WD 211 – Web Design and Development II (4 credits)

Section 1

Semester II 2021-2022

Course description: Concepts of client-side programming of Web applications. Introduction to one or more Web centric languages.

Course information

Class meetings	Tuesdays and Thursdays, 8:00 AM–9:50 PM in Science A224
Final exam time	Final exam will be available in Canvas during the final exam period.
Instructor	Tomi Heimonen, PhD
Office location	B235, Science Building
Email	theimone@uwsp.edu
Telephone	(715) 346-4145
Communication	You are encouraged to contact me if you have any questions. When communicating via email, please add "WD 211" on the subject line.
Office hours	In-person: Mondays and Wednesdays, 9:00AM-11:00AM. Other times and online: By appointment Check Canvas for instructions on how to sign up for online office hours.
Class website	Canvas will be used to distribute course materials, assignments, and grades. Check it regularly to stay informed of changes to class schedules and other important announcements.
Prerequisites	CNMT 210 – Web Design and Development I
Textbooks	The following required textbook is available at Text Rental: • Mary Delamater and Zak Ruvalcaba: Murach's JavaScript and jQuery, 4th Edition, Mike Murach & Associates. ISBN: 978-1943872626

This syllabus and course timetable are subject to change. It is your responsibility to check Canvas for corrections and updates. Any changes will be clearly noted in class, in a course announcement and/or through email.

Course description

The goal of this course is to introduce the core concepts, techniques, and tools for developing websites using the JavaScript programming language and related tools.

The following topics will be covered:

- JavaScript fundamentals: incorporating JavaScript on a page, data types, variables, objects, properties, functions, control structures and events, error handling, strings, and dates.
- Using JavaScript to create interactive web content: DOM API, input validation, AJAX, JSON and web APIs.
- Using JavaScript utility libraries such as jQuery.
- Debugging and troubleshooting JavaScript programs with IDE and browser developer tools.
- Advanced JavaScript topics: object-oriented JavaScript, modules, asynchronous programming, and front-end frameworks.
- Development and deployment tools for web projects.

Course learning outcomes

Upon completing this course, the expectation is that you will have gained and successfully demonstrated the following knowledge and skills:

- Describe key mechanisms by which JavaScript interacts with web page content, user inputs and external services such as web APIs.

- Utilize industry standard development tools to implement, troubleshoot and test JavaScript code.
- Demonstrate ability to follow JavaScript programming and documentation best practices.
- Demonstrate ability to use JavaScript libraries, tools, and frameworks to support web development tasks.
- Implement interactive client-side web content to satisfy project requirements.

Course requirements

Completing coursework awards a maximum total of 100 points.

Programming labs: Labs award a total of 45 points.

- Programming labs will help you familiarize with the concepts and techniques introduced in course content.
- The course has 11 labs. Two of the lowest grading labs will be dropped when calculating the final grade.

Course project: The course project awards a total of 25 points.

- The course project supports you in demonstrating your competence in applying the knowledge and skills gained during class.
- You will design and implement a small web application that uses JavaScript to query external data sources.

Exams and quizzes: Exams and quizzes award a total of 30 points.

- Exams and quizzes will assess your ability to describe, explain and apply the key topics and concepts discussed in course materials.
- Exams and quizzes will cover the assigned readings and content introduced in class.

All coursework is to be completed individually unless otherwise instructed in writing.

Submitting coursework

All coursework must be submitted **electronically through Canvas**, unless otherwise instructed.

Points you receive for graded activities will be posted to Canvas. Online grades are updated once a grading session has been completed – typically within 4-5 business days following the completion of an activity.

Software and hardware requirements

Storage media (e.g., flash drive or external hard drive) or cloud-based storage (e.g., OneDrive) will be useful to store and transport the files created during this course. Microsoft Visual Studio Code (https://code.visualstudio.com/) will be used as the IDE in this course to demonstrate code examples and techniques. It is a recommended programming environment and can be downloaded for free.

Grading scale

Final grades will be determined as a percentage of points earned out of 100 points according to the following scale:

Grades	Percentage	Grades	Percentage	Grades	Percentage
A	93.00% or more	B-	82.99% – 80.00%	D+	69.99% – 65.00%
A-	92.99% – 90.00%	C+	79.99% – 77.00%	D	64.99% – 60.00%
B+	89.99% – 87.00%	C	76.99% – 73.00%	F	Less than 60.00%
B	86.99% – 83.00%	C-	72.99% – 70.00%		

The instructor reserves the right to revise the grade cutoffs to be more generous if necessary.

Course policies

Late policy

Coursework must be submitted by the given deadline, or an extension must be requested from the instructor **before the due date**. If you know ahead of time that you will have a legitimate reason for missing a due date, contact the instructor to discuss an extension.

Coursework that is turned in late will receive a 20% reduction in points awarded. **Submissions that are more than 3 days late will receive 0 points**.

The instructor reserves the right to adjust this policy to account for extraordinary situations, such as documented illness or medical emergencies. You are required to inform the instructor as soon as possible of such situations.

Attendance policy

Attending class will likely be the single most important factor in determining your performance and grade in the course, so plan to attend every class. The relationship between attendance and achievement in education has been extensively documented in peer-reviewed research. **I am not able to re-teach the material to you if you are absent, but I will do my best to provide alternative options for you to acquire the content.**

Excused absences: If you need to miss a class, notify the instructor via email no later than by the morning of the class meeting in question.

- The following is a non-exhaustive list of legitimate reasons to be absent from class: illness, COVID-19 quarantine, religious observance, military service obligations, pregnancy, and medical appointments.
- Documentation is **not required** for absences for the above reasons unless you will end up missing more than two consecutive class meetings.

Making up missed in-class work, such as exams and assignments, is **allowed only for excused absences**. Coursework needs to be completed within 7 days of the original due date, unless otherwise agreed upon in writing with the instructor.

- In case of extenuating circumstances, such as personal or medical emergencies, you should contact the instructor as soon as possible discuss arrangements for making up missed coursework.

If you have any questions or concerns regarding this policy, your first point of contact should be the instructor. If you are unable to reach the instructor, or if you are experiencing a personal or medical crisis/emergency, contact the Office of the Dean of Students at dos@uwsp.edu or (715) 346-2611.

Absences due to military service

You will not be penalized for class absence due to unavoidable or legitimate required military obligations, or medical appointments at a VA facility, not to exceed two (2) weeks unless special permission is granted by the instructor. You are responsible for notifying faculty members of such circumstances as far in advance as possible and for providing documentation to the Office of the Dean of Students to verify the reason for the absence. The faculty member is responsible to provide reasonable accommodations or opportunities to make up exams or other course assignments that have an impact on the course grade. For absences due to being deployed for active duty, please refer to the Military Call-Up Instructions for Students.

Face coverings

At all UW-Stevens Point campus locations, the wearing of face coverings is mandatory in all buildings, including classrooms, laboratories, studios, and other instructional spaces. Any student with a condition that impacts their use of a face covering should contact the Disability and Assistive Technology Center to discuss accommodations in classes. Please note that unless everyone is wearing a face covering, in-person classes cannot take place. This is university policy and not up to the discretion of individual instructors. Failure to adhere to this requirement could result in formal withdrawal from the course.

This policy may be adjusted based on the duration of the chancellor's mask mandate.

COVID-19 precautions

- Please monitor your own health each day using this screening tool. If you are not feeling well or believe you have been exposed to COVID-19, do not come to class; email your instructor and contact Student Health Service (715-346-4646).
    - As with any type of absence, students are expected to communicate their need to be absent and complete the course requirements as outlined in the syllabus.
- Maintain a minimum of 6 feet of physical distance from others whenever possible.
- Do not congregate in groups before or after class; stagger your arrival and departure from the classroom, lab, or meeting room.
- Wash your hands or use appropriate hand sanitizer regularly and avoid touching your face.
- Please maintain these same healthy practices outside the classroom.

Teamwork
Some of the coursework activities may be completed in teams of 2-3 students. Each member of the group is responsible for completing their portion of the assigned work to the best of their ability. As a part of each coursework activity carried out as a group, the groups are required to submit a statement that describes how the group divided up the work. The statement may be used as the basis for grading and conflict resolution.

Dropping/withdrawing from the course
It is the student's responsibility to understand when they need to consider un-enrolling from a course. Refer to the Academic Calendar for dates and deadlines for registration. After this period, a serious and compelling reason is required to drop from the course. Serious and compelling reasons include, but are not limited to, the following: documented and severe physical/mental illness/injury to the student or student's family. Please consult the instructor at the earliest opportunity to discuss the need to drop the course after the mandated deadline.

Incomplete policy
Under emergency/special circumstances, you may petition for an incomplete grade. An incomplete will only be assigned if inability to complete the coursework was due to a documented illness/injury or other circumstance beyond your control. All incomplete course assignments must be completed by the end of Semester I 2022-2023.

Nondiscrimination
You may be asked to review and provide feedback on the work created by your peers. When doing so, please remember that the objective is to critique the work, not the person.

It is the policy of the University of Wisconsin-Stevens Point to:

> Foster an environment of respect for the dignity and worth of all students, employees, and guests of the university; Provide an environment which is conducive to the free and open exchange of ideas; and Strive to eliminate bias, prejudice, discrimination, and harassment in all forms and manifestations.
>
> Discrimination based on an individual's age, race, color, religion, sex, gender identity or expression, national origin, ancestry, marital status, pregnancy, parental status, sexual orientation, disability, political affiliation, arrest or conviction record, membership in the National Guard, state defense force or any other reserve component of the military forces of the United States or this state, or other protected class status is demeaning to all students, employees, and guests; impairs the process of education; and violates individual rights.

Accommodations

UWSP is committed to providing reasonable and appropriate accommodations to students with disabilities and temporary impairments. If you have a disability or acquire a condition during the semester where you need assistance, please contact the Disability and Assistive Technology Center on the 6th floor of Albertson Hall as soon as possible. DATC can be reached at (715) 346-3365 or DATC@uwsp.edu.

Academic honesty and integrity

As a student in this course and at this university, you are expected to maintain a high degree of professionalism, commitment to active learning and participation, and integrity in your behavior in and out of the classroom.

UWSP 14.01 Statement of principles

The board of regents, administrators, faculty, academic staff and students of the university of Wisconsin system believe that academic honesty and integrity are fundamental to the mission of higher education and of the university of Wisconsin system. The university has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors. Students who violate these standards must be confronted and must accept the consequences of their actions.

UWSP 14.03 Academic misconduct subject to disciplinary action
(1) Academic misconduct is an act in which a student:
   a. Seeks to claim credit for the work or efforts of another without authorization or citation;

b. Uses unauthorized materials or fabricated data in any academic exercise;
c. Forges or falsifies academic documents or records;
d. Intentionally impedes or damages the academic work of others;
e. Engages in conduct aimed at making false representation of a student's academic performance; or
f. Assists other students in any of these acts.

(2) Examples of academic misconduct include, but are not limited to:
a. cheating on an examination;
b. collaborating with others in work to be presented, contrary to the stated rules of the course;
c. submitting a paper or assignment as one's own work when a part or all of the paper or assignment is the work of another;
d. submitting a paper or assignment that contains ideas or research of others without appropriately identifying the sources of those ideas;
e. stealing examinations or course materials;
f. submitting, if contrary to the rules of a course, work previously presented in another course;
g. tampering with the laboratory experiment or computer program of another student;
h. knowingly and intentionally assisting another student in any of the above, including assistance in an arrangement whereby any work, classroom performance, examination or other activity is submitted or performed by a person other than the student under whose name the work is submitted or performed.

Use of third-party content and work previously presented in another course

You may use online sources, such as StackOverflow, YouTube and LinkedIn Learning, to help in completing graded course activities.

You must properly cite and acknowledge any code or other third-party material that you incorporate into your own work. Failure to do so will be considered a form of academic misconduct and is subject to disciplinary action.

If you have any questions on concerns on acceptable practices, consult the instructor in advance.

Submitting work previously presented in another course is not allowed, unless approved by the instructor in writing.

Tentative course schedule

Week	*Topics*	*Coursework due*
01	**Syllabus review** **Essential JavaScript development tools** • Project setup best practices • Including JavaScript content in HTML • JavaScript basic syntax • Browser developer tools • Web development IDEs and tools: Visual Studio and extensions	Lab 1: Setting up VS Code and development tools
02	**JavaScript fundamentals** • JavaScript versions, TypeScript, and other flavors • Variable definition and variable hoisting • Functions: function expression vs. function definition • Basic data types and structures	Lab 2: Writing a simple JavaScript program
03	**JavaScript fundamentals** • Operators: assignments and expressions • Conditional execution and control statements • Objects: methods and properties • Exception handling: try/catch, throwing exceptions	Lab 3: Adding control flow and exception handling
04	**Testing and troubleshooting** • Common JavaScript errors • Debugging errors with the IDE and browser developer tools • Code testing approaches	Lab 4: Debugging JavaScript code
05	**Event handling and DOM manipulation** • Event handling • Adding, removing, and manipulating DOM elements	Quiz 1 (Canvas)
06	**JavaScript libraries and jQuery** • Working with JavaScript libraries • jQuery selectors, methods, and events	Lab 5: Using jQuery to respond to events and manipulate page content

	• jQuery HTML and CSS manipulation methods • jQuery DOM traversal methods	
07	**Working with strings, dates, and numbers** • Working with dates and times; date libraries • String methods and manipulation; string libraries • Using regular expressions • Math and Number objects; methods for mathematical operations	Course project: Checkpoint 1
08	**AJAX and JSON** • AJAX basics • Making AJAX requests: XMLHttpRequest and Fetch API • JSON basics: JSON notation, parsing to/from JSON • AJAX and JSON with jQuery • Cross-origin resource sharing	Lab 6: Making simple AJAX requests Midterm exam (Canvas)
	Spring break	
09	**Working with forms and input validation** • Working with form controls and events • Input validation with native JavaScript and libraries • Populating form data using AJAX	Lab 7: Input validation in forms
10	**Web APIs** • Introduction to Web APIs • Working with Web APIs to retrieve and store data	Lab 8: Making AJAX requests to a Web API
11	**Object-oriented JavaScript** • Object-orientation in JavaScript • Prototypes and inheritance	Lab 9: Implementing object-oriented features
12	**Modular and asynchronous JavaScript** • Closures and ES modules • Promises and async/await	Lab 10: Using modules Quiz 2 (Canvas)
13	**JavaScript front-end frameworks** • Introduction to front-end frameworks • Using command line tools to bootstrap a project	Course project: Checkpoint 2
14	**JavaScript front-end frameworks** • Working with Vue.js	Lab 11: Creating a simple Vue.js project
15	**Flex / Work time / Review**	Course project: Checkpoint 3
16	**Final exam period**	Final exam (Canvas)

Important Note: Refer to Canvas for specific due dates for coursework. If you have any questions, please contact the instructor.