

# CS418/518: Web Programming Syllabus

Fall 2021

## Instructor and Course Information

<b>Instructor</b> Jian Wu	<b>Email</b> jwu@cs.odu.edu	<b>Class Room</b> DRGS 2115
<b>Class Time</b> 3 pm - 4:15 pm, T/R	<b>First Class Date</b> Tuesday, 8/31/2021	<b>Last Class Date</b> Thursday, 12/09/2021
<b>Prerequisites</b> CS312: Internet Concepts; CS330: Object-Oriented Programming and Design.	<b>Virtual Office Hours</b> 9 am - 10 am, Tuesday or by appointment	

## General Information

### Description

This class will introduce Web Programming: the process of writing interactive applications accessible through the WWW. We will develop in the LAMP environment: Linux, Apache, PHP, MySQL, and Elasticsearch. Emphasis will be on the integration of these components for a useful application. Lectures will provide the overview of various concepts and the class will be centered around development of a semester-long project. Students have the freedom to build a web application from scratch or based on *Laravel*, one of the most popular free and open-source frameworks using the Model-View-Controller architecture.

Successful students will be proficient in LAMP stack development and modern web design. The course will give best practice instruction and guidance in developing a website whose primary goal is to help users find useful online resources using search engines. Students will be evaluated on progressive milestones based on the instructor's specified features. The course will put weight on writing quality web programming codes and implementing different functions. Git will be used for version control.

### Course Delivery Method

This course will be held live (face to face) for the whole semester, unless otherwise be changed per university policies. Due to the health concerns amid the COVID-19 pandemic, the university requires facial masks inside the classroom. Students without facial masks are not allowed to enter the classroom. Policy link: [https://www.odu.edu/news/2021/8/message\\_from\\_preside](https://www.odu.edu/news/2021/8/message_from_preside).

### Grading Policy

Students are graded based on the following aspects.

- Attendance: 10%
- Project: 90%
  - Milestone 1: 30% (demo 20% + report 10%)
  - Milestone 2: 30% (demo 20% + report 10%)
  - Milestone 3: 30% (demo 20% + report 10%)

## Grading Chart

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

A provisional graduate student who receives one C in any of the required prerequisites will be subject to removal from the graduate program. A graduate student must maintain at least a 3.0 grade point average to graduate. ([ODU Grading Policy](#))

## Course Materials

### Required Text

There is no required textbook. Two recommended books are

[Learning PHP, MySQL & JavaScript: With jQuery, CSS & HTML5 \(Learning PHP, MYSQL, Javascript, CSS & HTML5\) 5th Edition](#) by Robin Nixon

[Laravel: Up & Running: A Framework for Building Modern PHP Apps 2<sup>nd</sup> Edition](#) by Matt Stauffer

### Optional Materials

- Laravel website: <https://laravel.com/docs/7.x>
- [The Ultimate Guide to Elasticsearch in Laravel Application](#)
- [Integrating Elasticsearch with your Laravel app](#)
- Course materials and other resources including slides and assignments will be distributed as the course proceeds in the semester

### Hardware and Software Requirements

Students will need frequent access to a PC (with Windows 10) or a Mac (with MacOS 10.14+) capable of hosting software development activities or of connecting to remote servers where such activities can be performed. The course will introduce students to a wide variety of software packages. All of these are open-source, free software, but students will need to install some of these on their chosen development machine.

## Course Schedule

Week	Date	Topic	Exercises
1	Tuesday, 8/31/2021	Course Introduction	
1	Thursday, 9/2/2021	Web architecture	GitHub Preparation
2	Tuesday, 9/7/2021	LAMP architecture	System preparation
2	Thursday, 9/9/2021	PHP-1: structure and control	
3	Tuesday, 9/14/2021	PHP-2: arrays, functions, and sessions	GitHub and System preparations due
3	Thursday, 9/16/2021	MySQL	
4	Tuesday, 9/21/2021	The Laravel framework and Milestone 1 specifications	Milestone 1 starts
4	Thursday, 9/23/2021	PHP-3: cookies, file I/O	

<b>Week</b>	<b>Date</b>	<b>Topic</b>	<b>Exercises</b>
5	Tuesday, 9/28/2021	PHP-4: images and CSS	
5	Thursday, 9/30/2021	Web design principles; How to make a good presentation; Milestone 2 specifications	
6	Tuesday, 10/5/2021	Milestone 1 Demo Session A	
6	Thursday, 10/7/2021	Milestone 1 Demo Session B	Milestone 1 report due
7	Tuesday, 10/12/2021	MVC Architecture	Milestone 2 starts
7	Thursday, 10/14/2021	Elasticsearch (ES) and Kibana	
8	Tuesday, 10/19/2021	Integrating ES with PHP	
8	Thursday, 10/21/2021	JavaScript-1: variables and operators	
9	Tuesday, 10/26/2021	JavaScript-2: expression and flow control; Milestone 2 specifications	
9	Thursday, 10/28/2021	JavaScript-3: common frameworks	
10	Tuesday, 11/2/2021	Election Day Holiday (no classes)	
10	Thursday, 11/4/2021	Milestone 2 Demo Session A	
11	Tuesday, 11/9/2021	Milestone 2 Demo Session B	Milestone 2 report due
11	Thursday, 11/11/2021	Invited talk (TBD)	
12	Tuesday, 11/16/2021	reCAPTCHA, spell check, and speech to text APIs; Milestone 3 specifications	
12	Thursday, 11/18/2021	CAPTCHA and RESTful APIs	
13	Tuesday, 11/23/2021	Web API	
13	Thursday, 11/25/2021	Thanksgiving Holiday (no classes)	
14	Tuesday, 11/30/2021	Recapitulation and Q&A	
14	Thursday, 12/2/2021	Project time	
15	Tuesday, 12/7/2021	Milestone 3 Demo Session A	
15	Thursday, 12/9/2021	Milestone 3 Demo session B	Final report due

\* Course schedules are subject to change depending on availability of speakers and the instructor.

## Exam Schedule

There is no exam for this course.

## Additional Information and Resources

### Attendance Policy

**Attendance is required.** One absence causes a deduction of 1% on attendance until all points are deducted in this aspect. If more than 11 absences are observed, the student automatically get an F for this course. In case of absence due to legitimate reasons, including but not limited to sickness, University-approved curricular and extracurricular activities (such as athletic contests), career interviews, the death of family members, students should be prepared to provide documentation **before** classes. Makeup classes are not available, but students can always discuss with the instructor about course content in office hours.

### Late Submission Policy

Project reports are due at exactly at midnight on the specified dates. Students **MUST** provide written evidence (such as a doctor's note) to prove that they could not finish reports on time due to emergencies. Additional time can be granted on a case-by-case basis. Submissions after deadlines without legitimate reasons are counted 50% of the real score, e.g., if a report earns 80 points, only 40 points are counted.

### Academic Integrity

Individual assignments must be completed independently. Students are strongly encouraged to form study groups and to learn from their peers. However, discussion on final proposal writing and presentation in the study group should be limited to general approaches to solutions. **Specific answers should never be discussed.** [ODU's policy regarding Academic Integrity](#) must be followed.

- **Cheating:** Using unauthorized assistance, materials, study aids, or other information in any academic exercise (Examples of cheating include, but are not limited to, the following: using unapproved resources or assistance to complete an assignment, paper, project, quiz or exam; collaborating in violation of a faculty member's instructions; and submitting the same, or substantially the same, paper to more than one course for academic credit without first obtaining the approval of faculty).
- **Plagiarism:** Using someone else's language, ideas, or other original material without acknowledging its source in any academic exercise. 4 Examples of plagiarism include but are not limited to submitting a research paper obtained from a commercial research service, the Internet, or from another student as if it were original work; or making simple changes to borrowed materials while leaving the organization, content, or phraseology intact. Plagiarism also occurs in a group project if one or more of the members of the group does none of the group's work and participates in none of the group's activities but attempts to take credit for the work of the group.
- **Fabrication:** Inventing, altering or falsifying any data, citation or information in any academic exercise. Examples of fabrication include, but are not limited to, the following: citation of a primary source which the student actually obtained from a secondary source; or invention or alteration of experimental data without appropriate documentation (such as statistical outliers).
- **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. An example of facilitation may include circulating course materials when the faculty member has not explicitly authorized their use.

### Copyright

All course materials students receive or to which students have online access are protected by copyright. Students may use course materials and make copies for their own use as needed, but **unauthorized distribution and/or uploading of materials without the instructor's express permission is strictly prohibited.**

## Disability Accommodation

In order to receive consideration for reasonable accommodations, you must contact the appropriate services office will provide you with an accommodation letter. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. The detail of disability accommodations is documented in [ODU policy #4500](#).

## Discrimination and Harassment

- The university is committed to equal access to programs, facilities, admission and employment for all persons. It is the policy of the university to maintain an environment free of harassment and free of discrimination against any person because of age, race, color, ancestry, national origin, religion, creed, service in the uniformed services (as defined in state and federal law), veteran status, sex, sexual orientation, marital or family status, pregnancy, pregnancy-related conditions, physical or mental disability, gender, perceived gender, gender identity, genetic information or political ideas. Discriminatory conduct and harassment, as well as sexual misconduct and relationship violence, violates the dignity of individuals, impedes the realization of the university's educational mission, and will not be tolerated.
- Gender-based sexual harassment, including sexual violence, are forms of gender discrimination in that they deny or limit an individual's ability to participate in or benefit from University programs or activities. These policies shall not be construed to restrict academic freedom at the university, nor shall they be construed to restrict constitutionally protected expression. The policy is coded in [University Policy #1005](#).