

Modern Technologies of Web Development

ITP 404x (3 Units)

Objective

Provide students with the necessary skills to build web applications using modern techniques, frameworks, libraries, web services and API's, design patterns, and tools that are used among developers within the industry.

Concepts

This course is intended to teach a combination of new technologies, conventions, and prevalent standards and best practices used in contemporary web development.

Prerequisites

ITP 301 or CSCI 351 (or sufficient experience)

Lecture

3 hrs / week

Course Structure

Students are expected to:

- Participate in lecture discussions and critiques
- Complete weekly lab assignments and projects
- Manage and complete individual class projects

Students are responsible for completing assignments and projects by stated deadlines. Most assignments will be uploaded by students to both their USC Web space in an itp404 directory and GitHub. Others may require a more extensive hosting solution and can be uploaded to a free cloud hosting service.

Required Textbooks

JavaScript Enlightenment by Cody Lindley: O'reilly Publishing, 2013

Grading

Grading will be based on lecture participation, completed assignments and projects, midterm grades, and a final individual project.

Final grades will be determined as follows:

Assignments / Labs: 30%

Class Participation: 10%

Midterm Project: 15%

Quizzes: 10%
Individual Final Project: 35%

Final course grade is determined by standard formulas:

A	100% - 93%
A-	92% - 90%
B+	89% - 87%
B	86% - 83%
B-	82% - 80%
C+	79% - 77%
C	76% - 73%
C-	72% - 70%
D+	69% - 67%
D	66% - 63%
F	62% and below

Policies

It is the responsibility of the student to make sure projects and assignments are turned in on time. Make sure you follow the procedures outlined in each assignment or project.

Late projects will be reduced a letter grade per day after the assignment was due. No projects will be accepted later than five days from the due date.

Academic Integrity

The use of unauthorized material, communication with fellow students during an examination, attempting to benefit from the work of another student, and similar behavior that defeats the intent of an examination or other class work is unacceptable to the University. It is often difficult to distinguish between a culpable act and inadvertent behavior resulting from the nervous tension accompanying examinations. When the professor determines that a violation has occurred, appropriate action, as determined by the instructor, will be taken.

Although working together is encouraged, all work claimed as yours must in fact be your own effort. Students who plagiarize the work of other students will receive zero points and possibly be referred to Student Judicial Affairs and Community Standards (SJACS).

All students should read, understand, and abide by the University Student Conduct Code listed in SCampus, and available at:

<http://www.usc.edu/student-affairs/SJACS/nonacademicreview.html>

Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to your TA) as early in the semester as possible. DSP is

located in STU 301 and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

Course Outline

- Week 1 Course introduction
- Week 2 JavaScript / jQuery review
Lab 1: Custom Accordion, Classpage
- Week 3 Intermediate jQuery & JavaScript best practices
- Selector caching
 - Event delegation
 - IIFE
- Assignment 1: Photo gallery**
- Week 4 Object Oriented JavaScript Pt. 1
- Object Literals
 - Module pattern / application namespacing
- Assignment 2: Validation library**
Reading: JSE - Ch 3
- Week 5 Object Oriented JavaScript Pt. 2
- Constructor pattern
 - Prototype pattern
 - jQuery behind the scenes
- Assignment 3: Reusable widget**
Reading: JSE - Ch 1, 2
- Week 6 Google Maps JavaScript API
Geolocation API
Assignment 4: Current position mapper
Reading: JSE - 4, 5
Quiz 1
- Week 7 Data interchange formats: XML, JSON
Cross-domain Communication
Facebook Graph API
Client-side templating
Assignment 5: iTunes search application
Reading: JSE - 9

Week 8	REST design principles RESTful Web Services Pt. 1 w/ PHP Instagram REST API Midterm Project Project Proposal
Week 9	RESTful Web Services Pt. 2 w/ PHP Authenticated API calls CURL API call caching Twitter REST API 1.1 Lab 2: Twitter API endpoints
Week 10	AJAX <ul style="list-style-type: none"> ■ XMLHttpRequest ■ AJAX in jQuery ■ Facade pattern Assignment 6: Twitter single page search application
Week 11	Publish / Subscribe pattern Assignment 7: Assignment 6 using PubSub Quiz 2
Week 12	Real-time PHP Applications with Web Sockets Assignment 8: Group project
Week 13	Angular.js Lab 3
Week 14	Angular.js Lab 4
Week 15	Conclusion Getting into the industry

Student presentations on the day of the final

Final Project

For the final project, students will develop a mashup web application on a topic of their choice. The web application must utilize several technologies and web services discussed throughout the semester. Detailed requirements will be sent out mid-semester.