湖北工業大學
HUBEI UNIVERSITY OF TECHNOLOGY

Course Title	Web Programming
Course Code	CMPT 3341
Semester	Summer 2026
Course Length	4 Weeks, 60 Contact Hours
Credits	4
Instructor	Wei Chao
Office	Science and Technology Building A403
Email	9030885373@qq.com
Prerequisite	CMPT 2141 Data Structures and Algorithms Successful completion of an introductory programming course (C or Python).

Course Description:

This course explores the comprehensive architecture of modern web applications. Moving beyond static layout, students will master the programmatic control of the browser environment and the implementation of robust server-side logic. The course emphasizes the integration of client-side scripting, RESTful API design, and persistent data storage. By the end of the term, students will be capable of engineering secure, data-driven web platforms from the ground up, following professional software engineering standards.

Delivery Mode: In-Person, Face-to-Face Instruction

Course Goals:

Students who successfully complete this course will demonstrate competency in the following general education core goals:

- **Critical Thinking Skills** – Students will engage in analytical thinking, demonstrating the ability to critically evaluate, synthesize, and apply knowledge to complex problems, and construct well-reasoned solutions and arguments.
- **Independent Research and Inquiry** – Students will conduct independent research, utilizing academic resources to explore relevant topics, formulating research questions, analyzing data, and presenting findings in a coherent, scholarly manner.
- **Problem-Solving and Application** – Students will apply theoretical concepts and methodologies learned in the course to real-world problems, demonstrating the ability to develop practical solutions informed by academic inquiry.
- **Global and Cultural Awareness** – Students will gain awareness of the global and cultural contexts relevant to the course, appreciating diverse perspectives

and considering the implications of their studies in a broader, international context.

Student Learning Outcomes:

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

- Implement complex interactive features using the Document Object Model (DOM) and event-driven programming;
- Develop server-side applications using modern frameworks and routing logic;
- Design and query relational databases to support application persistence;
- Master asynchronous programming to facilitate real-time data exchange between client and server.

Textbooks/Supplies/Materials/Equipment/ Technology or Technical Requirements:

Textbooks:

[D1]: Jon Duckett. *HTML and CSS: Design and Build Websites.* Wiley, 2011.
[D2]: Jon Duckett. *JavaScript and JQuery: Interactive Front-End Web Development.* Wiley, 2014.
[H]: Marijn Haverbeke. *Eloquent JavaScript: A Modern Introduction to Programming, 3rd edition.* No Starch Press, 2018.
[G]: Miguel Grinberg. *Flask Web Development: Developing Web Applications with Python, 2nd edition.* O'Reilly, 2018.

Required installations (free): VS Code, Python 3.x (with Flask), SQLite3, and Git.

Course Requirements:

Laboratory Assignments (30%)
These five programming tasks require students to build functional components of a web system. They progress from basic CSS layouts to complex full-stack features involving server-side logic.

Technical Quizzes (15%)
Three in-class quizzes ensure students are keeping pace with syntax and architectural concepts. These are closed-book and focus on problem-solving within JavaScript and Python/Flask frameworks.

Midterm Exam (25%)
This exam covers all client-side material. Students must demonstrate proficiency in the Document Object Model (DOM), event handling, and core JavaScript logic.

Final Project (30%)
This is a cumulative project where students develop a complete, data-driven web application. It must feature a persistent database, a RESTful API, and an interactive front-end, reflecting a blended mastery of all course modules.

Assessments: Activity	**Percent Contribution**
Laboratory Assignments	30%
Technical Quizzes	15%
Midterm Exam	25%

Final Project	30%

Grading:

Final grades will be based on the sum of all possible course points as noted above.

Grade	**Percentage of available points**
A	94-100
A-	90-93
B+	87-89
B	84-86
B-	80-83
C+	77-79
C	74-76
C-	70-73
D	64-69
D-	60-63
F	0-59

Course Schedule:
The schedule of activities is subject to change at the reasonable discretion of the instructor. Minor changes will be announced in class, major ones provided in writing.

CMPT 3341 Schedule

Lecture	Topic	Readings	Activities
L1	Web Protocols & HTML5 Structure	[D1] Ch. 1, 17	
L2	Text Representation & Semantic Markup	[D1] Ch. 2, 8	
L3	CSS Foundations: Color and Typography	[D1] Ch. 10, 11, 12	Lab 1: Static Layout
L4	The CSS Box Model & Layout Control	[D1] Ch. 13, 15	
L5	JavaScript Fundamentals: Types & Logic	[D2] Ch. 1, 2; [H] Ch. 1, 2	
L6	Functional Programming in JS	[D2] Ch. 3; [H] Ch. 3	Quiz 1: Front-end Syntax
L7	Data Structures: Objects & Arrays	[H] Ch. 4, 6	
L8	DOM Level 1: Selection & Manipulation	[D2] Ch. 5; [H] Ch. 14	Lab 2: Dynamic UI
L9	DOM Level 2: Event-Driven Logic	[D2] Ch. 6; [H] Ch. 15	
L10	Programmatic Decisions & Loops	[D2] Ch. 4	
L11	Handling Browser Storage & JSON	[D2] Ch. 8	Quiz 2: DOM & Events
L12	Midterm Review: Client-Side Architecture	Suppl.	
L13	**Midterm Examination**		
L14	Intro to Server-Side Development (Flask)	[G] Ch. 1, 2	Lab 3: JS Interaction
L15	Routing and Request-Response Cycle	[G] Ch. 2	
L16	Dynamic UI with Jinja2 Templates	[G] Ch. 3	
L17	Web Form Processing & Validation	[G] Ch. 4; [D2] Ch. 13	
L18	Asynchronous JS & Promises	[H] Ch. 11	Lab 4: Flask Server

L19	Client-Server Communication: Fetch/Ajax	[D2] Ch. 8, 9; [H] Ch. 18	
L20	Relational Database Foundations & SQL	[G] Ch. 5	Quiz 3: Server & API
L21	Database Integration with Flask-SQLAlchemy	[G] Ch. 5	
L22	Designing RESTful APIs	[G] Ch. 14	Lab 5: Database CRUD
L23	User Authentication & Secure Sessions	[G] Ch. 8	
L24	Advanced Web Security & Error Handling	[D2] Ch. 10; [G] Ch. 7, 15	
L25	Course Wrap-up & Project Showcase		Final Project

Accommodation Statement:

Academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. It is imperative that you take the initiative to bring such needs to the instructor's attention, as he/she is not legally permitted to inquire. Students who may require assistance in emergency evacuations should contact the instructor as to the most appropriate procedures to follow.

Academic Integrity Statement

Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or otherwise fails to meet the standards. Any student judged to have engaged in academic dishonesty in coursework may receive a reduced or failing grade for the work in question and/or for the course.

Academic dishonesty includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.

Other Items:

Attendance and Expectations

All students are required to attend every class, except in cases of illness, serious family concerns, or other major problems. We expect that students will arrive on time, be prepared to listen and participate as appropriate, and stay for the duration of a meeting rather than drift in or out casually. In short, we anticipate that students will show professors and fellow students maximum consideration by minimizing the disturbances that cause interruptions in the learning process. This means that punctuality is a must, that cellular phones be turned off, and that courtesy is the guiding principle in all exchanges among students and faculty. You will be responsible for the materials and ideas presented in the lecture.

Assignment Due Dates

All written assignments must be turned in at the time specified. Late assignments will not be accepted unless prior information has been obtained from the instructor. If you believe you have extenuating circumstances, please contact the instructor as soon as possible.

Make-Up Work
The instructor will not provide students with class information or make-up assignments/quizzes/exams missed due to an unexcused absence. Absences will be excused and assignments/quizzes/exams may be made up only with written documentation of an authorized absence. Every effort should be made to avoid scheduling appointments during class. An excused student is responsible for requesting any missed information from the instructor and setting up any necessary appointments outside of class.

Access, Special Needs, and Disabilities
Please notify the instructor at the start of the semester if you have any documented disabilities, a medical issue, or any special circumstances that require attention, and the school will be happy to assist.