

CSCI 421: Adv. Web Development

Jingnan Xie

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Course Information

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Office: Roddy 142

Office Hours:

Mon 12:00 AM–1:00 PM, 3:00 PM–4:00 PM

Tue 3:00 PM–4:00 PM

Wed 11:00 AM–1:00 PM

Fri 12:00 PM–1:00 PM

Lecture:

MF 11:00AM – 11:50AM, T 10:00AM – 11:50AM

Classroom: Roddy 147

Feel free to contact me through email or phone.

Course Description

Introduction to building advanced web applications using modern approaches and technologies. Course instructs on development of responsive web applications using current industry-leading technology stacks and cloud-based services. Topics include asynchronous programming, an overview and use of cloud services, review of popular full stack technology, and development of real data-driven web applications using learned technologies.

Prerequisite(s): Grade of C- or better in both CSCI 362 and CSCI 366

Course Outcomes

At the end of this course, a successful student will be able to

1. Design and develop three-tier web applications using modern technology stacks.
2. Compose basic, database-driven web applications quickly, in the cloud, using several different technology stacks.
3. Evaluate and decide which technology stack to adopt for an application based on various requirements such as scalability, performance, and extensibility.
4. Differentiate traditional web development practices and modern-day web application technology stacks.
5. Understand the basic anatomy of client-side web applications (UI), the technologies used to comprise them, and how to extend the UI to adopt new features.

6. Implement secure API endpoints for authentication, logout, and actions (including role management).
7. Describe and apply various components and terms related to asynchronous programming such as futures, promises, deferred execution, and language constructs such as await/async.

Textbook

- *Note:* The textbook is optional but recommended
- *Web Development with Node and Express: Leveraging the JavaScript Stack* Ethan Brown, O'Reilly Media Inc, Second Edition, 2019. ISBN: 978-1492053514

Course Policies

Responses

I will respond to emails within 24 hours unless an exception is noted through email, D2L, or in class. Please note that this means if you email me the night before an exam or assignment submission, I am not guaranteed to respond. Start labs when they are assigned.

Announcements

I will frequently post announcements through email and new/additional material on D2L. Under inclement weather, due dates may be pushed back or changed at my discretion, so please pay attention to all announcements.

D2L (Desire2Learn)

I will use D2L as the grade and submission portal for classes. Lecture material and notes are also accessible through D2L.

Office Hours

I hold office hours for your benefit. Please do not hesitate to show up to office hours! If you find that my office hours do not fit your schedule, let me know so we can arrange for a time that does work.

My Expectations of Students

- Arrive prepared and on time for class
- Engage in active discussion during lecture
- Ask questions. Do not hesitate to clarify a concept
- Do your best work and be confident in your abilities
- Check email frequently for announcements and additional information
- Adhere to Millersville University's Academic Honesty Guidelines

Lecture

Attendance of the lecture is mandatory. I encourage everyone to make an active attempt toward participating. There are times where many examples throughout the lecture are better suited to be done with pen and paper. Please refrain from using your computer for any other reason than note-taking/class-taking. I also do not expect to see any mobile phones in use during class.

Laboratory

Attendance of any laboratory component is also mandatory. Assignments will be given and will most likely take more time to complete than the lab period. You are permitted to leave the lab period if and only if you have completed the assignment. **Missing lab periods will result in a 2% grade reduction per occurrence**

Grading Policy

- 10% of your grade will be determined by your attendance during the semester
- 15% of your grade will be determined by one midterm project
- 35% of your grade will be determined by laboratory and homework assignments
- 40% of your grade will be determined by the final project
- Up to 2% will be added to your grade *at the professor's discretion* based on active participation during lecture and laboratory periods.

I will grade on a ten-point grading scale. I will round any grades. An 89.51 will be classified as a A-.

≥ 93	≥ 90	≥ 87	≥ 83	≥ 80	≥ 77	≥ 73	≥ 70	≥ 67	≥ 63	≥ 60	< 60
A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F

YOU MUST ATTEMPT ALL EXAMS, HOMEWORKS, AND ASSIGNMENTS TO PASS THE COURSE.
YOU MUST EARN AT LEAST A 70% ON THE FINAL PROJECT TO EARN A C- IN THIS COURSE.

Labs

Labs will have a grading turnaround time of one (1) week from the due date. Lab grades can only be contested for up to one week from when the grade is posted on D2L. **Three grace days** will be provided throughout the semester without penalty. **Otherwise, no late submissions will be permitted.**

University Policies

Academic Dishonesty Policy

- **Things you may do:**
 - Discuss approaches to solving a problem, as long as the discussion remains **above the level of detail** expected for the course.
 - Seek aid in resolving compiler messages.
 - Email me or visit me during office hours.
 - Go to tutoring to ask about theoretical concepts
- **Things you may not do:**
 - Copy a code fragment verbatim
 - Copy a code fragment and rename variables
 - Visit any website with purchasable solutions (e.g. Chegg)
 - Post to or visit websites with resources to problems (e.g. StackOverflow)
 - Obtain any solution on open repositories (e.g. GitHub)
 - Obtain a solution from someone who has previously taken the class

Obtaining a solution on the Internet or elsewhere and submitting it as your own work is plagiarism and will result in severe disciplinary measures. Be sure you can explain every line of every program you submit. **Writing code is no different than writing a paper — if it was not your original idea, then you should not submit it as your own work.** If you have to question whether or not something is acceptable, it is likely **not** acceptable.

Title IX

Millersville University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to meet this commitment, comply with Title IX of the Education Amendments of 1972, 20 U.S.C. §1681, et seq., and act in accordance with guidance from the Office for Civil Rights, the University requires faculty members to report to the University's Title IX Coordinator incidents of sexual violence shared by students. The only exceptions to the faculty member's reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project. Faculty members are obligated to report to the person designated in the University Protection of Minors policy incidents of sexual violence or any other abuse of a student who was, or is, a child (a person under 18 years of age) when the abuse allegedly occurred.

Information regarding the reporting of sexual violence, and the resources that are available to victims of sexual violence, is available at <http://www.millersville.edu/sexualviolence/index.php>

Counseling Resources

Students sometimes face mental health or drug/alcohol challenges in their academic careers that interfere with their academic performance and goals. Millersville University is a caring community and resources are available to assist students who are dealing with problems. The Counseling Center (717-871-7821) is an important resource for both mental health and substance abuse issues. Additional resources include: Health Services (871-5250), Center for Health Education & Promotion (871- 4141), Campus Ministries, and Learning Services (717-871-5554).

Planned Course Schedule¹

- Week 01, 08/22 - 08/26:** Introduction, Basic HTML and CSS, [Basic HTML and CSS Lab](#)
- Week 02, 08/29 - 09/02:** Layout, Images, [Lab Time](#), [More on CSS Lab](#)
- Week 03, 09/05 - 09/09:** Tables and More on CSS, [Tables Lab](#)
- Week 04, 09/12 - 09/16:** Forms and More on CSS, [Lab Time](#), [Forms Lab](#)
- Week 05, 09/19 - 09/23:** Intro to JavaScript, [Project 1: Static Websites](#)
- Week 06, 09/26 - 09/30:** Case Study: Rock, Paper, Scissors,
- Week 07, 10/03 - 10/07:** Case Study Continued, [Project 2: rock paper scissors lizard spock](#)
- Week 08, 10/10 - 10/14:** Intro to MRAN stack, [Lab Time](#), [Project 2 Due](#)
- Week 09, 10/17 - 10/21:** Case Study: User Authentication, [Lab Time](#), [Login Lab](#)
- Week 10, 10/24 - 10/28:** Case Study: Registration, [Register Lab](#)
- Week 11, 10/31 - 11/04:** Case Study: Bookstore, [Main Page Lab](#)
- Week 12, 11/07 - 11/11:** Case Study: Shopping Cart, [Lab Time](#), [Shopping Cart](#)
- Week 13, 11/14 - 11/18:** Shopping Cart Continued, [Shopping Cart](#)
- Week 14, 11/21 - 11/25:** Thanks Giving Break
- Week 15, 11/28 - 12/02:** Final Week, [Final Project: Little Amazon](#)

¹Subject to change