



CS 380 Web Programming

(3 credits, 45 hours)

COURSE DESCRIPTION

In this course, students will plan, implement, design, and develop client-side web-based projects using HTML5, CSS, and JavaScript. Topics include the use of multimedia, forms, responsive design, jQuery, AJAX. Exposure to web development frameworks.

LEARNING OUTCOMES

Upon completion of the course, students will be able to:

1. Understand the foundations and principles of web development.
2. Develop and design web pages using HTML5 and CSS.
3. Implement interactive web components using JavaScript.
4. Embed multimedia elements like audio, video, and graphics.
5. Design and develop web forms to gather and validate user input.
6. Understand and apply principles of responsive web design.
7. Use jQuery to enhance interactivity and simplify complex JavaScript tasks.
8. Implement AJAX techniques for asynchronous data communication between client and server.
9. Gain basic exposure to popular web development frameworks.
10. Build a comprehensive client-side web project showcasing all learned skills.

REQUIRED MATERIALS

A laptop is required. The student can use Windows, MacOS or a Linux distribution as operating system. MacOS will be used by the faculty.

During the course we will use the following software that is highly recommended to install previously on laptops:

- **Web Browser:** Google Chrome (<https://www.google.com/chrome/>)
- **HTML Editor:** Visual studio code (<https://code.visualstudio.com/>)
- **Server-Side Scripting Engine:** NodeJS (<https://nodejs.org/>)
- **Web Server** (*optional*): Nginx
(<https://docs.nginx.com/nginx/admin-guide/installing-nginx/installing-nginx-open-source/>)

CLASSROOM PROTOCOL AND STUDENT'S RESPONSIBILITIES

In our Web Programming course, punctuality and preparation are vital. Ensure you're familiar with coding exercises and readings before class to actively engage in discussions. Prioritize quality over quantity in participation. Always approach coding debates with respect and an emphasis on collaboration. Focus on the practical application of coding theories and ensure devices are used solely for course tasks. If you'll miss a session, notify the instructor. Regular attendance is essential for a comprehensive understanding of the course.

TOPICS TO BE COVERED

Unit 1-2: Introduction to Web Programming and HTML

- The history and evolution of the web
- Introduction to web browsers, servers, and protocols
- Basics of HTML5: Structure, elements, attributes, and syntax

Unit 3-4: Cascading Style Sheets (CSS)

- Basics of CSS: Selectors, properties, and values
- CSS box model and positioning
- Advanced CSS techniques: animations, transitions, and transformations

Unit 5-6: JavaScript Fundamentals

- Introduction to JavaScript and its role in web development
- Variables, data types, and operations
- Control structures: loops, conditions, and functions

Unit 7: Multimedia Integration

- Embedding images, audio, and video
- SVG and canvas elements

Unit 8: Web Forms

- Designing forms with HTML5
- Form validation with JavaScript

Unit 9-10: Responsive Web Design

- Introduction to responsive design
- Media queries and mobile-first design
- Frameworks for responsive design

Unit 11: jQuery Basics

- Introduction to jQuery
- DOM manipulation with jQuery
- Event handling and animation

Unit 12: AJAX Techniques

- Introduction to AJAX and its importance
- Making AJAX requests using jQuery

Unit 13: Introduction to Web Development Frameworks

- Overview of popular frameworks like Bootstrap, Foundation, etc.
- Basics of integrating a framework into a project

Unit 14-15: Final Project and Review

- Planning, designing, and developing a client-side web project.
- Review and consolidation of course materials

ASSIGNMENTS AND GRADING POLICY

1. **Weekly Quizzes (20%)**: Short quizzes will be given at the end of each week to test knowledge of the covered materials.
2. **Homework Assignments (30%)**: There will be bi-weekly homework assignments, focusing on practical application of topics discussed in class. This will encompass coding exercises, webpage designs, and mini projects.

3. **Final Project (35%)**: Students will develop a full client-side web project that incorporates most of the elements discussed throughout the semester. Due at the end of Week 15.
4. **Class Participation (15%)**: Participation in discussions, group work, and in-class activities.

Grading Scale:

A	95%-100%
A-	90%-94%
B+	87%-89%
B	83%-86%
B-	80%-82%
C+	77%-79%
C	73%-76%
C-	70%-72%
D+	67%-69%
D	63%-66%
D-	60%-62%
F	under 60

ACADEMIC INTEGRITY

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified.