CS418/518: Web Programming Syllabus – Spring 2026

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Course Overview

General Information:
This class introduces Web Programming: the process of writing interactive applications accessible through the WWW. The course covers JavaScript, React, Node.js with Express.js, web security concepts such as reCaptcha, and cross-site vulnerabilities (XSS) and clickjacking attacks. Emphasis is on integrating these components into a functional application.

Students will develop a semester-long project, either from scratch or using open-source frameworks. By the end of the course, students will be proficient in full-stack development and modern web design, with guidance on best practices and quality coding. Git will be used for version control.

Catalog Description:
Laboratory work required. Overview of Internet and World Wide Web; web servers and security, HTTP protocol; web application and design; server-side scripts and database integration, and programming for the Web.

Instructor Contact Information

Instructor	Email	Class Room
Nasreen Arif	narif@odu.edu	Zoom

Class Time: 3:00 pm – 4:15 pm, Monday and Wednesday
First Class Date: Wednesday, 01/21/2026
Last Class Date: Monday, 05/04/2026

Virtual Office Hours:
Office hours will be held Monday - Thursday by appointment only. Please use the provided link to schedule your appointment. All scheduled meetings will take place via Zoom. Once your appointment is confirmed, you will receive a Zoom link in the confirmation email

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Course Delivery Method

- Delivered via Zoom web conferencing.
- Course materials and slides distributed throughout the semester via Canvas.
- Class meetings: MW 3:00–4:15 pm via Zoom (attendance encouraged but not required).
- Class recordings will be made available on Canvas after each class session.
- All deadlines follow Norfolk, VA local time.

Requirements

Prerequisites:
CS312: Internet Concepts; CS330: Object-Oriented Programming and Design.

This course will use React for frontend development and Node.js with Express.js for backend development. Prior experience with JavaScript is required. While students are not expected to have prior experience with React, Node.js, or Express.js, they are expected to be able to learn new frameworks efficiently given their existing JavaScript background. Students who are less confident in their JavaScript skills are strongly encouraged to review the language before the semester begins.

Here are some recommended JavaScript resources:

- MDN Web Docs – https://developer.mozilla.org/
- JavaScript.info – https://javascript.info/
- freeCodeCamp – https://www.freecodecamp.org/learn
- W3Schools (supplemental) – https://www.w3schools.com/js/

Textbook
No required textbook. Recommended: *Web Programming with HTML5, CSS, and JavaScript* by John Dean.

Optional Materials:
These technologies are listed for reference and exploration; prior experience with them is not required

- Angular - https://angular.dev/
- React - https://react.dev/
- Node.js - https://nodejs.org/en
- ExpressJS - https://expressjs.com/
- MySQL - https://www.mysql.com/

Hardware and Software Requirements:

- PC (Windows 10+) or Mac (MacOS 10.14+) for software development
- Visual Studio Code introduced in class
- Access to open-source software packages

Grading Policy

This course is project-centered; therefore, the majority of the grade is based on the semester-long project and its milestones.

There will be a total of 100 points available for the semester.

Project: 95%

Milestone	Weight
Milestone 1	35% (Demo 30% + Report 5%)
Milestone 2	30% (Demo 25% + Report 5%)
Milestone 3	30% (Demo 25% + Report 5%)

Assignments: 5%

Grading Chart

Grade	Percentage
A	94-100
A-	90-93.99
B+	87-89.99
B	84-86.99
B-	80-83.99
C+	77-79.99
C	74-76.99

Additional expectations may apply for CS518 students, including greater project complexity, technical depth, or documentation requirements, as specified in milestone descriptions.

Late Submission Policy

- Students who are unable to submit reports or project milestones by the stated deadlines must provide **written documentation** (e.g., a medical note or official university excuse).
- Extensions may be granted **at the discretion of the instructor** and are evaluated on a **case-by-case basis**.
- Submissions received after the deadline **without approved documentation** will be assessed a **50% penalty** on the earned score
  (e.g., a submission earning 80 points will be recorded as 40 points).
- Project features not implemented by the designated milestone deadline will receive **zero credit** for that milestone.
- Features completed after the original milestone deadline may receive **partial credit of up to 50%** of the original point value, provided the feature is fully implemented **by the final milestone**.
- Partial credit for late feature implementation is **capped at 50%** of the original value and is awarded **at the instructor's discretion**.
- No additional credit will be granted for features implemented after the final milestone submission.

Course Policies

Email/Canvas

Each student must check email daily. I will use Canvas Announcements to notify you about important updates (assignment deadline changes, class cancellations, etc.).

Participation

Since this is an online class, it is essential that you regularly stay involved in class activities. This includes attending synchronous class meetings when possible, checking the class Canvas for announcements, submitting assignments on time.

Make-up Work

Make-ups for graded activities are possible only with a valid written medical or university excuse. It is the student's responsibility to give the instructor the written excuse and to arrange for any makeup work to be done.

Disability Services

In compliance with PL94-142 and more recent federal legislation affirming the rights of disabled individuals, provisions will be made for students with special needs on an individual basis. The student must have been identified as special needs by the university and an appropriate letter must be provided to the course instructor. Provision will be made based upon written guidelines from the University's Office of Educational Accessibility. All students are expected to fulfill all course requirements.

Students are encouraged to self-disclose disabilities that have been verified by the Office of Educational Accessibility by providing Accommodation Letters to their instructors early in the semester in order to start receiving accommodations. Accommodations will not be made until the Accommodation Letters are provided to instructors each semester.

Seeking Help

The course Canvas site should be your first reference for questions about the class. If you have questions about course requirements or materials, post questions using the class Canvas Discussion Board. For extra help, attend office hours.

Use of ChatGPT and other AI Tools

The use of ChatGPT or other AI tools is permitted *to some extent* in this class. These tools are being rapidly adopted, so it is important that you have some experience with their use. These tools are best used to help you work smarter, not do your work for you. Remember that an essential part of being in graduate school is to develop skills that you will need to be successful in the workplace. Using aids just to complete an assignment in the quest for high marks will not help you after you leave school.

I encourage you to use these tools to help you deepen your understanding and to review material you find challenging. If you use them to blindly do your work for you, your learning will suffer and it will be obvious. But, if you use them to help clarify misunderstandings as you go, you will work and learn faster and hopefully build a solid foundation.

For all submissions, you must include a list of websites or other references that you consult in completing the milestone. This includes AI tools. Not only must you include the website for the tool, but you must include a link to, or screenshot of, the conversation you had with the tool. (ChatGPT has the option to create a link to a conversation.) You must also write out in your milestone report the initial prompt that you used.

Note that this does not mean that ChatGPT is acceptable for use in other courses. This policy applies only for CS 418/518.

Academic Integrity

Old Dominion University is committed to students' personal and academic success. In order to achieve this vision, students, faculty, and staff work together to create an environment that provides the best opportunity for academic inquiry and learning. All students must be honest and forthright in their academic studies. Your work in this course and classroom behavior must align with the expectations outlined in the Code of Student Conduct, which can be found at https://www.odu.edu/oscai.

The following behaviors along with classroom disruptions violate this policy, corrupt the educational process, and will not be tolerated.

- Cheating: Using unauthorized assistance, materials, study aids, or other information in any academic exercise.
- Plagiarism: Using someone else's language, ideas, or other original material without acknowledging its source in any academic exercise.
- Fabrication: Inventing, altering or falsifying any data, citation or information in any academic exercise.
- Facilitation: Helping another student commit, or attempt to commit, any Academic Integrity violation, or failure to report suspected Academic Integrity violations to a faculty member.

In particular, submitting anything that is not your own work without proper attribution (giving credit to the original author) is plagiarism and is considered to be an academic integrity violation. It is not acceptable to copy source code or written work from any other source (including other students, online resources), unless explicitly allowed in the assignment statement. In cases where using resources such as the Internet is allowed, proper attribution must be given.

Any evidence of an academic integrity violation (cheating) will result in a 0 grade for the assignment/exam, and the incident will be submitted to the Department of Computer Science for further review. Note that academic integrity violations can result in a permanent notation being placed on the student's transcript or even expulsion from the University. Evidence of cheating may include a student being unable to satisfactorily answer questions asked by the instructor about a submitted solution. Cheating includes not only receiving unauthorized assistance, but also giving unauthorized assistance. For class files kept in Unix space, students are expected to use Unix file permission protections (chmod) to keep other students from accessing the files. Failure to adequately protect files may result in a student being held responsible for giving unauthorized assistance, even if not directly aware of it.

Students may still provide legitimate assistance to one another. You are encouraged to form study groups to discuss course topics. Students should avoid discussions of solutions to ongoing assignments and should not, under any circumstances, show or share code solutions for an ongoing assignment.

All students are responsible for knowing the rules. If you are unclear about whether a certain activity is allowed or not, please contact the instructor.

More information on academic integrity is available on the ODU academic integrity page.

Statement from ODU Counseling Services

ODU's Office of Counseling Services (OCS, 1526 Webb University Center) is a university agency with competent, diverse, and multidisciplinary professional staff. We are committed to supporting the emotional well-being, social development, and academic progress of all students at Old Dominion University.

College life can be a wonderful time of self-discovery, but for many, it is also a time when the awareness of mental health conditions increases. OCS services are available to assist with addressing mental health concerns that a student may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via our website at http://www.odu.edu/counselingservices. All services are free to ODU students.

Summary Schedule

Note: This is a tentative schedule and may change during the semester. ODU Spring 2026 academic schedule

Week	Date	Topic	Exercises
1	Wed, 01/21/2026	Course Introduction	GitHub Preparation
2	Mon, 01/26/2026	Web architecture and web application frameworks	
2	Wed, 01/28/2026	IDE, HTML & CSS Overview	GitHub preparations due
3	Mon, 02/02/2026	JavaScript Overview, Milestone 1 specifications	Milestone 1 starts
3	Wed, 02/04/2026	Introduction to React	
4	Mon, 02/09/2026	React Framework	
4	Wed, 02/11/2026	An Introduction to MySQL	
5	Mon, 02/16/2026	API & NodeJS	
5	Wed, 02/18/2026	Express JS, Middleware, Connecting DB to Backend	
6	Mon, 02/23/2026	CRUD Operations on REST API, Authentication	
6	Wed, 02/25/2026	Authentication, Password Encryption, Sending Emails, Connecting Frontend to Backend	
7	Mon, 03/02/2026	React Escape Hatches	
7	Wed, 03/04/2026	Milestone 1 Demo Session A	
8	Mon, 03/09/2026	Milestone 1 Demo Session B	Milestone 1 report due

Week	Date	Topic	Exercises
8	Wed, 03/11/2026	Styling React Components, Session & Cookies	
9	Mon, 03/16/2026	Spring Holiday	
9	Wed, 03/18/2026	Spring Holiday	
10	Mon, 03/23/2026	Debugging & Testing Application	
10	Wed, 03/25/2026	Application Deployment	
11	Mon, 03/30/2026	Web Application Security	
11	Wed, 04/01/2026	Good Practices for Site Design, Code Linting & Formatting Techniques	
12	Mon, 04/06/2026	Milestone 2 Demo Session A	
12	Wed, 04/08/2026	Milestone 2 Demo Session B	Milestone 2 report due
13	Mon, 04/13/2026	Integrating AI Services into Web Applications	
13	Wed, 04/15/2026	Chatbot Development	
14	Mon, 04/20/2026	Introduction to Vue JS	
14	Wed, 04/22/2026	TypeScript	
15	Mon, 04/27/2026	Q/A Session	
15	Wed, 04/29/2026	Milestone Demo 3 Session A	
16	Mon, 05/04/2026	Milestone Demo 3 Session B	Final report due

> *Course schedule is subject to change depending on instructor availability.*

Exam Schedule

- There is no exam for this course.