



# Metropolitan College

## Computer Science Department

CS601 | Web Development Development | On Campus

**Andrew Sheehan** | [asheehan@bu.edu](mailto:asheehan@bu.edu)

Office hours by appointment.

**Class Location:** 685 - 725 Commonwealth Avenue; CAS 116;

*Please contact me before or after class if we need to meet.*

### Course Description

You will learn how to build web applications, by hand, in every week of this course. This is a hands-on programming class.

Learn essential front-end development skills, starting with foundational JavaScript techniques, such as DOM manipulation and event handling, and advancing to interactive web technologies like ES6 classes and packaging code with modules, without any use of jquery.

You will be exposed to asynchronous operations, including AJAX, the Fetch API, and Axios.

Learn to craft responsive designs using Flexbox, Bootstrap and advanced CSS selectors.

A comprehensive exploration of TypeScript and its main features will also be covered.

The course concludes with a comprehensive dive into ReactJS, covering its core architectural concepts, component-based structure and state management techniques.

The course is divided into modules that cover object-oriented design and development using hands-on laboratories focused on Javascript.

### Books

"HTML and CSS: Design and Build Websites" \* Optional

Author: Jon Duckett | ISBN-13: 978-1118008188 | <https://www.amazon.com/HTML-CSS-Design-Build-Websites/dp/1118008189>

"Responsive Web Design with HTML5 and CSS: Build future-proof responsive websites using the latest HTML5 and CSS techniques" 4th Edition \* Optional

Author: Ben Frain | ISBN-13: 978-1803242712 | [https://www.amazon.com/Responsive-Web-Design-HTML5-CSS-ebook-dp-B0B25BX7CW/dp/B0B25BX7CW/ref=dp\\_ob\\_title\\_def](https://www.amazon.com/Responsive-Web-Design-HTML5-CSS-ebook-dp-B0B25BX7CW/dp/B0B25BX7CW/ref=dp_ob_title_def)

## Courseware

All material and interactions will use BU/Blackboard. Sign on required. The link is: [onlinecampus.bu.edu](http://onlinecampus.bu.edu)

## Academic Calendar

Please know the academic calendar and the details therein: <https://www.bu.edu/reg/calendars/>

## Class Policies

- Homework will not be accepted after its due date unless the student has a very good reason that the Professor accepts.
- If you miss a quiz it cannot be rescheduled or made-up. Quizzes are random and must be completed on the day and time it is administered.
- Attendance is part of your grade. I do watch for whom shows up and participates in class. If you never show up in class and I have no record or recollection of talking with you in class or in emails, it will be taken into consideration during grading.

## Academic Conduct Code

Cheating and plagiarism will not be tolerated in any Metropolitan College course.

Caught cheating? It will result in no credit for the assignment or examination and may lead to disciplinary actions.

Your professor uses [Beyond Compare](#) to compare assignments between you and your fellow students. No two project or source files should ever be the same or 95% the same.

Please take time reviewing the Student Academic Conduct Code. It does change once in a while with updates.

[http://www.bu.edu/met/metropolitan\\_college\\_people/student/resources/conduct/code.html](http://www.bu.edu/met/metropolitan_college_people/student/resources/conduct/code.html)

This should not be understood as a discouragement for discussing the material or your particular approach to a problem with other students in the class. On the contrary, you should share your thoughts, questions and solutions. Naturally, if you choose to work in a group, you will be expected to come up with more than one and highly original solutions rather than the same mistakes.

## Grading Criteria (1000 points)

- Homework/Laboratories/Quizzes: 700 points
- Midterm and Final Examination: 100/each (200 points)
- Term Project: 100 points

## Class Schedule

Thursday's	Laboratories	Term Project Milestones
Sept-5	<ul style="list-style-type: none"> <li>The Recipe Application - Introduction to Programming - Lists, Core Elements</li> </ul>	Workstation Setup & Configuration
Sept-12	<ul style="list-style-type: none"> <li>Core Principals of HTML - Pinterest 2.0 - Using Images</li> </ul>	Term Project Concept Submitted For Review
Sept-19	<ul style="list-style-type: none"> <li>Mathmatical Formulas Master - Fundamentals of Javascript</li> </ul>	Submit Work in Progress - 20% Complete
Sept-26	<ul style="list-style-type: none"> <li>The Online Quiz Application - Cascading Stylesheets</li> </ul>	
Oct-1	<ul style="list-style-type: none"> <li>Continuation of CSS with Media Queries, Flexbox and Bootstrap</li> </ul>	
Oct-8	<ul style="list-style-type: none"> <li>The Weather Application - Using Ajax Technologies</li> </ul>	Submit Work In Progress - 40% Complete
Oct-15	<ul style="list-style-type: none"> <li>Full Website Development - Classes, Modules and Design Patterns</li> </ul>	
Oct-22	Midterm Examination	
Oct-29	<ul style="list-style-type: none"> <li>Building the Restaurant - Principals of Typescript</li> </ul>	
Nov-5	<ul style="list-style-type: none"> <li>The Todo Application - REST, Spread and Destructuring</li> </ul>	Submit Progress - 80% Complete
Nov-12	<ul style="list-style-type: none"> <li>The Dog Walker Applicaton - Introduction to Typescript</li> </ul>	
Nov-19	<ul style="list-style-type: none"> <li>The Music Repair Shoppe - Foundations of React</li> </ul>	
Nov-26	<ul style="list-style-type: none"> <li>The Event Registration App - React Compounds</li> </ul>	
Dec-3	Project Presentations and Review	
Dec-10	Final Examination	