San José State University
Department of Computer Science
CS 174 Web Programming
Sections 2 & 4
Fall 2015

Course and Contact Information

Instructor:	Ronald Mak
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Office Hours:	MW 3:00-4:00 PM
Class Days/Time:	Section 2: MW 10:30 - 11:45 AM Section 4: MW 1:30 - 2:45 PM
Classroom:	DH 450
Prerequisites:	CS 46B

Faculty Web Page and Piazza Messaging

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on my faculty web page at http://www.cs.sjsu.edu/~mak/CS174/index.html. You are responsible for regularly checking with the messaging system through Piazza to learn of any updates.

Course Description

Development and deployment of multi-tier web-based applications. Introduction to HTML, XML, enterprise design patterns, web services and database access.

Learning Outcomes

1. LO 1: Write HTML documents containing standard HTML elements including forms, tables, client-side scripts, and server-side scripts.
2. LO 2: Write schemas and style sheets for XML documents.
3. LO 3: Write server-side scripts that process HTML forms.
4. LO 4: Write client-side scripts that validate HTML forms.
5. LO 5: Develop and deploy web applications that involve components, web services, and databases.

Course Learning Outcomes (CLO)

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

1. CLO 1: To deploy and manage web applications.
2. CLO 2: To develop web applications with non-trivial designs.
3. CLO 3: To develop web applications that interface with databases.
4. CLO 4: To develop and deploy server-sider components.

5. CLO 5: To specify XML languages using schemas and DTDs.
6. CLO 6: To transform XML documents using style sheets.
7. CLO 7: To process XML documents.
8. CLO 8: 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

9. CLO 9: We will also discuss:
    - Security
    - Internationalization (I18N) and localization (L10N)
    - Search engine optimization (SEO)

With so many software technologies, this class can provide only introductions and guidance — you will need to explore each technology further on your own.

Required Texts/Readings

There are no required texts 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 at http://daylerees.com/codebright/getting-started See also the Laravel site at http://laravel.com

Software to Install

Visit the **XAMPP** site at https://www.apachefriends.org/index.html Install the Windows or Mac version.

Course Requirements and Assignments

You will form **project teams** of around four students each. Each team will develop a major web application of its choosing incrementally throughout the semester. The teams will last throughout the semester. Once the teams are formed, you will not be allowed to move from one team to another, so form your teams wisely! Each student must be on a team.

#	Assigned	Due	Project
1	Aug 31	Sept 8	Simple end-to-end web application http://www.cs.sjsu.edu/~mak/CS174/assignments/1/Assignment1.pdf
2	Sept 14	Sept 21	HTML page formatting and layout with CSS http://www.cs.sjsu.edu/~mak/CS174/assignments/2/Assignment2.pdf
3	Sept 23	Sept 30	Table joins and PHP prepared statements http://www.cs.sjsu.edu/~mak/CS174/assignments/3/Assignment3.pdf
4	Sept 30	Oct 14	JavaScript http://www.cs.sjsu.edu/~mak/CS174/assignments/4/Assignment4.pdf
5	Oct 21	Oct 28	Object-relational mapping http://www.cs.sjsu.edu/~mak/CS174/assignments/5/Assignment5.pdf

6	Oct 28	Nov 6	jQuery and jQuery UI http://www.cs.sjsu.edu/~mak/CS174/assignments/6/Assignment6.pdf
7	Nov. 4	Nov. 13	AJAX http://www.cs.sjsu.edu/~mak/CS174/assignments/7/Assignment7.pdf

As part of the deliverables, each student must also turn in a short (1 or 2 pp.) **individual postmortem report** that includes:

- A brief description of what you learned in the course.
- An assessment of your accomplishments for your project team on the assignments and the compiler project.
- An assessment of each of your other project team members.

You should start thinking about and planning for your project early in the semester.

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 at http://www.sjsu.edu/senate/docs/F69-24.pdf states that "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."

Grading Policy

Your individual class grade will be weighted as follows:

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

* *project 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.

Note that "All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades." See University Policy F13-1 at http://www.sjsu.edu/senate/docs/F13-1.pdf for more details.

Classroom Protocol

It is very important for each student to attend classes and to participate. Cell phones in silent mode, please.

University Policies

General Expectations, Rights and Responsibilities of the Student

As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU's policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. See University Policy S90–5 at http://www.sjsu.edu/senate/docs/S90-5.pdf. More detailed information on a variety of related topics is available in the SJSU catalog, at http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not serve to address the issue, it is recommended that the student contact the Department Chair as a next step.

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 and the following items to be included in the syllabus:

- "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."
    - It is suggested that the greensheet include the instructor's process for granting permission, whether in writing or orally and whether for the whole semester or on a class by class basis.
    - In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.
- "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/.

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.

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Course Schedule

Subject to change with fair notice. Change announcements will be made via Piazza.

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 Processing XML with PHP
12	Nov 9	Responsive page layouts Traditional and RESTful web services
13	Nov 16, 18	Internationalization (I18N) and localization (L10N) Security
14	Nov 23, 25	Model-view-controller (MVC) architecture Laravel PHP framework
15	Nov 30, Dec 2	**Web project presentations**
16	Dec 7	Cognitive science and UI design Course review
	Dec 9	***Web 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