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### Internet Programming

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*CUNY City College*

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# CSC 31800 – Internet Programming

[Department of Computer Science](#), City College of New York  
Summer, 2023

**Instructor:** Kwame Agyemang Baffour

**Lecture:** Monday, Wednesday 3:00–5:30 p.m (in-person)

**Office Hours:** TBD

**Grading:** Letter Grade

## Course Description

The design and implementation of websites from a Human-Computer Interaction point of view. Covers client-side technologies such as HTML, CSS and JavaScript and server-side technologies including Node.js and relational databases. Responsiveness, inclusion and accessibility by persons with mobility and vision impairment is necessary and must be addressed in the final project.

## Course Aims and Outcomes

### Aims

This course will equip students with knowledge on HTML, CSS, Bootstrap, JavaScript, and Node and be confident enough to build responsive and functional websites and applications.

### Specific Learning Outcomes

Students will have a solid understanding of the foundations of developing web applications by the end of this course. Building solid foundations in HTML, CSS, and Vanilla JavaScript is prioritized. Client-side JavaScript frameworks are introduced, building on this basis; students will learn the principles, syntax, and advantages of frameworks like React and Bootstrap. Students will be able to create a client-side web application using third-party data APIs by the end of the course and will be able to explain the advantages of various architectures and design patterns.

### Note

JavaScript, React and other technologies will be used extensively in this course. This is a computer science course, not a graphic design course with a substantial component of server and client side programming. Numerous technologies, including HTML, CSS, Javascript, React, JSON, Node, and numerous APIs, are expected of you. There just isn't enough time to provide thorough instructions for every item you might require. The course will function more as a tour with recommendations for further reading. You'll be required to conduct a sizable independent study. Although difficult, these abilities are highly sought after in the field.

## **Assumptions**

There are no prerequisites for this course, although it is assumed that students have a solid understanding of fundamental programming concepts and can code in at least one language. Students will be able to quickly pick up new programming languages when they are presented in this course thanks to their prior knowledge.

There is no prerequisite for this course, and it is assumed that students have no prior understanding of web programming. Although it is not necessary, it may be beneficial to take a database course before this one.

Remember that this is not a course in web design. Although presentations will be covered and general design tools will be explored, application programming using the web as a platform will be the focus of the discussion.

## **Course Requirements**

### **Class attendance and participation policy**

Attendance is not a graded component of this class, though students are encouraged to attend all lectures to fully benefit from the delivered lectures and peer discussion.

### **Course readings**

This course is listed as Zero Textbook Cost (ZTC). This class does not have any required texts, as all course material can be obtained through various free online resources. However, various readings will be recommended during the course of this class and will likely be helpful to student learning.

### **Grades**

This course will be graded as follows:

Project - 50%

Homework -30%

Project Presentation -20%

## Homework

All homework should be uploaded on Github. The homework should also be hosted on any free web hosting site and the links put in the GitHub repository. Send the instructor a link to your Github.

## Project

Your project should aim to solve a real life problem or provide some significant value. That doesn't always imply it needs to be a project focused on business; it may be a game. It simply means that you must develop a web application or service that solves a problem that exists in the outside world. For inspiration, take a look around your environment, school, etc and consider any problems that can be solved or any processes that can be re-engineered utilizing knowledge from this course.

Games or projects with a social purpose could be included.

You will take part in a group project to create a working responsive website (maximum 3 students per group). Your individual participation in this project will be measured by the number and quality of the code you write as measured by the version control system. If the issue tracker and version control system do not make it apparent what you provided, it will be presumed that you did not participate in the activity.

Each group will also be assessed at the end of the semester through a project presentation.

Each group should create a new repository for the project and name it as the name of their project. The instructor should be sent an invite to view the project repository.

## References

The following are some of the references for the course:

- Mozilla Developer Network
- FreeCodeCamp (Responsive Web Design, Javascript and DS, JS FrontEnd Libraries (React))
- HTML & CSS from Shayhowe
- State of Javascript
- Will Stern's LearnCode.academy great overview of the web dev field Web Development 2018 - The Must-Know Tech
- Brad Traversy's Traversy Media has another great reference to what we are going to go through Web Development In 2019 - A Practical Guide
- The New Boston Youtube Channel
- Scrimba
- Flexbox Froggy

- CS 50's Web Programming with Python and JavaScript
- Girl Develop it San Francisco -Teaching materials
- W3schools

**Software Required** The official programming languages for the course are Javascript and PHP.

You will need:

- A text editor Visual Studio Code, Atom, or any good text editor
- Install Github
- Install XAMPP, WAMPP, LAMPP
- Install Node, NPM and yarn (many NPM packages)
- Browser: Google Chrome, Firefox Developer Edition

## Tentative Course Schedule

May change to accommodate student needs.

Week	Content	
1	Introduction to the Web, Internet, HTTP, HTML,tags,tables, lists	
2	Images, Forms, Semantic HTML, Divs, Github, CSS,Selectors, Specificity Layouts,	Project Proposals due
3	CSS Box Model, Responsive Design, CSS Bootstrap, SASS, Grid, Flexbox	Homework 1
4	Accessibility and Inclusive Design, Intro to JavaScript: Variables	Homework 2

Week	Content	
	Javascript: Functions, Object oriented JS, JS Validation	
5	JavaScript Events, Javascript DOM, JSON, Javascript APIs	Reading Assignment(Scrimba)
6	Back-end development with NodeJS	Homework 3 Reading Assignment(Scrimba)
7	Back-end development with NodeJS continued, No Code Tools: Web Flow, Prototyping: Figma	Reading Assignment(Scrimba)
8		Final project presentations

## Collaboration and Academic Integrity

Students are expected to adhere to the [CUNY policy on academic integrity](#). It is acceptable, even encouraged to form study groups and collaborate in understanding homework problems, and preparing for exams. However, all the work on homework and projects should be your own work exclusively.

A sanction will certainly be imposed on the student committed to any academic fraud. It varies depending upon the instructor's evaluation of the nature and gravity of the offence. Possible sanctions include but are not limited to, the following: (1) Requiring

the student to redo the assignment; (2) Requiring the student to complete another assignment; (3) Assigning a grade of zero to the assignment; (4) Assigning a final grade of zero for the whole course.