Web Applications

Spring 2014

**Instructor:** Dr. Rohit Aggarwal (Goes by the first name, Rohit)

**Lecture Times:** 6-10 PM, Tuesdays & Thursdays

**Class Venue:** BuC 420

**Office:** SFEBB 7233

**Email Address:** [Rohit.Aggarwal@business.utah.edu](mailto:Rohit.Aggarwal@business.utah.edu)

TA: [Michael.Beiene@business.utah.edu](mailto:Michael.Beiene@business.utah.edu)

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| **Office Hours:** Mondays 2-4 PM in Museum café (across CRCC) or by appointment.   |  | | --- | | **Recommended ~~required~~ texts (exams will be hands on coding exams and based on class lectures)**  **Textbook 1:** PHP and MySQL® Web Development, Fourth Edition | | <http://www.amazon.com/dp/0672329166> | |  | | **Textbook 2:** Murach’s Javascript and jQuery | | <http://www.amazon.com/dp/1890774707/> |   **Remote support:**  For remote help, please install teamviewer. Using teamviewer I can remotely help you in debugging code on your computer while you see. You can email me your teamviewer id and password to check whether I can help you. I typically help within 5-10 mints of your request if I am not tied up. However, if you don’t hear from me in a few minutes then you will hear from me in a few hours with the suggestion of time when I can help you next.  **Course Objectives:**   1. Develop dynamic website using PHP as a scripting language, Apache as a web-server and MySQL as a database. 2. Be able to create tables and query the tables in MySQL. 3. Understand the authentication, session control and security measures needed for web development. 4. Understand the difference between procedural and object-oriented web coding projects. 5. Understand the challenges in scaling a web application. |
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**Course Description**:

In this class you will learn developing web applications using WAMP (Windows, Apache, MySql, and PHP) architecture. The class will be hands on and you will learn to build web applications such as a data collection & parsing application, as well as a generic dynamic web page application, e.g. e-commerce site. **I will assume that you have no background in building web applications, not even a static web-page.**

Since there is no software engineering course as a requisite, I will assume that you have no knowledge of Object-oriented programming system (OOPS). I will start with the basic stuff that will help you build your first static web-pages and then proceed to dynamic web-pages such as Facebook using a procedural approach. Facebook was coded in a procedural way and this was revealed when some part of its code got leaked on August 11th 2007.

You can build sites using procedural approach but soon you will run into problems of code maintenance, therefore OOPS design principle is suggested as a recommended way to write software code.

**Attendance:** T**here will be no make-up for the missed exam**. If you can’t take an exam during the class time, then contact me as early as possible.

**ADA Statement**: The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to [Center for Disability Services](http://www.sa.utah.edu/ds/), 162 Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations.

**Grading Policies**: Grades will be assigned based on performances in the following areas:

* Individual assignments: 24%

(Copying may get you zero in the class. Students who would share their work would also get zero.)

* In-class coding exams: 50%
* Group-project mid-term submission: 6%

(mockups of the application)

* Group project: 20%

(group members may receive different grades based on intra-group rating)

**Ethical conduct policy:**

A student found involved in plagiarism/copying/cheating of any sort will be given zero in the course. The penalty will be same even if the student involved only helped the other student.

**Exams:**

Exam will comprise in-class coding in a limited time. It will be based on the coding exercises done in the class. You will get an opportunity to retake the exam 1 and exam 2, and submit the resubmission within a week. Your grade for the exam will be:

Exam 1 grade = max (Exam 1 score, 80% of resubmitted Exam 1 score)

Exam 2 grade = max (Exam 2 score, 70% of resubmitted Exam 2 score)

**Group Project:** Students can form their own groups. Number of students in a group can range from 3 to 4. Every group will run its code in class and demonstrate their project. In presentation you will also go over the code briefly with the special focus on the coding challenges faced and how did they overcome those challenges. Please try to come up with an idea different than an online review site example discussed later.

***Note:******Just replicating what we did in the class may hurt your grade. Be creative.***

**Project scope for three members’ team:**

1. Landing page that shows some products
2. User registration page
3. There should be multiple product types (at least 4 categories) and a product could have more than one categories
4. Page for every product that shows product details and submitted reviews
5. Page for reviewing a product (after signing in)
6. Besides search box there should be another list box to select the category. Search feature that returns products with the highest reviews that match a given keyword in the selected category.



1. A database of 40 products and their reviews
2. Admin should be able to govern user, products, reviews, categories

**Intra-group rating:** Every student will fill the following questions for his/her group members. Rate the following on 1-5 scale. (5 is always and 1 is never)

1. How frequently (s)he responded to an email within 24 hrs.
2. How frequently (s)he completed his part of work.
3. How inclined would you be to work with him/her on your project again?

Lower average score on the aforementioned questions may result in lower grade on the project.

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| **Day** | **Date** | **Topics** | **Recommended Readings** | **Assignment Due**  **Date** |
| Tue | Mar 25, 2014 | Group formation, Project discussion HTML Form, General PHP | <http://www.w3schools.com/html/html_forms.asp>  Other references: [All Tags](http://www.w3schools.com/tags/default.asp) ; [CommonlyUsedTags](http://www.w3schools.com/html/html_quick.asp)  PHP, Mysql Ch-1 |  |
| Thu | Mar 27, 2014 | Arrays,  Functions & Code reuse,  MySQL General | PHP, Mysql Ch-3, 5, 8, 10 |  |
| Tue | Apr 1, 2014 | Accessing MySql database in PHP | PHP, Mysql Ch-11 |  |
| Thu | Apr 3, 2014 | Authentication  Session Control  Modularizing authentication & taking user back to the protected page | PHP, Mysql Ch-17, 23 | Assignment 1   * Due: before class * Submit on Canvas * Same day late assignment would get half points max;   After Apr 3 no points. |
| Tue | Apr 8, 2014 | Search page, Product detail page  Admin, File related PHP functions, file upload | PHP, Mysql Ch-2 | Exam 1  (based on Assignment1 and part before Mysql) |
| Thu | Apr 10, 2014 | Security  Getting started with JS, Objects, functions, & events | PHP, Mysql Ch-15, 16  Murach’s JS & jQuery  Ch-2, 3 |  |
| Tue | Apr 15, 2014 | DOM with JS, Getting started with jQuery | Murach’s JS & jQuery  Ch-6, 7 | Assignment 2  (same rules as 1st assignment) |
| Thu | Apr 17, 2014 | Group project mid-term submission DOM with jQuery, Form validation with jQuery, AJAX, JSON | Murach’s JS & jQuery  Ch- 9, 10, 14 | Exam 2 |
| Tue | Apr 22, 2014 | jQuery Plugins, themes, & UI effects  String Manipulations,  Data Extraction & parsing | Murach’s JS & jQuery  Ch- 11, 12, 13  PHP, Mysql Ch-4 | Assignments 3  (same rules as 1st assignment) |
| Thu | Apr 24, 2014 | Group Presentations |  | 15 mints presentation—demonstrate the idea |