



**CS418/518: Web Programming
Fall 2023**

LECTURE01: COURSE INTRODUCTION

DR. JIAN WU

Courtesy: presentation slides from Dr. Justin Brunelle



INTRODUCTION

- Dr. Jian Wu
 - 2018 – present: Assistant Professor of Computer Science
 - 2013 – present: Tech leader of the CiteSeerX project
 - 2017 – 2018: Assistant Teaching Professor at Pennsylvania State University
 - 2011 – 2017: Postdoctoral Scholar at Pennsylvania State University
 - 2011: PhD in Astronomy & Astrophysics
- Research interest: natural language processing and understanding, scholarly big data, information retrieval, digital libraries, science of science
- Looking for motivated undergraduate students to join my research lab

INTRODUCE YOURSELF

- Your name
- Your preferred name
- Which program are you in?
- Your research interest?

WHY TAKING THIS COURSE?

- Most popular programming languages in 2023 according to Berkeley Extension.
- Our class will cover
 - JavaScript
 - HTML
 - CSS
 - SQL
 - Python (a little)
- Our class will also cover
 - PHP
 - Ruby on Rails
- **JavaScript**
- Python
- **HTML**
- **CSS**
- Java
- **SQL**
- NoSQL
- C#
- Rust
- Perl
- Go

HOW TO TAKE THIS COURSE?

- We will cover fundamental materials in class
- Students need to spend 3x time after class to
 - Explore materials beyond what is covered in the class
 - Resolve and solve technical challenges at system and application levels
 - Developing web applications

COURSE CONTENT

- How to build a LAMP-based web application: Linux, Apache, MySQL, PHP, JavaScript, HTML, CSS, and frameworks.
- How to use GitHub for version control
- How to implement searching functionality using Elasticsearch and Kibana



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OTHER SOFTWARE STACKS

- MEAN:
 - MongoDB, Express.js, AngularJS (or Angular), and Node.js
- MERN:
 - MongoDB, Express.js, React.js, and Node.js
- MEVN:
 - MongoDB, Express.js, Vue.js, Node.js
- Why not Node.js/METEOR/MEAN etc.?
 - LAMP Stack developed apps that run on a server, whereas MEAN was explicitly designed to build websites using JavaScript technologies.
 - LAMP Stack will be the best choice as it can also function without MySQL or PHP, which is impossible with the MEAN Stack.

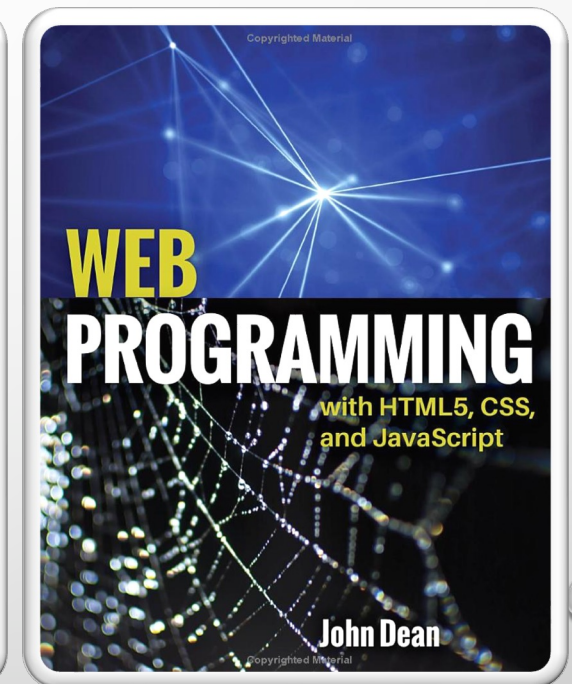
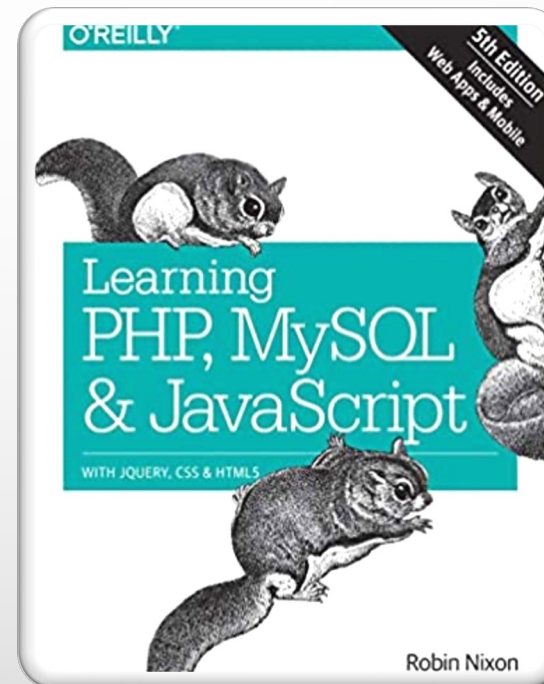
WHY GITHUB?

- Industry standard
- Public!
- Accountability
- Branching/rollback/repository/tracing



COURSE LEARNING MANAGEMENT SYSTEM

- Canvas: canvas.odu.edu
 - For announcement, communication, and assignment submission
- GitHub: <https://github.com/fanchyna/cs418518-f23>
 - For class materials, such as slides, assignments, project specifications , etc.
- Textbooks (not required)
 - [Learning PHP, MySQL & JavaScript: With jQuery, CSS & HTML5 \(Learning PHP, MYSQL, Javascript, CSS & HTML5\) 5th Edition](#) by Robin Nixon
 - [Web Programming](#) by John Dean



HARDWARE AND SOFTWARE REQUIREMENTS

- PC (with Windows 10+) or a Mac (with MacOS 10.14+) capable of hosting software development activities.
- Powershell or other terminal emulators (Windows) or iTerm (MacOS) capable of connecting to a remote server using SSH.
- Web browser: Google Chrome or Mozilla Firefox. The development will be on virtual machines hosted on the CCI-R Environment
- Admin of the machine for software installation.

COURSE OVERVIEW

- Time: 15 weeks (3 holidays, so 27 classes)
- Lectures:
 - Web architecture (1 session)
 - LAMP: install and familiarize LAMP (1 session)
 - PHP (3 sessions)
 - MySQL (1 session)
 - JavaScript (5 sessions)
 - MVC (1 session)
 - Elasticsearch and Kibana (3 sessions)
 - Guest lectures (2 sessions)
 - other topics (3+ sessions)
- Assignment
 - 1 assignment
- Project
 - 2 projects (A and B)
 - 3 milestones for either project

POLICIES

- Attendance policy
- Late submission policy
- Academic integrity
- Copyright
- Disability accommodations
- Discrimination and Harassment (Title IX)

Title IX

"No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance."

A. Kate Couch, Title IX Coordinator

4111 Monarch Way Suite 106 Norfolk, VA 23508

Phone: 757-683-3141 Fax: 757-683-5844

Email: TitleIXCoordinator@odu.edu

<https://www.odu.edu/equity/title-ix>

ADDITIONAL RESOURCES

- W3C: The World Wide Web Consortium is the main international standards organization for the World Wide Web.
- Stack Overflow: Stack Overflow is a question-and-answer site for programmers.
- Waterloo Course Website:
 - Web basics: <https://open.cs.uwaterloo.ca/web-basics/>
 - Web programming: <http://opencs.uwaterloo.ca/web-programming/>
- Git for source control (<https://try.github.io>)

PREREQUISITES


- Course prerequisites:
 - CS330 – OOP and design
 - CS312 – Internet Concept
- Assuming basic HTML knowledge
- Comfortable with working in Linux environment

PREVIOUS COURSE PROJECTS

- Individual project
 - F16: stack overflow
 - F17: slack
 - F18: social media
 - F19: search engine (customized)
 - F20: search engine (ETD or image)
 - S21: Discussion forum of research papers ([Youtube video for an ETD search engine](#))
 - F21: Server status monitor and misinformation labeler ([Youtube video for fake scientific news labeler](#))
 - F22: Figure annotator and digital library search engine with Wiki cards ()



THIS SEMESTER'S PROJECT


- Project: AI-assisted Document Page Annotation Interface (AIDPAI)
 - Individual project for both CS418 and 518 students
 - No collaborations!
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GRADING

- Submissions via GitHub
 - Used for demos and grading
 - Creates a public portfolio
- Feedback/grading during demo
- Deadlines are hard, no extension will be granted without a doctor's note
- No “mercy grade” will be honored.
- Zero tolerance of plagiarism (do not refer to previous reports!)

GRADING OUTLINE

- Attendance: 10%
 - Swipe your card!
 - Assignment: 5%
 - 3 Milestones: 85%
 - Milestone 1: 25%
 - demo: 20%
 - report: 5%
 - Milestone 2: 30%:
 - demo: 25%
 - report 5%
 - Milestone 3: 30%
 - demo: 25%
 - report 5%
 - Extra credits
 - Discussions using packback
 - All features implemented after their original milestones are given only 50% credits.
- All demos are evaluated based on
- Functionality: all links, buttons, text boxes, queries, actions should work
 - Usability: web interface is user friendly and does not contain unnecessary (redundant) operations for users
 - Aesthetics: web interface is designed to look nice



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

GRADING CHART



Grading Chart

Probation occurs when a graduate student's GPA falls below 3.0 ([University policy](#))

Removal of assistantship if GPA falls below 3.0 ([Department policy](#))

This is not an easy "A" class. If you are not ready, please consider taking the course later.

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.**
 - **Cheating**
 - **Plagiarism**
 - **Fabrication**
 - **Facilitation**

CHEATING CONSEQUENCES

- Cheating results in a score of **zero** for your entire milestone. This includes but not limited to
 - Inter-group collaboration
 - Sharing code
 - Passing off open-source code as your own
 - Failing to cite your code “inspiration”
 - Copying other students’ report content

(OCS) OFFICE OF COUNSELING SERVICES OF THE UNIVERSITY

- ODU's Office of Counseling Services (OCS) 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.

SOS (STUDENT OUTREACH & SUPPORT) OFFICE OF COLLEGE OF SCIENCES

- Any student problems and SOS will connect them to the right place, including homelessness and food insecurity.
- Look at the SOS website to see the list of signs of student distress and other resources.
- Email: oducares@odu.edu.
- Available student resources on the College of Sciences web page at: <https://www.odu.edu/sci/student-success>
- The site includes all university resources broken down into tabs for Academic Resources, Tutoring and Mentoring, Counseling and Wellness Services, and Other Success Resources.