

CS418/518: Web Programming Syllabus

Fall 2020

Instructor and Course Information

Instructor Jian Wu	Email jwu@cs.odu.edu	Office Location & Hours Zoom, 3-4 pm, T/R
Class Time 1:30 pm - 2:45 pm, T/R	First Class Date Tuesday, 9/1/2020	Last Class Date Thursday, 12/10/2020
Prerequisites CS312: Internet Concepts; CS330: Object-Oriented Programming and Design.	Office Hours 3:00 pm - 4:00 pm, 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 will use *Laravel*, one of the most popular free and open source frameworks to develop a customized web application using the Model-View-Controller architecture. Prerequisites include Web familiarity, programming knowledge, and database experience.

Successful students will be proficient in LAMP stack development and its relationship to 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 function. Students will make progressive milestones based on the instructor's specified features. The course will focus on writing good code based both on best practice. We will use git for version control via GitHub and project submission.

Part of the course materials were adapted from the Fall 2018 offering from Dr. Justin Brunelle.

Course Delivery Method

Due to the health concerns amid the COVID-19 pandemic, this course will be held on ZOOM sessions for the whole semester. Slides will be available. Recording will not be available. Connection instructions will be sent to students before class begins.

Grading Policy

Students are graded based on the following aspects.

- Attendance: 10%
- Project: 90%
 - Milestone 1: 20% (midway progress: 5%; demo+report 15%)
 - Milestone 2: 20% (midway progress: 5%; demo+report 15%)

- Milestone 3: 20% (midway presentation: 5%; demo+report 15%)
- Milestone 4: 30% (demo+report)

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 2nd 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. Students will be attending network conferences requiring the use of a microphone. Webcams are optional. For both remote access to servers and for network conferencing, a good-quality internet connection is important.

Students will have Zoom installed on their computers. 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, 9/1/2020	Course Introduction	
1	Thursday, 9/3/2020	Web architecture	Assignment 1
2	Tuesday, 9/8/2020	Install LAMP on Windows and Mac	System preparation
2	Thursday, 9/10/2020	Introduction to PHP	Assignment 1 due

Week	Date	Topic	Exercises
3	Tuesday, 9/15/2020	Introduction to MySQL	System preparation due
3	Thursday, 9/17/2020	Introduction to Laravel	
4	Tuesday, 9/22/2020	Milestone 1 specifications; How to make a good presentation	Milestone 1 starts
4	Thursday, 9/24/2020	MVC Architecture	
5	Tuesday, 9/29/2020	Milestone 1 midway presentation	
5	Thursday, 10/1/2020	Web design principles; PHP sessions and Cookies	
6	Tuesday, 10/6/2020	Milestone 1 demo; Milestone 2 specifications	Milestone 1 report due; Milestone 2 starts
6	Thursday, 10/8/2020	CSS and Frontend in Laravel	
7	Tuesday, 10/13/2020	Elasticsearch and Kibana	
7	Thursday, 10/15/2020	Integrating Elasticsearch with Laravel	
8	Tuesday, 10/20/2020	Milestone 2 Demo 1	
8	Thursday, 10/22/2020	Milestone 2 Demo 2	Milestone 3 starts
9	Tuesday, 10/27/2020	Invited talk (Jason Killian)	
9	Thursday, 10/29/2020	File IO; Laravel	
10	Tuesday, 11/3/2020	Election Day Holiday (no classes)	
10	Thursday, 11/5/2020	Input validation; Laravel	
11	Tuesday, 11/10/2020	PHP images; Laravel	
11	Thursday, 11/12/2020	Milestone 3 Demo 1	
12	Tuesday, 11/17/2020	Milestone 3 Demo 2	Milestone 4 starts
12	Thursday, 11/19/2020	Invited talk (Muntabir Choudhury)	
13	Tuesday, 11/24/2020	CAPTCHAs and other APIs	
13	Thursday, 11/26/2020	Thanksgiving Holiday (no classes)	
14	Tuesday, 12/1/2020	Q&A	
14	Thursday, 12/3/2020	Project time	
15	Tuesday, 12/8/2020	Final presentation	
15	Thursday, 12/10/2020	Final presentation	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 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

Homework assignments and reports are due at exactly at midnight on the specified dates. Each student has **one** chance to submit overdue assignments within a grace period of up to 3 days after deadlines without penalty. Students **MUST** provide a reasonable explanation. Submissions after deadlines or beyond grace period are counted 50% of the real score, e.g., if an assignment 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 which 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](#).