CS418/518: Web Programming
Fall 2022

LECTURE00: COURSE INTRODUCTION

DR. JIAN WU

Courtesy: presentation slides from Dr. Justin Brunelle

INTRODUCTION

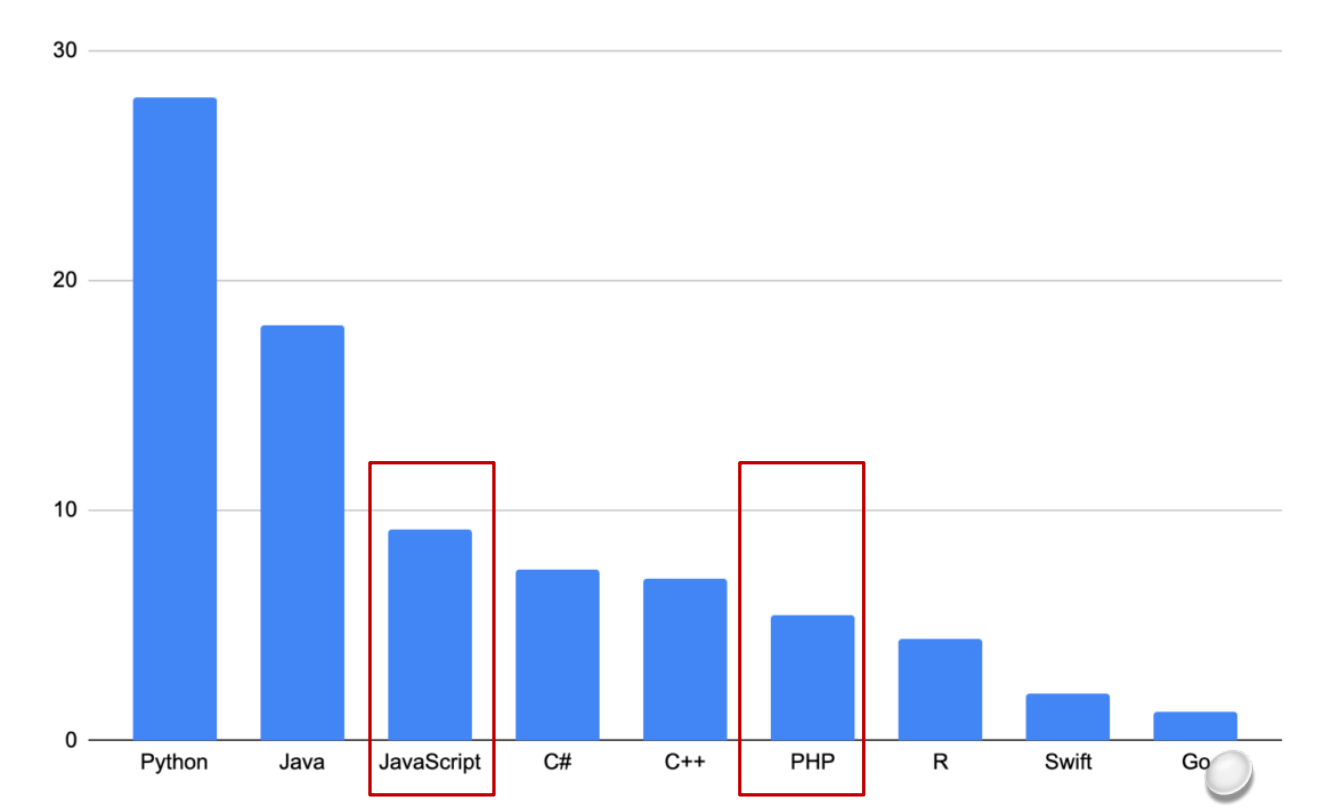
- Dr. Jian Wu
  - 2018 – present: Assistant Professor of Computer Science
  - 2013 – present: Tech leader of the CiteSeerX project
  - 2017 – 2018: Assistant Teaching Professor at Pennsylvania State University
  - 2011 – 2017: Postdoctoral Scholar at Pennsylvania State University
  - 2011: PhD in Astronomy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

COVID-19 POLICY

- Student Health Services will offer COVID-19 testing for asymptomatic and symptomatic students beginning Monday, August 29, 2022. Students may schedule a COVID-19 testing appointment via the Monarch Wellness portal at https://odu.edu/studenthealth/monarch-wellness-portal. Walk-ins are available on a first-come, first-served basis.
- Masking is optional unless otherwise noted.
- Students participating in clinical experiences and/or course labs are required to comply with the COVID-19 policies and procedures of their assigned clinical and/or lab site.
- Persons with a recent confirmed exposure should wear a well-fitting mask for 10 days when indoors and should receive testing at day five or greater after exposure and sooner if symptomatic: regardless of vaccination status.
- If you test positive, do not attend classes, work, or events at ODU for five days or as long as you are sick.
- Students should contact Student Outreach and Support at ODUCares@odu.edu for assistance with notification to instructors regarding an extended absence of a week or more due to extenuating circumstances (medical, death in immediate family, etc.).
- See the full policy at: https://www.odu.edu/status/covid-19#.YwzNLOzMKAo

WHY TAKING THIS COURSE?

- Most popular programming languages in 2022 according to PYPL Popularity index.
- A great article justifying that PHP is not dying: https://medium.com/geekculture/is-php-a-dying-language-2cea47e2196d

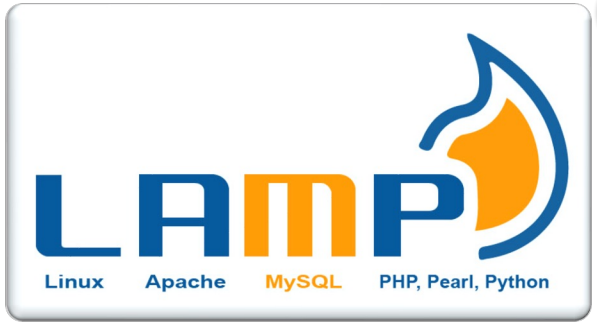


HOW TO TAKE THIS COURSE?

- 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 applications for their projects

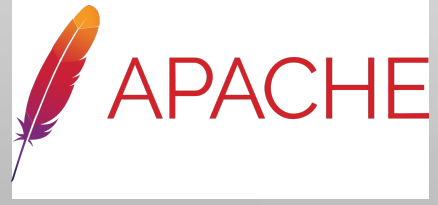
COURSE CONTENT

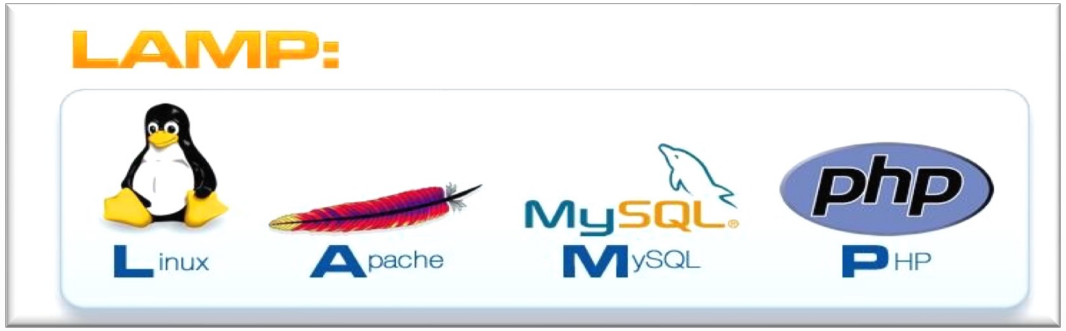
- How to build a LAMP-based web application: Linux, Apache, MySQL, PHP, JavaScript, HTML, CSS, and frameworks.
- How to use GitHub for version control
- How to implement searching functionality using Elasticsearch and Kibana



JavaScript

elasticsearch





WHY LAMP?

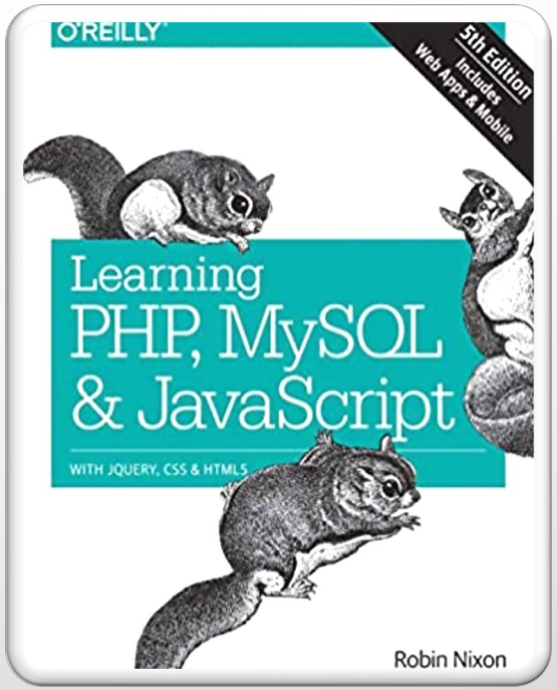
- Standard, well documented stack
- Teaches web design fundamentals
- Open Source
- Why not Node.js/METEOR/MEAN etc.?
  - Recently popular technologies
  - LAMP principles translate natively to these technologies

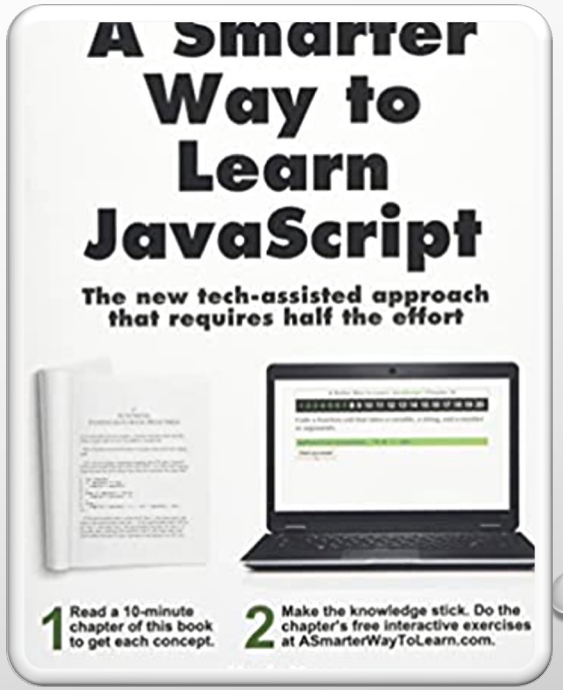
WHY GITHUB?

- 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/lamps-lab/cs418518-f22
  - 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
  - A smarter way to learn JavaScript by Mark Myers





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 Academic Environment
- For online students. Microphone, speaker, and webcam. Zoom installed. A good-quality internet connection is important.
- Admin of the machine for software installation.

COURSE OVERVIEW

- Time: 15 weeks (3 holiday, so 27 classes)
- Lectures:
  - Web architecture (1 session)
  - LAMP: install and familiarize LAMP (1 session)
  - PHP (4 sessions)
  - MySQL (1 session)
  - JavaScript (4 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)
  - Milestone 1-3
  - Milestone 3 is the final milestone

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."

University Title IX Coordinator

Ariana Wright, Interim 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

TEACHING ASSISTANT

- Muntabir Choudhury (PhD student)
- Office hour: Tuesday and Thursday noon
- Zoom: https://odu.zoom.us/j/93588258696

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: http://opencs.uwaterloo.ca/web-basics/
  - Web programming: http://opencs.uwaterloo.ca/web-programming/
- Git for source control (https://try.github.io)

PREREQUISITES

- Course prerequisite:
  - CS330 – OOP and design
  - CS312 – Internet Concept
- Assuming basic HTML and CSS experience
- 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)

THIS SEMESTER'S PROJECT

- Project A: Figure Annotation Interface
- Project B: Digital library search engine with Wiki-cards

GRADING

- Submissions via GitHub
  - Used for demos and grading
  - Creates a public portfolio
- Feedback/grading during demo and by email
- 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%
- Assignment: 5%
- 3 Milestones: 85%
  - Milestone 1 demo: 20%
    - Functionality+Usability and aesthetics
  - Milestone 1 report: 5%
  - Milestone 2: 30%:
  - Milestone 3: 30%
- Extra credits
  - Additional features (evaluated on case by case)
- If features are implemented after the milestone it belongs to, only 50% credits will be given.

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

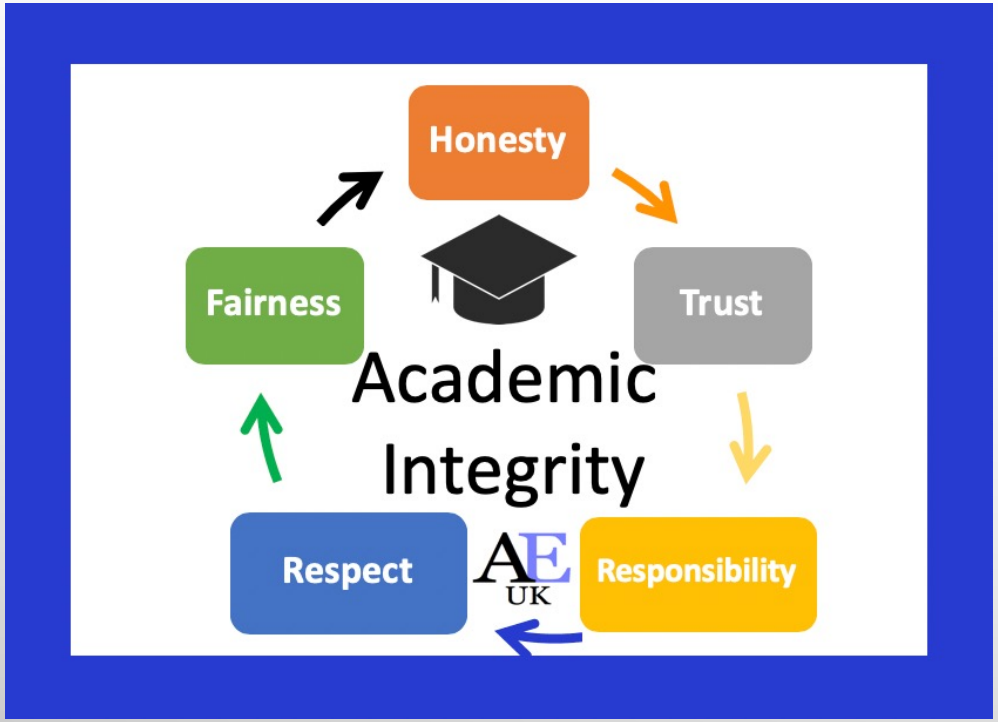
Grading Chart

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 (30% off). 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 ODU

- 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.