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CSCI 322.01: Advanced Web Application Development

Melissa E. Holmes University of Montana, Missoula, melissa.holmes@umontana.edu

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CSCI 322 Advanced Web Application Development Spring 2022



Class meets:	Mondays at 10:00 a.m. via Zoom:	https://umontana.zoom.us/j/95763128092

Instructor:Dr. Melissa Holmesemail:melissa.holmes@umontana.eduoffice:https://umontana.zoom.us/my/melissaholmesoffice hours:By appointment

Course Description: CSCI 322 is designed to provide a solid understanding of full stack web development. The class attempts to provide an appropriate mix of theory and practice to enable students to successfully develop websites using a variety of tools and technologies. Web technologies change quickly and frequently, and a solid understanding of the fundamentals will future-proof your skills. Students will be required to use client-side and server-side programming languages, implement the three-tier architecture, and use several contemporary web technologies.

Student Learning Outcomes: Upon the successful completion of this class, students will be able to:

- 1. articulate and demonstrate the use of a three-tier architecture;
- 2. analyze and articulate goals, audience and constraints of a web project;
- 3. describe web usability and accessibility concerns, and design websites that address those concerns;
- 4. map tools, development techniques and business processes effectively to a web architecture;
- 5. design and develop a web-based application using a variety of web languages and tools that interact with each other;
- 6. demonstrate the use of multiple web languages and development tools at a high level of proficiency:
- identify, locate, install, describe, use and evaluate tools commonly used for web development and deployment, including a browser with code inspection tools, Web server, PHP interpreter, Database management systems, Analytics software, Image creation/editing software, IDE/development tools; and
- 8. evaluate the success of projects using internal and external measures.

Grading:

Short assignments	40
E-commerce site	50
Final portfolio of projects	10

Textbook:

None required. A variety of online resources will be used.

Accommodations:

Students who need any type of accommodation should work with Student Disability Services and provide appropriate documentation as soon as possible.

Academic Dishonesty:

You are encouraged to work in teams and use many resources including books and the Internet. However, each student must turn in his/her own work, and each student is responsible for understanding anything that is turned in. Refer to the Student Conduct Code for more information regarding plagiarism and cheating.

Course Schedule (subject to change)

Week	Topics and Activities	
1	No class Monday	
Jan. 16-22	Syllabus and Introductions, tools, student web server, "Hello World" web page	
2	Three-tier architecture, Usability and accessibility concerns, prototyping	
Jan. 23-29	techniques, validation tools	
	E-commerce prototype project, HTML forms	
3	HTML forms and client-side validation, the DOM	
Jan. 30 – Feb. 5	E-commerce prototype project	
4	PHP intro and paradigm, I/O, variables and data types, concatenation, arrays,	
Feb 6 - 12	control structures	
	Small PHP programming problems	
5	Begin three-tier architecture project	
Feb. 13 - 19	Using PHP with HTML (output to browser, form data)	
	Expand on E-commerce project	
6	No class Monday	
Feb. 20 - 26	More PHP, project work	
7	More PHP, project work	
Feb 27 – Mar. 5		
8	Database Design	
Mar. 6 - 12	MySQL on student web server, tables and queries	
9	MYSQL and PHP, project work	
Mar. 13 - 19		
10	Spring Break, no classes	
Mar 20 - 26		
11	Demo Ecommerce project	
Mar. 27 – Apr. 2	JQuery	
12	Demo JQuery project	
Apr. 3 - 9	NodeJS	
13	Demo NodeJS project	
Apr. 10 - 16	SASS	
14	Demo SASS project	
Apr. 17 - 23	REST API	
15	Demo REST API project	
Apr. 24 - 30	Cloud Services	
16	Cloud Services report / project	
Apr. 19 – 23	Work on final portfolio	
16	Demo final portfolio	
May 1 - 7		