CSE 383 Web Application Programming
Spring 2019

Instructor and office:	Alberto Castro-Hernández, castroa@miamioh.edu Benton 017
Course website:	Canvas (homework, online quizzes, grades)
Office Hours:	**Monday: 2:30 pm - 4:30 pm – (Benton 017)** **Wednesday: 02:30 pm - 4:30pm – (Benton 017)** To talk about homework, questions about the class, and so on. In case of any conflicts, I shall work with you to arrange a time that fits our schedules.
Important resources:	Web Programming (first chapter "Introduction to Web Programming", Zybooks). See instructions below. w3schools
Software (free):	*NetBeans 8.2, Chrome (and other browsers)*

Meeting Times

Lectures	**Monday**	**Monday**
Sections	A, B	C, D, E
Class Meeting Time	8:30 am – 9:50 am	11:40 am - 1:00 pm
Venue	270 Engineering Building	102 Benton Hall

Labs	**Wednesday**		**Friday**		
Sections	A	C	B	D	E
Class Meeting Time	8:30 am - 9:50 am	11:40 am - 1:00 pm	8:30 am - 9:50 am	11:40 am - 1:00 pm	1:15 pm - 2:35 pm
Venue in Benton Hall	006	006	024	024	024

Help sessions	**Wednesday**	**Friday**
All sections	6:30-8:30 pm	6:30-8:30 pm
Venue in Benton Hall	002	006

Web Application Programming

An introduction to the software, concepts and methodologies necessary to design and implement web applications. Students will design and construct web applications utilizing remote servers on multiple platforms. Projects will be used to enable the students to apply the principles and techniques presented in class.

Learning Outcomes

1. Describe technologies used to implement web applications

1.1. Describe the nature of the web applications, frameworks and their various architectures including the role of the client (JavaScript programs) and backend servers.
1.2. Describe and utilize web protocols of HTML, HTTP/SPDY (2.0), CSS, JSON, XML.
1.3. Create modern web applications using responsive design technologies that include well designed HTML, CSS, JavaScript and AJAX calls.
1.4. Describe and use JavaScript programming to create web applications.
1.5. Create interactive web applications using forms and other user input methods to gather and present data in interactive settings.

2. Implement web applications utilizing contemporary technologies and tools

2.1. Implement web applications using AJAX and related back end server support.
2.2. Develop responsive design-driven programs.
2.3. Describe concepts related to using databases, both relational and non-relational.
2.4. Use concepts of MVC and templating in the creation of web applications.

3. Describe and create programs that utilize proper error and security procedures as related to web applications

3.1. Describe and implement common error handling conditions as they relate to networked programming.
3.2. Describe security handling conditions that must be tested and handled by programs.
3.3. Describe security concerns relating to communication protocols such as HTTPS including strengths and weaknesses. Students will be able to implement and test situations using https.
3.4. Implement programs that properly catch, handle and recover from errors.

Important Dates

Monday, Jan 28	Classes begin
Thursday, Feb 14	Last day to drop this course (no grade assigned)
Tuesday, Feb 26	**Exam 1**, 7:00-9:00 pm Room BEN 102
March 25-31	Spring Break (**No classes**)
Monday, Apr 8	Last day to withdraw from this course (course grade will be “W”)
Wednesday, Apr 10	**Exam 2**, 7:00-9:00 pm Room BEN 102
Saturday, May 11	Last day of class
May 13-17	**Final exam, TBA**

Course Policies

Attendance - Read carefully

- Course grade decreases by 3% for each absence beyond 3 (*this is in addition to any deductions due to missed in-class labs/activities*). This means, for example, that if your final grade in the course would have been a 95%, but you missed 5 days of class, your final grade would be reduced to 89% (95% - 3% - 3%). Note that absences count for *any reason*. You essentially get three absences that do not count against you. If you miss because you are sick, or sleep in, or have a job interview, and so on, those are all considered "absent".
- More than ten minutes late = half absence
- I reserve the right to drop you from the course if you miss more than 4 days. If you cannot afford to be dropped from the course, then do not miss more than 4 days.
- In case of an absence:
  - inform me beforehand, if possible
  - submit on time any work that is due
  - understand that there are no make-ups for missed labs, quizzes, exams or other in-class work
- Regarding the idea of "excused" absences, the following excerpt is from Miami's Student Handbook:

  "There are no University-recognized excused absences except for religious observances that require absence from a class session and other required class activities. Students must give written notification to their instructor within the first week of each full-term or sprint class of the religious event that prohibits class attendance and the date that will be missed, if officially known."

E-mail and Announcements

Regularly check the course website (http://miamioh.instructure.com) and your *Miami* e-mail for announcements.

Resources (part of your participation grade)

Keep up with the reading and work through the activities provided by the instructor. Answer online quiz questions.

Taking Notes

Taking notes during lectures is essential because the lab activities will often depend on what you wrote in your notes. Be selective and focus on writing sample code, diagrams, "notes to self".

Participation

Participation means

- Keeping up with the reading.
- Asking questions in class and complete on-line quizzes.
- Volunteering answers to questions in class (quizzes, in-class activities).
- Encouraging others to get involved.
- Contributing to online discussions (asking good questions, helping provide answers, not posting code).
- Helping other students during labs.

Graded Work

You are expected to review your graded materials promptly when returned to you. If you have a question regarding grading on a particular assignment, you have seven days (from the date grades are released) to bring the matter to the attention of the Teaching Assistant who graded that assignment. If after discussing the issue with the Teaching Assistant, you still need help, please contact the instructor.

Learning activities

Lecture Quizzes (Participation)

- These quizzes are mostly based on the week's topic.
- Quizzes are usually due on the day of the lecture.
- There are no make-ups for missed quizzes.

Homework

- Roughly 14 assignments, typically programming assignments
- Assignments submitted late will be penalized. They will receive 50% of the obtained grade. An assignment can be submitted a maximum of one day late i.e. 24 hours after the due date.
- Must be submitted using Canvas on-time, using the turn-in feature of the appropriate assignment (e-mail submissions are not accepted).
- Homework assignments are usually due on Sunday.
- WRITE YOUR CODE ALONE. Learn to help one another without sharing any code.

Labs and other in-class activities

- Half of our meeting time each week will be devoted to labs and other hands-on activities.
- Most of the lab assignments are to be completed during in-class time. They are not homework.
- Lowest lab assignment grade will be dropped.
- There are no make-ups for missed labs or other in-class activities.

Exams

- There will be two midterm exams, and one final exam.
- All exams are cumulative, closed-book.
- You may have one sheet of notes for each exam. This sheet must be handwritten (and it must be handwritten by *you*), and turned in at the end of your exam.
- No make-ups for missed exams. If you are absent for an exam, your grade for that exam will be zero.

Your grade will be determined as follows

3 Exams	45%
Homework	35%
Labs	10%
Participation and other work	10%
Total	100%

Grading Scale

		Grade
92	100	**A**
90	92	**A-**
88	90	**B+**
82	88	**B**
80	82	**B-**
78	80	**C+**
72	78	**C**
70	72	**C-**
68	70	**D+**
62	68	**D**
60	62	**D-**
0	60	**F**

Topics

- **Introduction/Overview**
- **Web**
  - HTML
  - CSS
    - Bootstrap / Foundation
  - Responsive designs
  - ADA issues
- **Server Side**
  - Introduction to scripting languages such as PHP and .NET or Tomcat
  - Database-driven sites
  - Handling forms
  - Sessions
  - Authentication
  - MVC design pattern
  - Templating
- **JavaScript**
  - DOM manipulation
  - Event handling
  - Form handling
  - jQuery
- **AJAX Applications**
- **Frameworks**
  - Such as AngluarJS / Backbone / Ember
  - Bootstrap
- **Security**
  - Authentication
  - Safely handling sessions
  - Safely handling data provided by users
  - HTTPS and mixed HTTP/HTTPS issues

Calendar (subject to change)

Week	Dates	Content
1	Jan 28 – Feb 3	Introduction to Web Programming
2	Feb 4 – Feb 10	HTML
3	Feb 11 – Feb 17	CSEE
4	Feb 18 – Feb 24	Bootstrap
5	Feb 25 – Mar 3	Forms and JavaScript
6	Mar 4 – Mar 10	JavaScript
7	Mar 11 – Mar 17	Ajax
8	Mar 18 – Mar 24	PHP
9	Apr 1 – Apr 7	Databases
10	Apr 8 – Apr 14	PHP and databases
11	Apr 15 – Apr 21	PHP Laravel
12	Apr 22 – Apr 28	PHP and REST
13	Apr 29 – May 5	WebSockets
14	May 6 – May 11	Wrap-up

Computer Science and Software Engineering Academic Integrity Expectations for Individual and Group Problem Solving Assignments

The Department of Computer Science and Software Engineering is committed to maintaining strict standards of academic integrity. The department expects each student to understand and comply with the University's Policy on Academic Integrity and the undergraduate student handbook and graduate student handbook. Students may direct questions regarding academic integrity expectations to their instructor or to the department chair. All work submitted must be original for that class. Submitting the same project for two different classes is grounds for charging a student with academic misconduct unless prior written permission is received from both instructors.

"Problem Solving Assignments" are assignments that involve programming, math, proofs, derivations, and puzzles.

The purpose of a problem solving assignment is for you to develop the skills necessary to solve similar problems in the future. To learn to solve problems you must solve the problems and write your solutions independently.

It is worth reiterating that the important aspect of the assignment is that you actually create the solution from start to finish; simply copying a solution and then understanding it after the fact is not a substitute for actually developing the solution.

The notion of academic integrity can be confusing in courses with substantial problem solving because certain forms of collaboration and investigation are permitted, but you are still required to complete your assignment independently. The following scenarios are meant to help distinguish between acceptable and unacceptable levels of collaboration and research, but are not all-inclusive:

ACCEPTABLE:

- Consulting solutions from the current course textbook, but not from other published sources.
- Seeking help on how to use the programming environment such as the editor, the compiler, or other tools.
- Seeking help on how to fix a program syntax error or how a certain language feature works.
- Discussing strategies with a fellow student on how to approach a particular problem. This discussion should not include significant sections of completed work or source code (including printouts, email, viewing on a monitor). Discussions should begin with a clean sheet of paper and end with conceptual drawings and/or pseudo-code.

UNACCEPTABLE:

- Looking at another solution including those written by current students, past students, or outside sources such as code or solutions found on the Web, or in publications other than the current class textbook.
- Using another solution as a starting point and then modifying the code or text as your own work.
- Providing a copy of your solution or a portion of your solution, in any form (electronic, hard copy, allowing another student to view your code on a monitor), to another student.
- Giving or receiving code fragments to fix a problem in a program.

If you are stuck on a problem and you are tempted to search for a solution on the Web or to look at another student's solution STOP and email or ask your instructor for help.

Student Disability Services Statements

If you are a student with a disability and feel you may need a reasonable accommodation to fulfill the essential functions of this course, you are encouraged to contact Student Disability Services (SDS). SDS provides accommodations and services for students with a variety of disabilities, including physical, medical and psychiatric disabilities. You are encouraged to contact SDS to learn more about registration and procedures for requesting accommodations.

Oxford Campus: *SDS@miamioh.edu*
Hamilton Campus: *MUHODS@miamioh.edu*
Middletown Campus: *MUMDC@miamioh.edu*

Current SDS registered students should request accommodations according to *SDS procedure*. You are strongly encouraged to request and discuss your accommodations needs during the first 1-2 weeks of the semester.