Modern Technologies of Web Development

ITP 404x (3 Units)

Objective
The objective of this course is to provide students with the necessary skills to build JavaScript web applications using modern techniques, frameworks, libraries, and tools that are used among developers within the industry. The concepts learned in this class will be applicable to many technology stacks students may work with in the future.

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 - working knowledge of HTML, JavaScript, jQuery, and basic CSS)

Lecture
3 hrs / week

Course Structure
Students are expected to:

- Attend and 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.

Recommended Textbooks
- Free ebook: http://www.javascriptenlightenment.com/
- Eloquent JavaScript: http://eloquentjavascript.net/

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: 30%
Class Participation, Forum Discussion, and Attendance: 15%
Midterm: 20%
Individual Final Project: 35%

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. Assignments will be assigned on Tuesday and are due the following Tuesday at midnight. Each student will receive 3 assignment extensions to be used at discretion. If you choose to use an extension, the assignment must be turned in within 5 days after the original due date, which is Sunday at midnight. In order to use an extension, notify the TA and the instructor via email. If a student fails to notify the instructor and TA about using an extension, a zero will be given on that assignment. A zero will also be given if an assignment is turned in after the extension period.

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

Prior to each class will be a fun, ungraded programming exercise to help reinforce concepts and gain more experience, counting towards your participation grade.

1 - 8/22  Course Introduction
          The JavaScript Framework Landscape
          Choosing a JavaScript Framework

2 - 8/29  Data manipulation with forEach, map, filter, and reduce
          Assignment 1

3 - 9/5   No Class
          JavaScript objects and “this”
          Constructor Functions and Prototypes
          Assignment 2

4 - 9/12  Google Maps JavaScript API
          Assignment 3: Current position mapper

5 - 9/19  AJAX, JSON, and Promises
          Assignment 4

6 - 9/26  Client-side Templating
          Event Delegation
          Assignment 5

7 - 10/3  React Pt. 1
          Assignment 6

8 - 10/10 React Pt. 2
          Assignment 7

9 - 10/17 React Pt. 3 - Redux
          Assignment 8

10 - 10/24 Ember Pt. 1 - Routing, Routes, Templates

11 - 10/31 Midterm

12 - 11/7 Ember Pt. 2 - Components
Assignment 9

13 - 11/14  JavaScript Testing
14 - 11/21  No class (Thanksgiving)
15 - 11/28  Deployment and Continuous Integration

**Final Project Due**

**Final Project**

Students will develop a web application on a topic of their choice using React or Ember for the frontend. You must use those technologies. No exceptions. Detailed requirements will be sent out mid-semester.