.
		- Quiz 7 (10/14)
		- Homework 3 (10/14)
			- Quiz 7 (10/17)

Week No.	Topic	Assignment Posted	Assignment Due

9 (10/19 - 10/25)	- React Router:
	  - How to use React Router to build navigation around web apps
	  - Dynamically generate a list of routes
	  - How to extract parameters from a URL
		- Quiz 8 (10/21)	- Quiz 8 (10/24)
			- Homework 3 (10/24)

10 (10/26 - 11/1)	- Introduction to Cookies
	- CRUD Operations:
	  - Introduction to cloud database services
	  - Setup and use Supabase-js or Firebase-js to manage a database
	  - How to perform API requests to change web apps according to CRUD
		- Quiz 9 (10/28)	- Quiz 9 (10/31)

11 (11/2 - 11/8)	- Introduction CSS Bootstrap and Tailwind
	- Real-world tools
	  - npm, project setup
	- Hosting:
	  - Vercel, GitHub Pages, Netlify
		- Quiz 10 (11/4)
		- Homework 4 (11/4)
			- Quiz 10 (11/7)

12 (11/9 - 11/15)	Final Project Work time		- Homework 4 (11/14) - Final Project (11/16)
13 (11/16 - 11/22)	Final Project Presentation		- Final Presentation (Different dates for each group)