CS 174 / SE 174
Web Programming

GREEN SHEET

Fall Semester 2015

Department of Computer Science
San Jose State University
Instructor: Ron Mak

Section 2: MW 10:30 – 11:45 AM, DH 450
Section 4: MW 1:30 – 2:45 AM, DH 450

Office hours: MW 3:00 – 4:00 PM
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Description

Developing a successful multi-tier web application involves client-side programming, server-side programming, and back-end programming. This class introduces various software technologies commonly used in each tier:

▪ **Client-side**
> HTML 5
> CSS 3
> JavaScript
> jQuery
> AJAX

▪ **Server-side**
> PHP
> Object-relational mapping (ORM)
> Laravel

▪ **Back-end**
> MySQL database
> XML
> Web services

We will also discuss security, localization (L10N), internationalization (I18N), and search engine optimization (SEO). With so many software technologies, this class can provide only introductions and guidance — students will need to explore each technology further on their own.

Students will work in small project teams. Each team will incrementally develop a major web application of its choosing throughout the semester.

Course Goal

To teach students how to develop and deploy web applications.

Course Objectives

To teach students

- To deploy and manage web applications.
- To develop web applications with non-trivial designs.
- To develop web applications that interface with databases.
- To develop and deploy server-sider components.
- To specify XML languages using schemas and DTDs.
- To transform XML documents using style sheets.
- To process XML documents.

Student Learning Outcomes

Upon successful completion of this course, students should be able to:

- Write HTML documents containing standard HTML elements including forms, tables, client-side scripts, and server-side scripts.
- Write schemas and style sheets for XML documents.
- Write server-side scripts that process HTML forms.
- Write client-side scripts that validate HTML forms.
- Develop and deploy web applications that involve components, web services, and databases.

Prerequisites

 CS 46B   Introduction to Data Structures

A grade C- or better, or instructor's consent. **The Department of Computer Science strictly enforces prerequisites.** If you are not already pre-enrolled, you must come to the first class meeting and pick up an Add Form from the instructor. If applicable, show the instructor your card that indicates you're a graduating senior. It will be the instructor's and the department's decision whether or not to send you an add code by email.

The instructor may drop any student who does not show up during the first two class meetings and who didn't provide a valid excuse ahead of time.

Required texts

There are no required books for this class.

Recommended texts for self-study

HTML and CSS: Visual QuickStart Guide (8th edition) Elizabeth Castro and Bruce Hyslop Peachpit Press, 2013 ISBN: 978-0321928832
JavaScript: Visual QuickStart Guide (9th edition) Dori Smith and Tom Negrino Peachpit Press, 2014 ISBN: 978-0321996701
JavaScript: The Definitive Guide (6th edition) David Flanagan O'Reilly, 2011 ISBN: 978-0-596-80522-4
PHP and MySQL for Dynamic Web Sites: **Visual QuickPro Guide (4th edition)** Larry Ullman Peachpit Press, 2011 ISBN: 978-0321784070ß
Learning PHP, MySQL, JavaScript, CSS & HTML5: **A Step-by-Step Guide to Creating Dynamic Websites (3rd edition)** Robin Nixon O'Reilly Media, 2014 ISBN: 978-1491949467
JavaScript & jQuery: The Missing Manual (3rd edition) David Sawyer McFarland O'Reilly Media, 2014 ISBN: 978-1491947074
jQuery Pocket Reference David Flanagan O'Reilly, 2011 ISBN: 978-1-449-39722-7
HTML5 and CSS3 All-in-One For Dummies (3rd edition) Andy Harris For Dummies, 2014 ISBN: 978-1118289389
Code Bright A free online book on Laravel by Dayle Rees. See also laravel.com

Schedule

Subject to change with fair notice.

Week	Dates	Topics and activities
1	Aug 24, 26	Introduction XAMPP *Create project teams* "Naked" HTML Lists, tables, links, and images
2	Aug 31 Sep 2	Simple form processing with PHP Simple database access with PHP Simple dynamic page generation with PHP CSS 3
3	Sep 9	CSS 3*, cont'd*
4	Sep 14, 16	Search engine optimization (SEO) Data modeling and MySQL databases
5	Sep 21, 23	PHP and database access
6	Sep 28, 30	Basic JavaScript Input validation JSON
7	Oct 5, 7	Advanced JavaScript HTML 5 canvas drawing and animation
8	Oct 12, 14	Advanced PHP Object-relational mapping (ORM)
9	Oct 19, 21	**Midterm:** Monday, October 19 Session maintenance and cookies
10	Oct 26, 28	jQuery jQuery UI
11	Nov 2, 4	AJAX XML
12	Nov 9	Processing XML with PHP Web services
13	Nov 16, 18	PHP RESTful APIs Security Localization (L10N) and internationalization (I18N)
14	Nov 23, 25	Laravel PHP framework Model-view-controller (MVC) architecture
15	Nov 30 Dec 2	**Final project presentations**
16	Dec 7	**Final project presentations** Course review
	Dec 9	***Final projects due Wednesday, December 9***
		Final examination: Section 2: Tuesday, December 15 9:45 AM – noon in DH 450 Section 4: Wednesday, December 16 12:15 – 2:30 PM in DH 450

Procedure

Students will work in small project teams. Throughout the semester, each team will incrementally develop a significant web application of its choosing using the software technologies covered by this course.

Choose your team members wisely! Once teams are formed, you cannot move to a different team. Each student must be on a team.

Course requirements and assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in University Policy S12-3 at http://www.sjsu.edu/senate/docs/S12-3.pdf.

Note that University policy F69-24, "Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading."

Assessments

At the end of the semester, each of you will turn in an assessment of your own performance on your team, and an assessment of each of the other members of your team.

Exams

The midterm and final examinations will be open book, notes, and laptops. Instant messaging, e-mails, texting, tweeting, or other communication with anyone else during the exams will be strictly forbidden.

Class grade

Your individual class grade will be weighted as follows:

30%   Assignments*
35%   Final project*
15%   Midterm**
20%   Final exam**

⋆ *team scores*
⋆⋆ *individual scores*

Each assignment, project, and exam will be scored (given points) but not assigned a letter grade. The mean score and standard deviation will be announced after each assignment and exam.

Final individual class letter grades will be assigned based on the class curve. Your final class grade can be adjusted up or down depending on your level and quality of participation on your project team as determined by the project tracking tools and your team members' assessments of your performance.

Classroom protocol

As mentioned above, it is very important for each student to attend classes and to participate. Arrive to class on time. Cell phones in silent mode, please.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's Catalog Policies section at http://info.sjsu.edu/static/catalog/policies.html. Add/drop deadlines can be found on the current academic year calendars document on the Academic Calendars webpage at http://www.sjsu.edu/provost/services/academic_calendars/. The Late Drop Policy is available at http://www.sjsu.edu/aars/policies/latedrops/policy/. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the Advising Hub at http://www.sjsu.edu/advising/ .

Consent for Recording of Class and Public Sharing of Instructor Material

University Policy S12-7, http://www.sjsu.edu/senate/docs/S12-7.pdf, requires students to obtain instructor's permission to record the course.

"Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor's permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material."

"Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent."

Academic integrity

Your commitment as a student to learning is evidenced by your enrollment at San Jose State University. The University Academic Integrity Policy S07-2 at http://www.sjsu.edu/senate/docs/S07-2.pdf requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The Student Conduct and Ethical Development website is available at http://www.sjsu.edu/studentconduct/.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Integrity Policy S07-2 requires approval of instructors.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the Accessible Education Center (AEC) at http://www.sjsu.edu/aec to establish a record of their disability.

In 2013, the Disability Resource Center changed its name to be known as the Accessible Education Center, to incorporate a philosophy of accessible education for students with disabilities. The new name change reflects the broad scope of attention and support to SJSU students with disabilities and the University's continued advocacy and commitment to increasing accessibility and inclusivity on campus.