COSC 3900

Topics: Client-Side Web Programming

MWF 9:00am-9:50am, EN 4059

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This syllabus is tentative and subject to change, but only with explicit notification.

Course Description: Building web applications is a challenging task, because it combines many different skills. This course will teach you how to build web applications from the perspective of the web browser. We will cover HTML5, the latest version of the HTML language, which is what web browsers use to display web pages. We will also cover CSS3, the most recent version of the Cascading Style Sheets specification, which tells web browsers how to render elements in an HTML page—HTML says what elements should be in the page, and CSS says how those elements should look. We will also learn Twitter's Bootstrap framework, which is a collection of specialized CSS markups. Bootstrap simplifies the task of writing HTML pages that look good in many different browsers, including smartphones, via responsive design. After learning HTML and CSS, you will be able to create beautiful web pages. This is the goal for the first half of the course.

In the second half of the course, you will learn JavaScript and jQuery. JavaScript is a computer language that is implemented by all web browsers, and this will allow you to create web pages that interact with the user. For example, you can write a web page that displays different images based on a user selection. jQuery is a library (written in JavaScript) that simplifies many common interactivity tasks, such as moving or highlighting page elements. jQuery also makes it possible for a web page to communicate with a web server in order to retrieve more information. Many modern web applications are designed in this way, using what are called Ajax technologies. We will see how the web pages use Ajax technology to communicate with servers, but we will not cover web application development—that is the topic of another course.

Prerequisite(s): COSC 1010 or equivalent programming experience.
Credit Hours: 3
Texts:

- *Murach's HTML5 and CSS3*, by Zak Ruvalcaba and Anne Boehm. Murach. 1st Edition. 2012.

- *Murach's JavaScript and jQuery*, by Zak Ruvalcaba and Mike Murach. Murach. 1st Edition. 2012.

Specific Course Objectives:

After completing this course, students will be able to:

1. Design and implement layout of a web page.
2. Populate a web page with typical components, such as navigation bars, text fields, menus, etc.
3. Build web pages that are responsive.
4. Build web pages that respond to user actions, such as dragging and dropping elements.
5. Build web pages that interact with a back-end server.

Grade Computation:

Grade Component	% Weight
Class Participation	10%
Assignments	15%
Project	30%
Exam #1	15%
Exam #2	15%
Final Exam	15%

Course Policies:

- **General**

  - Computers, tablets, phones, and other electronic devices are not to be used in class unless you are instructed to do so.

  - Exams are closed book, closed notes.

- **Grades**

  - Grades in the **C** range represent performance that **meets expectations**; grades in the **B** range represent performance that is **substantially better** than the expectations; grades in the **A** range represent work that is **excellent**.

  - Grades will be maintained in WyoCourses. Students are responsible for tracking their progress by referring to the online gradebook.

  - If you feel I have misgraded one of your assignments or exams, bring this to my attention within one week of receiving your graded assignment or exam. I will not reconsider grades after this period.

- **Attendance**

  - Attendance to class is mandatory. Moreover, *participation* in class is essential. You should read the assigned material before class and come prepared to discuss it in class.

- **Assignments**

  - All assignments should be completed and turned in by classtime on the due date. You may turn in assignments late, but you will lose 10% of the maximum points for every (fractional) weekday that you turn it in late. For example, if the assignment is due on Monday at 1pm, but you can't get it to me until Thursday at 3pm, you will be lose 40% of the possible points. If you get it to me by Thursday at 12pm, you will lose only 30% of the points.

- I use the WyoCourses course management system. When the course starts, log on to WyoCourses and make sure you can see the course materials. Also, edit your profile and include a picture (of yourself)—this will help me get to know you. All handouts and assignments will be made available through WyoCourses, and assignments will be submitted via WyoCourses. Assignments should be in PDF format. If you do the assignment in a different format, convert it to PDF before submitting.

- Make sure all the work that you turn in to me for grading is your own and not somebody else's. You may discuss your work with others in the class, and you may collaborate to figure out how to do an assignment. But the actual work you turn in to me must be your own. I.e., learn with others if that works for you, but do your own work in the end.

  I take a very dim view of academic dishonesty. If I do discover that you are engaging in an act of academic dishonesty, I will give you a zero for that assignment. I will also deduct a letter grade from your final score (so if you get a 95%, I will mark it as a B, an 85% as a C, and so on), *regardless of the severity of the infraction.* Further, I will pass the matter on to the Dean's Office, following the procedures outlined in UW Regulation 6-802. Note that according to the UW General Bulletin any form of academic dishonesty is unacceptable to our community and will not be tolerated. UW regulation 6-802 and other UW regulations can be found at `http://www.uwyo.edu/generalcounsel/new-regulatory-structure/index.html`

- **Makeups:**

  - I prefer that you take exams at their assigned time, but I understand that this is not always possible. If you do have to miss an exam, let me know as soon as possible, so we can arrange a makeup date. I will give you the makeup in the anteroom to my office, where I will proctor it. I will not allow the makeup exam to be taken at any other place or to be proctored by someone else. Also, be advised that my makeup exams are often more difficult than the regular exams.

  - Once you start taking an exam, you may not leave the room for any reason (including phone calls, bathroom breaks, or leg stretching) until you turn in the exam. If it's an emergency, then you have no choice but to turn in the partially completed exam for grading. At my discretion, I may allow you take a makeup exam later.

- **Office Hours and Email:**

  - If you have any problems with the course material, or if you just want to chat, I'm more than happy to meet with you in person. I prefer that you come to see me during my scheduled office hours. However, if those hours prove inconvenient, we can make an appointment. Drop me an email with some suggested meeting times, and I'll get back to you.

  - Email is a wonderful mechanism for communication, and I prefer it over many other forms, such as phone messages. If you have a question about the course material, feel free to send me an email or contact me via WyoCourses. I may answer your question directly, or I may ask you to come talk about it, if I feel the explanation requires such interaction.

    However, email is a medium that makes it easy to miscommunicate. Therefore, I will not use email to make any changes in course policy. If you need to discuss one of the course policies with me (e.g., if you want me to waive a policy because of a specific situation),

you must come see me in person. Any changes to the written course policies will be made *in writing.*

Tentative Course Outline:

The weekly coverage might change as it depends on the progress of the class. However, you must keep up with the reading assignments.

Table 1: Very Tentative Class Schedule

Week	Readings
1. 9/1–9/5	• Note: Labor Day: No class on Monday • HTML Chapter 1: Introduction to web development
2. 9/8–9/12	• HTML Chapter 2: How to code, test, and validate a web page • HTML Chapter 3: How to use HTML to structure a web page
3. 9/15–9/19	• HTML Chapter 4: How to use CSS to format the elements of a web page • HTML Chapter 5: How to use the CSS box model for spacing, borders, and backgrounds
4. 9/22–9/26	• HTML Chapter 6: How to use CSS for page layout • Getting started with Bootstrap: Basic template & Examples, `http://getbootstrap.com/getting-started/`
5. 9/29–10/3	• Note: Exam #1 • HTML Chapter 7: How to work with links and lists • HTML Chapter 8: How to work with images
6. 10/6–10/10	• HTML Chapter 9: How to work with tables • HTML Chapter 10: How to work with forms
7. 10/13–10/17	• HTML Chapter 11: How to add audio and video to your web site • HTML Chapter 12: How to format web pages for printing
8. 10/20–10/24	• jQuery Chapter 2: Getting started with JavaScript • jQuery Chapter 3: How to work with objects, functions, and events
9. 10/27–10/31	• jQuery Chapter 4: How to test and debug a JavaScript application • jQuery Chapter 5: How to work with arrays
10. 11/3–11/7	• jQuery Chapter 6: How to script the DOM with JavaScript • jQuery Chapter 7: Get off to a fast start with jQuery
11. 11/10–11/14	• jQuery Chapter 8: How to use effects and animations • jQuery Chapter 9: How to use the DOM manipulation and traversal methods
12. 11/17–11/21	• jQuery Chapter 10: How to work with forms and data validation • jQuery Chapter 11: How to create and use plugins
13. 11/24–11/28	• Note: Exam #2 • Note: Thanksgiving Break: No class on Wednesday or Friday
14. 12/1–12/5	• jQuery Chapter 14: How to use Ajax, JSON, and Blogger
15. 12/8–12/12	• jQuery Chapter 15: How to use the APIs for YouTube, Twitter, and Flickr • jQuery Chapter 16: How to use the API for Google Maps