COURSE TITLE

WEB DEVELOPMENT (COMP 431/531)

INSTRUCTOR CONTACT INFORMATION

Instructor: Mack Joyner, Duncan Hall 2063, mjoyner@rice.edu
Office Hours: See https://www.clear.rice.edu/comp431

COURSE OBJECTIVES 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; demonstrated ability to design hypertext markup language pages utilizing cascading style sheets; analyze a web application in terms of the model-view-controller architectural pattern; 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; understanding of key database concepts including solutions for distributed database systems; create and query databases; 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. 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.

The graduate section of the course contains the following additional learning outcome that will be achieved through paper and presentation: the evaluation and comparison of different web applications, web application designs, and web structural frameworks in regards to usability, efficiency, maintainability, and security.

REQUIRED TEXTS 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.

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GRADE POLICIES

Grading will be based on your performance on homework and the COMP 531 final presentation (weighted 60% in all), final project (weighted 20%), in-class exercises (weighted 5% in all), peer reviews (weighted 5% in all), and quizzes (weighted 10% in all).

Final letter grades will be assigned as follows:
A+: 97-100, A: 93-97), A-: 90-93), B+: 87-89, B: 83-87), B-: 80-83), etc…

We might curve up. We won't curve down.

There are no make-up assignments and late work (other than those using slip days mentioned below) will not be accepted. All students will be given 3 slip days to use throughout the semester. When you use a slip day, you will receive up to 24 additional hours to complete the assignment. You may use these slip days in any way you see fit (3 days on one assignment, 1 day each on 3 assignments, etc.). Slip days will be tracked using the README.md file that you will submit with all assignments. Other than slip days, no extensions will be given unless there are exceptional circumstances (such as severe sickness, not because you have too much other work). Such extensions must be requested and approved by the instructor (via e-mail, phone, or in person) before the due date for the assignment. Last minute requests are likely to be denied.

For grade disputes, please send an email to the course instructor within 7 days of receiving your grade. The email subject should include COMP 531 and the assignment. Please provide enough information in the email so that the instructor does not need to perform a checkout of your code.

GENERATIVE AI

In this course, students are allowed to only use generative AI (ex. ChatGPT) to search for JavaScript libraries that may enhance the appearance (styling) of the frontend. Students should not use generative AI to search for code that satisfies the functionality requirements in either the frontend or the backend

ABSENCE POLICIES

If a student misses a lecture, they are expected to review the lecture material on their own, and complete and submit the in-class exercise for the lecture before the start of the next lecture for partial credit (0.5 point).

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 following policies will apply to different work products in the course:
- In-class exercises: You are free to discuss all aspects of in-class exercises with your other classmates, the teaching assistants and the instructor during the class. You can work in a small team of 2 or 3 students. This work is shared work that all students of the team may use for their class assignments, but the work should not be shared with other class members. If you work on the exercise outside of class (e.g., due to an absence), then it must be entirely your individual effort, without discussion with any other students.
- Homework, Final Project, Paper/Presentation: The paper, final project and all submitted homework are expected to be the result of your individual effort. You are free to discuss course material and approaches to problems with your other classmates, the teaching assistants and the

instructor, but you should never misrepresent someone else's work as your own. If you use any material from external sources, you must provide proper attribution.
- Quizzes: The quizzes will be taken in Canvas. You **should not** use any course notes, lectures slides, JavaScript code snippets, or the internet when you begin the quiz.   You should not place the example code in any console or editor.   You will only have 1 attempt at each quiz.

TITLE IX

Rice University cares about your wellbeing and safety. Rice encourages any student who has experienced an incident of harassment, pregnancy discrimination, gender discrimination, or relationship, sexual, or other forms interpersonal violence to seek support through The SAFE Office. Students should be aware when seeking support on campus that most employees, including myself, as the instructor/TA, are required by Title IX to disclose all incidents of non-consensual interpersonal behaviors to Title IX professionals on campus who can act to support that student and meet their needs. For more information, please visit safe.rice.eduLinks to an external site. or email titleixsupport@rice.edu.

DISABILITY SUPPORT SERVICES

If you have a documented disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Disability Support Services (Allen Center, Room 111 / adarice@rice.edu / x5841) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

IRB PROTOCOL FY2017-294

This semester your instructor will be conducting a study looking at teaching and learning. The purpose of this study is to determine the factors that influence teaching effectiveness and learning. Your participation in this study will last for the duration of the current semester and will entail activities no different from the regular activities you would otherwise engage in as part of the course. If you would like more information, please do not hesitate to ask. If you would like to opt out of the study, please talk to me as soon as possible.

SYLLABUS CHANGE POLICY & COURSE WEB SITE

This syllabus is only a guide for the course and is subject to change with advanced notice. The latest syllabus information for the course will always be available at the course web site, http://www.clear.rice.edu/comp431.