Web Programming: CS-546-A
Schaefer School of Engineering and Science
Fall 2022

Meeting Times: Mondays 6:30PM – 9:00PM
Classroom Location: Kidde 228
Instructor: Patrick Hill
Contact Info: Patrick.Hill@stevens.edu
Office: Gateway South Room 243
Office Hours: Wednesdays 1pm-4pm
Prerequisite(s):   CS-442 or CS-561 and CS-146 or SOC-611

COURSE DESCRIPTION

This course will provide students with a first strong approach of internet programming. It will give the basic knowledge on how the Internet works and how to create advanced web sites by the use of script languages, after learning the basics of HTML. The course will teach the students how to create a complex global site through the creation of individual working modules, giving them the skills required in any business such as proper teamwork and coordination between groups.

LEARNING OBJECTIVES
- Programming Environment - Install and configure a modern web programming environment that includes a web server, a modern backend programming language, and a modern database.
- Server-side: Write programs in the chosen programming language that use most of the features of the language and its standard libraries.
- Database: Use a modern database in order to create database-driven applications.
- Client-Side: Create HTML pages and use basic JavaScript code to enhance the pages.
- Web accessibility: Evaluate the accessibility level of web pages and create web pages designed to work for all people, regardless of their hardware, culture, location, physical or mental ability.
- Advanced Client-side: Use client-side techniques (such as AJAX) and frameworks that allow for the creation of dynamic web pages.
- Security: Identify major vulnerabilities in web development and use defensive tactics to reduce their likelihood.
- Project: Create a complete market-ready database-driven web application in a team that goes through the entire software life cycle, with technical and non-technical presentations.
  After successful completion of this course, students will be able to…
- Compose a semantically valid web page styled with CSS.
- Use JavaScript to make web pages interactive and make asynchronous requests.
- Work in a team to create a web application with complex backend and frontend components.

FORMAT AND STRUCTURE

Each lecture will be composed of:
- Review of previous week's material / open QA for previous material.
- Introduction of concepts for the week.
- Detailed explanation of each concept.
- Preparation information to prepare for following week's course.

COURSE MATERIALS

Textbook(s): No textbook is required for this class.

Other Required Readings: Online references will be provided from authoritative sources such as the MDN, MSDN, and the Node.js Manual. There will be reading material for each topic and you are highly advised to go through the reading material.

COURSE REQUIREMENTS

Labs: Labs should be handed in on time.

Late assignments (labs AND quizzes) will receive a <u>15-point penalty PER DAY that it is late</u>. There will be a 5-minute grace period. That means if the assignment is due at 11:59PM and you submit it at 12:04:01AM then you will get 15 points deducted for being a day late and then 15 points each additional day that the assignment is late. NO EXCEPTIONS UNLESS A DOCTOR'S NOTE IS PROVIDED OR YOU ARE OFFICIALLY EXCUSED BY THE COLLEGE.

All assignments are required to be submitted to receive a passing grade in the class.

Project(s) For the final project, students will create a web application with multiple backend and frontend components working together, as well as present all aspects of the product to the class. Earlier in the term, students will submit a proposal of their application, a database proposal, and a presentation before the submission of the final project demonstrating their product to a non-technical user.

Any final project component that is late will receive a <u>25-point penalty PER DAY that it is late</u>. There will be a 5-minute grace period. That means if the assignment is due at 11:59PM and you submit it at 12:04:01AM then you will get 25 points deducted for being a day late and then 25 points each additional day that the assignment is late. NO EXCEPTIONS UNLESS A DOCTOR'S NOTE IS PROVIDED OR YOU ARE OFFICIALLY EXCUSED BY THE COLLEGE.

Plagiarism

- **I have a ZERO tolerance policy when it comes to sharing code with each other and cheating. Lab assignments are to be done INDIVIDUALLY and not with any other students.**

- [Moss](#) is run against every student's lab submission to detect plagiarism in code, and it is VERY VERY good at what it does. Moss is not only run against all current student submissions but also against ALL student submissions from previous semesters if a similar lab was used in previous semesters.
- **If Moss detects plagiarism between your work and another student's or previous student's, you will receive an automatic 0 for that lab the first time you are caught. If you are caught cheating a second time, your grade for that assignment will be -10% and if you get caught a third time, you will fail the course with a grade of F.**
- **You CANNOT use any code from a previous student found online on GitHub, any other online code repository etc..**
- **DO NOT POST YOUR LAB ASSIGNMENTS ON GITHUB! IF YOU DO, YOU WILL BE HARSHLY PENALIZED. Not to mention if another student finds it and uses the code, and we run moss, it appears like you both cheated!**

GRADING PROCEDURES

Grades will be based on:

Labs	(30 %)
In-class Exercises/Quizzes	(10 %)
Project Proposal	(5 %)
Project Pitch	(5 %)
Database Proposal	(5 %)
Final Project Presentation	(5 %)
Final Project Result & Code	(40 %)

Final Project Grade: This 40% will be an average based on the average of two components. The student's final project grade will be averaged between the individual contribution of the student and the project's overall grade. **The individual portion of the grade will be determined by GitHub contributions (I will be monitoring them, so it's VERY important you contribute to the project via GitHub)** as well as a peer feedback survey from your fellow group members. So for example, Say the group's project as a whole grade was 95% and you received an 80% on the individual contribution portion, then your final project grade would be 87.5%

GRADING SCALE

A	100%	to	94%
A-	< 94%	to	90%
B+	< 90%	to	87%
B	< 87%	to	84%
B-	< 84%	to	80%
C+	< 80%	to	77%
C	< 77%	to	70%
F	< 70%	to	0%

ACADEMIC INTEGRITY

Undergraduate Honor System

Enrollment into the undergraduate class of Stevens Institute of Technology signifies a student's commitment to the Honor System. Accordingly, the provisions of the Stevens Honor System apply to all undergraduate students in coursework and Honor Board proceedings. It is the responsibility of each student to become acquainted with and to uphold the ideals set forth in the [Honor System Constitution](#).

More information about the Honor System including the constitution, bylaws, investigative procedures, and the penalty matrix can be found online at http://web.stevens.edu/honor/

The following pledge shall be written in full and signed by every student on all submitted work (including, but not limited to, homework, projects, lab reports, code, quizzes and exams) that is assigned by the course instructor. No work shall be graded unless the pledge is written in full and signed.

"*I pledge my honor that I have abided by the Stevens Honor System.*"

Reporting Honor System Violations
Students who believe a violation of the Honor System has been committed should report it within ten business days of the suspected violation. Students have the option to remain anonymous and can report violations online at www.stevens.edu/honor.

Graduate Student Code of Academic Integrity

All Stevens graduate students promise to be fully truthful and avoid dishonesty, fraud, misrepresentation, and deceit of any type in relation to their academic work. A student's submission of work for academic credit indicates that the work is the student's own. All outside assistance must be acknowledged. Any student who violates this code or who knowingly assists another student in violating this code shall be subject to discipline.

All graduate students are bound to the Graduate Student Code of Academic Integrity by enrollment in graduate coursework at Stevens. It is the responsibility of each graduate student to understand and adhere to the Graduate Student Code of Academic Integrity. More information including types of violations, the process for handling perceived violations, and types of sanctions can be found at www.stevens.edu/provost/graduate-academics.

Special Provisions for Undergraduate Students in 500-level Courses

The general provisions of the Stevens Honor System do not apply fully to graduate courses, 500 level or otherwise. Any student who wishes to report an undergraduate for a violation in a 500-level course shall submit the report to the Honor Board following the protocol for undergraduate courses, and an investigation will be conducted following the same process for an appeal on false accusation described in Section 8.04 of the Bylaws of the Honor System. Any student who wishes to report a graduate student may submit the report to the Dean of Graduate Academics or to the Honor Board, who will refer the report to the Dean. The Honor Board Chairman will give the Dean of Graduate Academics weekly updates on the progress of any casework relating to 500-level courses. For more information about the scope, penalties, and procedures pertaining to undergraduate students in 500-level courses, see Section 9 of the Bylaws of the Honor System document, located on the Honor Board website.

LEARNING ACCOMODATIONS
Stevens Institute of Technology is dedicated to providing appropriate accommodations to students with documented disabilities. Student Counseling and Disability Services works with undergraduate and graduate students with learning disabilities, attention deficit-hyperactivity disorders, physical disabilities, sensory impairments, and psychiatric disorders in order to help students achieve their academic and personal potential. They facilitate equal access to the educational programs and opportunities offered at Stevens and coordinate reasonable accommodations for eligible students. These services are designed to encourage independence and self-advocacy with support from SCDS staff. The SCDS staff will facilitate the provision of accommodations on a case-by-case basis. These academic accommodations are provided at no cost to the student.

Disability Services Confidentiality Policy

Student Disability Files are kept separate from academic files and are stored in a secure location within the office of Student Counseling, Psychological & Disability Services. The Family Educational Rights Privacy Act (FERPA, 20 U.S.C. 1232g; 34CFR, Part 99) regulates disclosure of disability documentation and records maintained by Stevens Disability Services. According to this act, prior written consent by the student is required before our Disability Services office may release disability documentation or records to anyone. An exception is made in unusual circumstances, such as the case of health and safety emergencies.

For more information about Disability Services and the process to receive accommodations, visit https://www.stevens.edu/sit/counseling/disability-services. If you have any questions please contact:
> Lauren Poleyeff, Psy.M., LCSW - Disability Services Coordinator and Staff Clinician in Student Counseling and Disability Services at Stevens Institute of Technology at lpoleyef@stevens.edu or by phone (201) 216-8728.

INCLUSIVITY STATEMENT

Stevens Institute of Technology believes that diversity and inclusiveness are essential to excellence in education and innovation. Our community represents a rich variety of backgrounds, experiences, demographics and perspectives and Stevens is committed to fostering a learning environment where every individual is respected and engaged. To facilitate a dynamic and inclusive educational experience, we ask all members of the community to:
- be open to the perspectives of others
- appreciate the uniqueness their colleagues
- take advantage of the opportunity to learn from each other
- exchange experiences, values and beliefs
- communicate in a respectful manner
- be aware of individuals who are marginalized and involve them
- keep confidential discussions private

TENTATIVE COURSE SCHEDULE
- This is a tentative schedule of the order of topics and how they will be addressed; the order of topics may vary based on feedback from the students.
- Major changes to this schedule will be announced over Canvas.
- All assignments will be posted to Canvas.
- Suggested readings to prepare for the following week will be posted at the end of each week's lecture slide.

Week	Topic(s)	Assignment
1	Course Introduction Setting up Node.js Intro to JavaScript syntax	Lab #1 due Lecture 2
2	Modules and NPM Creating a Simple Node Application	Lab #2 due Lecture 3
3	Asynchronous Code Promises Reading and Writing to Files	Lab #3 due Lecture 4

4	Introduction to MongoDB Interacting with MongoDB in Node.js	Lab #4 due Lecture 5
5	Introduction to Git Programming in a Group Environment Basic HTML and CSS	Project Groups due Lecture 6 Lab #5 due Lecture 6
6	Fundamentals of Web Development Running a Node.js server Node.js as an API (GET)	Project Proposals due Lecture 7 Lab #6 due Lecture 7
7	Intermediate MongoDB Node.js as an API (PUT POST DELETE) Server-Side Error Checking	Project DB Proposal due Lecture 8 Lab #7 due Lecture 8
8	Templating with Node.js HTML Forms	Lab #8 due Lecture 9
9	Introduction to Frontend JavaScript Client-Side Form Validation	Lab #9 due Lecture 10
10	Middleware Cookies and Authentication	Lab #10 due Lecture 11 Project Update 1 due Lecture 11
11	Introduction to AJAX via jQuery Basic Security	Lab #11 due Lecture 12
12	Introduction to jQuery Browser based JS APIs Fundamentals of Web Accessibility	
13	CSS Media Queries Bootstrap	
14	Final Project In-Class Review	Final Project Presentation and Final Project Code due the last day of classes.