CS152a: Web App Development

Contact Details
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Meeting Times

Classes
MTWT 11:15-1:15

Office Hours
MTWR 1:15-2:00

Course Description

Learning Goals:
After successfully completing this course you will be able to design, develop, debug, and deploy web applications using the Express/Mongoose framework.

There is a substantial set of additional skills you will need to develop to succeed in this course. This includes learning several languages: HTML, CSS, EJS, Bootstrap, Mongo, Javascript. You will also need to master several software development tools including Atom, Github, Zenhub, the Javascript Console, and new software development methodologies such as Scrum.

After completing this course you will be able to work effectively individually, or in a team, to create web apps and you will have developed some interesting apps for your ePortfolio.

Teaching/learning strategies
The course will require you to read the textbook and online software manuals as well as to use google and other search tools such as StackOverflow to find answers to questions and fixes for bugs. The class will be formed into teams and each team will be responsible for building a suite of web apps using NodeJS/Express/Mongoose over the five week course. Daily lessons will mix lectures, coding challenges with your team, and reflections.
**Prerequisites**

The only prerequisite is an ability to program in some Object Oriented Languages such as Python, Java, Javascript, or Ruby, e.g. completing CS10a or CS12b will adequately prepare you for this course.

**Credit Hours:**

This course gives you 4 credit hours and will require 8 hours/week of class time and 24 hours of time outside of class working on your projects and preparing for classes.

**Course Requirements**

**Academic Integrity**

Every member of the University community is expected to maintain the highest standards of academic integrity. A student shall not submit work that is falsified or is not the result of the student’s own effort. Infringement of academic honesty by a student subjects that student to serious penalties, which may include failure on the assignment, failure in the course, suspension from the University or other sanctions (see section 20 of R&R). Please consult Brandeis University Rights and Responsibilities for all policies and procedures related to academic integrity. Students may be required to submit work to TurnItIn.com software to verify originality. A student who is in doubt regarding standards of academic honesty as they apply to a specific course or assignment should consult the faculty member responsible for that course or assignment before submitting the work. Allegations of alleged academic dishonesty will be forwarded to the Department of Student Rights and Community Standards. Citation and research assistance can be found at Brandeis Library Guides - Citing Sources (https://guides.library.brandeis.edu/c.php?g=301723).

**Assignments**

This course will have five creative assignments, one per week, in which you demonstrate your mastery of the skills and concepts learned in the previous weeks. Each creative assignment will build on the previous weeks assignment, and in the end you will have an app that you have created by yourself which demonstrates your mastery of many of the skills and concepts we’ve covered in this course. More importantly, you will have discovered that you have a sufficiently solid understanding of the core concepts that you can easily expand your repertoire by self-study!

**Exams/Quizzes**

Each Thursday we will release a quiz which you need to complete within 24 hours. The quiz will cover the concepts we have covered up to that point in the semester. Each question will be labeled with a core concept and once you have demonstrated mastery of a core concept, you can ignore future questions involving that concept.
Participation
Class participation is critical for success in this course. You will be working with your team in class and the class time will provide you the opportunity to ask questions and discuss challenges.

Portfolio
The main work product for this course will be an individual final project which will be part of your college ePortfolio and can help you when searching for jobs or internships.

Evaluation
You will receive a weekly, individual, grade for your participation in the course and your work on your term project. We will use progressive grading so a higher grade in a later week will replace lower grades from earlier weeks.

Essential Resources

Accommodations
Brandeis seeks to welcome and include all students. If you are a student who needs accommodations as outlined in an accommodations letter, I want to support you. In order to provide test accommodations, I need the letter more than 48 hours in advance. I want to provide your accommodations, but cannot do so retroactively. If you have questions about documenting a disability or requesting accommodations, please contact Student Accessibility Support (SAS https://www.brandeis.edu/accessibility/) at 781.736.3470 or access@brandeis.edu.

Course Materials
We will learn app development using online resources. Our main reference will be this book (by a Brandeis alumnus)

“Get Programming with NodeJS” by Jon Wexler
**Apps or Tools/Equipment**
You will need to download and install a lot of software, mainly using npm. We will spend the first day in class downloading software and setting it up.

**LATTE**
LATTE is the Brandeis learning management system: [http://latte.brandeis.edu](http://latte.brandeis.edu). Login using your UNET ID and password.

**Library**
The Brandeis Library collections and staff offer resources and services to support Brandeis students, faculty and staff. These include workshops, consultations, collaboration, materials and instruction on emerging trends in technologies such as machine learning, emerging trends in research such as data visualization, and emerging trends in scholarship such as open access. Librarians at the Circulation Desk, Research Help Desk, Archives & Special Collections, Sound & Image Media Studios, MakerLab, AutomationLab, and Digital Scholarship Lab are available to help you. [https://www.brandeis.edu/library/about/index.html](https://www.brandeis.edu/library/about/index.html)

**Privacy**
This class requires the use of tools that may disclose your coursework and identity to parties outside the class. To protect your privacy, you may choose to use a pseudonym/alias rather than your name in submitting such work. You must share the pseudonym/alias with me and any teaching assistants as needed. Alternatively, with prior consultation, you may submit such work directly to me.

**Student Support**
Brandeis University is committed to supporting all our students so they can thrive. The following resources are available to help with the many academic and non-academic factors that contribute to student success (finances, health, food supply, housing, mental health counseling, academic advising, physical and social activities, etc.). Please explore the many links on this Support at Brandeis page ([https://www.brandeis.edu/support/undergraduate-students/browse.html](https://www.brandeis.edu/support/undergraduate-students/browse.html)) to find out more about the resources that Brandeis provides to help you and your classmates to achieve success.
Course Plan

Week 1: Introduction to Javascript, NodeJS, and Express
We will give an introduction to Javascript, NodeJS, and Express. We will also learn the core concepts behind HTML, CSS, Bootstrap, Javascript, React, Git and Scrum. Our main goal will be to get familiar with javascript and the React Native core concepts, and to have you come up with an idea for your term project!

Week 2: Interactivity and CRUD
We learn how to incorporate interactivity in an app using forms and database operations

Week 3: Authentication
We learn how to authenticate users and use profile information in the app.

Week 4: Deployment
We learn how to deploy apps to Heroku and other servers.

Week 5: User Experience Testing and Final Project Showcase
We apply all we have learned to complete the term projects and we have a final project showcase at the end.