CIS 526 - Web Interface Design
Spring 2018

Instructor: Nathan Bean <nhbean@ksu.edu>
Office Hours & Location: M 3:30pm-5:00pm; DUE 2216
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Office Hours & Location: T 11am - 12pm, F, 1pm - 2pm; DUE 1119
Class Time & Location: TU 11:30 - 12:45; DUE 1114
Final: Monday, May 7, 9:40 am - 11:30 am

Course Description
This course serves as an introduction to the domain of web systems programming, and introduces algorithms, data structures, and design techniques common to the domain.

Course Objectives
At the end of this course, students should be able to:

- Create client/server web applications in node
- Understand and articulate the user interface issues, data structures, algorithms, and design structures common to web development
- Consider the memory and computational implications of their software designs
- Be able to quickly learn and use web development frameworks in a variety of languages
- Develop an understanding of how techniques used in web programming can be beneficially incorporated within their general software development efforts

Course Topics
1. HTML5, CSS, Javascript review
2. Web application architectures - MVC, Pipeline, Single-Page-Apps, REST APIs
3. AJAX & Fetch API
4. WebSockets
5. Template-based Rendering
6. Database Integration
7. Server Setup and Deployment
8. Users - Cookies, Authentication, Authorization, Roles
9. Notifications - email templates, scheduling, error notification, etc
10. Full-text search
11. Event feeds - RSS, Facebook & Twitter integration
12. File uploads & downloads, streaming media
13. Graphing Libraries
14. Scalability

Course Structure
Lectures
This course utilizes short lectures interspersed with in-class application of the subject covered. This allows class time to be better utilized for addressing questions and actively developing web applications. Please put your best effort into both completing and understanding the examples - and bring any questions you have with you to class.

Individual Assignments
Throughout the first part of the course we will be building a web development framework using Node and JavaScript. Students will be assigned subsystems of this framework to complete.

Group-Based Web Development
Toward the middle of the semester we will be breaking into teams to create original web applications. Each student is expected to make contributions to the overall web development effort. Needless to say, these web applications should represent your best effort. There will be regular assignments attached to developmental milestones for this project, as well as required presentations at Open House and at the end of the semester.

Code Reviews
Class time will also be used for group code reviews, where teams will meet with the instructor and GTA to review their current web application code.

Peer Evaluations
Throughout the semester your classmates will be asked to evaluate your performance and contributions to the group projects. Their responses will be taken into account in assigning grades.

Grading Breakdown
Individual Assignments: 25%
Code Reviews: 25%
Student Portal Project: 30%
Peer Evaluations: 10%
Class Attendance: 10%

Textbooks
Required
"Atomic Design." Brad Frost. Available online for free at http://atomicdesign.bradfrost.com/

Recommended
Students will likely benefit from reference books focused on JavaScript, HTML, and CSS technologies. A good source for these is the Safari Books Online database, available through K-State Libraries. This database features current programming e-books by O'Riley and other publishers, at no cost to K-State students. This library can be accessed here: http://er.lib.ksu.edu/login?url=http://proquest.safaribooksonline.com/?uicode=ksu.

Other Resources
The Periodic Table of the (Web) Elements (http://zqsmm.qiniucdn.com/data/20110511083224/index.html0), is a fun way to expore the 106 currenlty defined HTML5 tags.

Course Software
We will be developing using HTML5, CSS, and Javascript, as well as Node, a server-side JavaScript environment that will need to be installed on your development machine ().

You will also need a web browser with debugging tools. Google Chrome (https://www.google.com/intl/en/chrome/browser/) or Mozilla Firefox

(http://www.mozilla.org/en-US/firefox/fx/) are the recommended platforms.

Also, if you are working in a different environment but would like to develop in linux, Oracle's VirtualBox software is a valuable tool (https://www.virtualbox.org/).

Attendance Policy
Each unexcused absence will reduce the student's attendance grade by 25%, and each tardy by 10%. Five or more unexcused absences will result in an automatic grade of F for the course.

Late Work
Late work will not be accepted.

Subject to Change
The details in this document are not set in stone - there may need to be adjustments during the semester. If this occurs, the changes will be posted to the class' K-State Online page and emailed to all students.

Academic Honesty
Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: www.ksu.edu/honor.

A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

Students with Disabilities
"Any student with a disability who needs a classroom accommodation, access to technology or other academic assistance in this course should contact Disability Support Services (dss@k-state.edu) and/or the instructor. DSS serves students with a wide range of disabilities including, but not limited to, physical disabilities, sensory impairments, learning disabilities, attention deficit disorder, depression, and anxiety."

Expectations for Classroom Conduct
All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the *Student Government Association By Laws, Article VI, Section 3, number 2*. Students that engage in behavior that disrupts the learning environment may be asked to leave the class.

Campus Safety
Kansas State University is committed to providing a safe teaching and learning environment for student and faculty members. In order to enhance your safety in the unlikely case of a campus emergency make sure that you know where and how to quickly exit your classroom and how to follow any emergency directives. To view additional campus emergency information go to the University's main page, www.k-state.edu, and click on the Emergency Information button.