COMP 531 – *Web Development and Design*

Fall 2015 – ***Scott E Pollack, PhD***
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Course Description and Learning Outcomes

In this project-based course, students create multi-user Web applications utilizing many of the latest Web design technologies. Students are involved in all aspects of application development including front-end and back-end programming. Students learn and exercise industry best practices including test driven development and version control, and they explore modern Web structural frameworks.

The desired learning outcomes for the course are

- **Front-End Development**: fundamental understanding of the hypertext transfer protocol; describe how dynamic web pages are served to clients; explain the fundamentals behind e-commerce technology; demonstrated ability to design hypertext markup language pages utilizing cascading style sheets;; combine JavaScript libraries, frameworks, and custom implementations to create dynamic web pages.
- **Back-End Development**: fundamental understanding of various working components of a web server and how they interact; analyze a web application in terms of the model-view-controller architectural pattern; understanding of key database concepts including solutions for distributed database systems; create and query database tables using structured query language; analyze data transfer paradigms and implement selected data serialization techniques; compose various web services and custom implementations into a unified web application.
- **Software Engineering Practices**: describe the test driven development paradigm; utilize unit testing frameworks during code development; organize the implementation of software techniques through software design discussions. Class time for the course includes descriptions of key topics, live demonstrations of technologies, discussions, and time for students to work on their individual Web applications.
- The evaluation and comparison of different web applications, web application designs, and web structural frameworks in regards to usability, efficiency, maintainability, and security.
- By the end of the course, students develop a fully functioning multi-user Web application satisfying a collection of user and feature requirements, and gain the hands-on knowledge and experience to create forward-looking cutting-edge Web applications.

Required Text and Materials

There are no required textbooks for the class. Instead, there will be a collection of suggested books that can be used to supplement lectures and online documentation. Students are expected to have access to a computer to complete the assignments.

Grade Policies

The course grade includes in-class exercises, web development homework assignments, and a final project. Additional grading policies and details will be posted on the course web site.

Item	Percentage Each	Subtotal
25 In-class Exercises	1	25
6 Assignments (not incl Final)	6	36
Final Web Application	15	15
2 Web Site Reviews	6	12
Final Paper and Presentation	12	12

Absence Policies

A portion of the grade for the class will be in-class exercises. If a student misses a lecture they are expected to notify the instructor before the class meeting. After the class session they are to review the material for that lecture and complete the in-class exercise that was missed with prior confirmation.

Rice Honor Code

In this course, all students will be held to the standards of the Rice Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook at http://honor.rice.edu/honor-system-handbook/. This handbook outlines the University's expectations for the integrity of your academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process.

The in-class exercises may be performed in small teams or two or three students. This work is shared work that all students of the team may use for their class assignments, but should not be shared with other members of the class.

All submitted homework is expected to be the result of the student's individual effort. Outside of the in-class exercise contributions, portions of code presented in class or posted on the class website, class assignments should be completed solely by student submitting the assignment. Students are encouraged to discuss with their peers techniques for completing the assignments, but all code should be written by the submitting student and not copied or refactored from sources not approved by the instructor, and in those cases should be properly attributed.

Disability Support Services

If you have a documented disability or other condition that may affect academic performance you should make sure this documentation is on file with Disability Support Services (Allen Center, Room 111 / adarice@rice.edu / x5841) and talk with me to discuss your accommodation needs.

Syllabus Change Policy

This syllabus is only a guide for the course and is subject to change. The latest syllabus information for the course will always be available at the course web site.