

CSC400C (Topics) Web 2.0 Application Development  
Mark Mahoney  
JTerm 2022  
M-F 1:00 PM - 4:00 PM  
[meet.google.com/utw-yoig-zsq](https://meet.google.com/utw-yoig-zsq)  
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**Prerequisite:**

CSC1820

**Required book/resources:**

- [An Introduction to Web Development from Back to Front](#) (Mahoney)
- [Javascript Guide](#) (MDN)
- [Introduction to HTML](#) (MDN)
- [Learning to Style HTML with CSS](#) (MDN)
- [Express Web Framework](#) (MDN)
- [Getting Started with React](#) (React)

**Grading Criteria:**

Programming Assignments 100%

**Course Description:**

There has been a fundamental shift in both the approach and the technologies used to create dynamic, interactive web applications in the last few years. This course examines recent paradigm shifts along with some of the tools and technologies that are prevalent in modern web application development. We will explore both active client and active server technologies used to create small to medium web applications as well as large web applications like those offered by industry leaders like Facebook, Google, Microsoft, and Amazon.

Web 2.0 refers to web applications that gather and send their data asynchronously without requiring a complete page reload for every interaction. Web 2.0 applications feel like desktop apps. One problem with the 2.0 paradigm is that there are a mix of technologies in order to create a sophisticated application. In any one project you may use a combination of HTML, CSS, javascript, JSON, XML, Node/Express, React, etc.- and this is not even including some sort of database technology. However confusing and complicated, the 2.0 world is where the future of computing lies.

**Objectives:**

We will cover the following topics:

- \* HTML5
- \* Cascading Style Sheets (CSS)
- \* Javascript
- \* Front end frameworks (Bootstrap, React)
- \* Back end frameworks (Node/Express)
- \* Databases (SQL and NoSQL)

**Client Side:**

- \* Become familiar with the presentation language of the web, HTML.
- \* Be able to use Cascading Style Sheets (CSS) to separate presentation details from content.
- \* Become familiar with the client side programming language Javascript.
- \* Use a mobile first approach to developing pages.

\* Interact with outside web services dynamically without requiring a page load.

Server Side:

\* Create web services for consumption on the client side.

\* Use a backend database that stores information related to our users.

\* Become familiar with an end-to-end web application framework that abstracts database details away from the developers.

Because this is both an upper level CS course and a JTerm course we are going to be moving fast. If you think that this is going to be a problem you should consider whether dropping the course is the best thing for you. You should plan on having work to complete outside of class every single day. You must be in class every single day (barring sickness or some other extraordinary circumstance). I will be taking attendance and absences will negatively impact your grade.

### **Required Software:**

All of the software that we will use in class is free. You can install the software on a machine in lab or you can install it on your machine (this is ideal).

Since we will be creating web applications, web browsers are going to be an important tool. MS Internet Explorer is a notoriously difficult web browser, it simply does not behave like almost all other browsers. Having a browser like Firefox or Chrome will greatly aid your success in class. I will be using Firefox.

### **Class/General:**

We have a lot of information to cover. I cannot possibly show you everything about each language and technology that is used in modern web development. Your ability to find information will be critical to your success in this class. I will be showing a great deal of code (I will try and post my examples so that you can see them) but remember that there is a wealth of information online and I will expect you to be able to find it.

### **Programming Assignments:**

All assignments must be handed in on the due date. I do not accept late work. Be sure to hand in whatever work you have completed before the due date. Partial credit is better than no credit.

Read the requirements for each assignment carefully. Ask questions on any portion that is not clear. A demo will be required for some assignments.

Students are encouraged to help each other while learning the material. The exchange of ideas enhances the learning process. However, the final product must be your own. Plagiarism of assignments and cheating on exams are not permitted. Any student caught doing so will automatically receive a failing grade. You can find the academic honesty guidelines here (<https://www.carthage.edu/community-code/academic-concerns/academic-honesty-guidelines/>) and the consequences for violating them here (<https://www.carthage.edu/community-code/academic-concerns/penalties/>).

Carthage College strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers due to your disability (including mental health, learning disorders and chronic medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, you also need to register with Diane Schowalter in Learning Accessibility Services (dschowalter1@carthage.edu).