Web Application Development: Course Syllabus

Department of Computer Science, Michigan State University, Course Number 477, Asynchronous Instruction, Spring Semester, 2022

Course Staff

Instructor

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Teaching Assistants

See here for teaching assistant contact information.

Course Materials

This is an online course. All official course materials will be made available online at https://gitlab.msu.edu/cse477-spring-2022. This course does not use desire2learn. If you can not access the course repository, please contact a member of the course staff. The contents of the course require a login using an MSU ID and password.

Course Description

Description

This course provides an overview of contemporary techniques, and tools used for web application development. More specifically, this course covers the three essential technology components of web applications (frontend, backend, and databases), as well as the internet technologies used to host, distribute, and scale web applications. A list of key topics include:

- How the internet works, internet protocols, domain name servers, web hosting, HTML, CSS, Javascript, conventions and best practices, DOM manipulation, Python Flask, sessions, cookies, relational databases, NoSQL Databases, database optimization, containerization, version control systems, APIs and Micro-services.

Objective

Students completing this course are expected to be able to:

- Understand the unique aspects of web application design.
- Work in resource sensitive and resolution variant environments.
- Apply common patterns in web development.

Prerequisites and Requirements

Students are assumed to have taken: CSE 320 or CSE 331 or CSE 335. Students are also assumed to have access to a working personal computer or university laboratory computer where they can perform the assignments and engage with the course content. Also, please note that this course assumes that you are familiar with:

- **Unix**: Ideally, you should have access to a `Unix`-friendly computational environment (MacOS, Ubuntu, RedHat, etc.). I don't know enough about Windows to be able to support you if you face issues in that OS.
- **Python**: You should have basic familiarity with `Python3`, and package management tools including the `pip` package manager.
- **Git**: You should have basic familiarity with `Git`; specifically: `clone`, `add`, `pull`, `commit` and `push`.
- **Markdown**: You have some basic familiarity with `Markdown` files and how to read/edit them.

Assignments and Grading Policy

All assignments will be submitted through the course Gitlab repository. All submissions must contain functioning, commented code as well as a Docker file that generates the container needed to run the code. **Non-functional code will receive no credit.** Late assignments will not be accepted without prior written permission that is obtained at least 48 hours in advance of the deadline. Assignments that are incomplete by the deadline will receive no credit.

Grading Scale

Percentage	Course Grade
89.5 - 100.0	4.0

Percentage	Course Grade
84.50 - 89.49	3.5
79.50 - 84.49	3.0
74.50 - 79.49	2.5
69.50 - 74.49	2.0
64.50 - 69.49	1.5
59.50 - 64.49	1.0
0.00 - 59.49	0

Additional Information

Special Needs and Circumstances

If you have documented special needs or circumstances, we are happy to work with you. However, it's important that you let us know about these needs at the start of the class.

Cloud Credits

The $50 cloud credits that are made available through this course should be sufficient to handle all costs associated with the course, and are to be used for the course exclusively. If a student expends their cloud credits prematurely (for any reason) it will be the responsibility of the student to provide another payment method to cover cloud-related course expenses.

Academic Misconduct

Any evidence of academic misconduct will result in an automatic failing grade in the course. Please see here for MSU's definition of academic misconduct. You may discuss assignments in general terms with your classmates, the course staff, or the instructor, but you are not permitted to receive solutions from others (including the course staff) or to read or copy part or all of another person's solution to a problem.

Sharing and Commercialization

Sharing and or Commercialization of course materials without prior written permission is not permitted. Posting of course materials, assignments, or solutions to any public or paid websites is strictly prohibited and may lead to disciplinary and/or legal action.

Disruptive Behavior

Article 2.3.5 of the Academic Freedom Report (AFR) for students at Michigan State University states that "The student's behavior in the classroom shall be conducive to the teaching and learning process for all concerned." Article 2.3.10 of the AFR states that "The student has a right to scholarly relationships with faculty based on mutual trust and civility." General Student Regulation 5.02 states that "no student shall . . . interfere with the functions and services of the University (for example, but not limited to, classes . . .) such that the function or service is obstructed or disrupted. Students whose conduct adversely affects the learning environment in this classroom may be subject to disciplinary action through the Student Faculty Judiciary process.