Full-Stack Web Development
ITP 303 (4 Units)

Objective
This course will teach students front-end and back-end techniques necessary to build web applications. Students will learn how to make websites interactive, how to structure and manage content for websites in databases, and how to create data-driven web applications.

Concepts
Students will first learn front-end technologies including JavaScript, jQuery library, and other JavaScript-based plugins. They will learn how to access and manipulate objects displayed by browsers, as well as client browser properties. Then, the course will teach basics of database design and implementation using relational database management systems (RDBMS). Students will learn how to submit SQL queries to databases and how to create data interfaces using PHP scripting language. The course will also introduce Model-View-Controller (MVC) design pattern, and software frameworks adhering to MVC. Students will be working with web servers, database tools, integrated development environments (IDEs), and other technologies currently used in the web industry.

Prerequisites
CSCI 104 or ITP 365

Instructor
Zune Nguyen

Contact
tridungn@usc.edu

Office Hours
See course website

Lecture and Lab
Tuesday, Thursday 2pm - 3:50pm, KAP 107

Website
http://uscitp.com/

Textbooks
None

Grading
The following percentage breakdown will be used in determining the grade for the course.

Assignments 30%

Attendance, Participation, Labs 15%
Midterm Exam 20%
Final Project 35%
Total 100%

**Grading Scale**
The following shows the grading scale to be used to determine the letter grade.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93% or up</td>
</tr>
<tr>
<td>A-</td>
<td>90% - 92.99%</td>
</tr>
<tr>
<td>B+</td>
<td>87% - 89.99%</td>
</tr>
<tr>
<td>B</td>
<td>83% - 86.99%</td>
</tr>
<tr>
<td>B-</td>
<td>80% - 82.99%</td>
</tr>
<tr>
<td>C+</td>
<td>77% - 79.99%</td>
</tr>
<tr>
<td>C</td>
<td>73% - 76.99%</td>
</tr>
<tr>
<td>C-</td>
<td>70% - 72.99%</td>
</tr>
<tr>
<td>D+</td>
<td>67% - 69.99%</td>
</tr>
<tr>
<td>D</td>
<td>65% - 66.99%</td>
</tr>
<tr>
<td>F</td>
<td>64.99% or below</td>
</tr>
</tbody>
</table>

**Policies**

**Exams**
No make-up exams (except for documented medical or family emergencies) will be offered.

**Attendance**
An attendance sheet will be circulated each lecture. You must sign in to receive attendance credit. You can miss one lecture without affecting your grade.

**Labs**
Labs must be demonstrated to TAs before leaving lab session. No late lab submissions are accepted.
Late Assignments
10% per day penalty is applied for late assignments. No submissions are accepted 4 days after due date.

Incomplete and Missing Grades
Excerpts for this section have been taken from the University Grading Handbook, located at http://www.usc.edu/dept/ARR/grades/gradinghandbook/index.html. Please see the link for more details on this and any other grading concerns.

A grade of Missing Grade (MG) “should only be assigned in unique or unusual situations... for those cases in which a student does not complete work for the course before the semester ends. All missing grades must be resolved by the instructor through the Correction of Grade Process. One calendar year is allowed to resolve a MG. If an MG is not resolved [within] one year the grade is changed to [Unofficial Withdrawal] UW and will be calculated into the grade point average a zero grade points.

A grade of Incomplete (IN) “is assigned when work is not completed because of documented illness or other ‘emergency’ occurring after the twelfth week of the semester (or 12th week equivalency for any course scheduled for less than 15 weeks).”

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 your course instructor (or TA) as early in the semester as possible. If you need accommodations for an exam, the form needs to be given to the instructor at least two weeks before the exam.

DSP is located in STU 301 and is open from 8:30am to 5:00pm, Monday through Friday. Contact info: 213-740-0776 (Phone), 213-740-6948 (TDD only), 213-740-8216 (FAX), ability@usc.edu, http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html.

Statement on Academic Conduct and Support Systems

Academic Conduct
Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Section 11, Behavior Violating University Standards https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/.
Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, http://policy.usc.edu/scientific-misconduct/.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the Office of Equity and Diversity http://equity.usc.edu/ or to the Department of Public Safety
http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us. This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. The Center for Women and Men
http://www.usc.edu/student-affairs/cwm/ provides 24/7 confidential support, and the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources.

**Support Systems**

A number of USC’s schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the American Language Institute http://dornsife.usc.edu/ali, which sponsors courses and workshops specifically for international graduate students. The Office of Disability Services and Programs http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, USC Emergency Information http://emergency.usc.edu/ will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.
# Full-Stack Web Development

## ITP 303 (4 Units)

### Course Outline

*Subject to change throughout the semester*

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Lab due</th>
<th>Assignment due</th>
</tr>
</thead>
</table>
| 1    | Course Overview  
Web Servers, Content Workflow  
HTML / CSS | L1: cPanel, MySQL Workbench  
L2: Student Pages |  |
| 2    | jQuery Animations, Effects, Event Handlers.  
DOM, jQuery DOM Traversing, DOM Manipulation | L3: jQuery Animations & Effects  
A1: HTML Web Page |  |
| 3    | JavaScript Selectors, HTML Objects, Properties, Event Handlers  
JS this, void keywords, Regular Expressions | L4: JS Photo Gallery  
A2: jQuery Photo Gallery |  |
| 4    | BOM, Cookies, JS Objects & Prototypes  
JSON, JSONP, JSON APIs | L5: MySQL Workbench  
A3: Form Validation with RegExp |  |
| 5    | Database Basics, Designing Databases  
Intro to SQL, retrieving data from DB | L6: SQL SELECT Statements  
A4: JSON API Webpage |  |
| 6    | Data manipulation in SQL  
Data from multiple tables | L7: Simple SQL Statements, PhpStorm License Key  
A5: Database Design & Implementation |  |
| 7    | Intro to PHP, form variables, superglobals, date & time | L8: PhpStorm Setup, PHP Output Page  
A6: Full SQL Statements |  |
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Lecture Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Full Drill-Down Pages, Pagination Include, require, sessions, cookies</td>
<td>L9: Simple Authentication A7: Search Results &amp; Delete Pages</td>
</tr>
<tr>
<td>9</td>
<td>Midterm Exam</td>
<td>A8: Full Drill-Down Pages</td>
</tr>
<tr>
<td>10</td>
<td>Hashing, Membership System, Sending emails from PHP Security</td>
<td>A9: Final Project Proposals</td>
</tr>
<tr>
<td>11</td>
<td>File Handling, File Upload AJAX</td>
<td>L10: File Handling Exercise A10: Full Authentication Pages</td>
</tr>
<tr>
<td>12</td>
<td>REST APIs Setting up Web Servers</td>
<td>L11: Web Server Setup A11: AJAX Pages</td>
</tr>
<tr>
<td>13</td>
<td>Caching Design Patterns, MVC</td>
<td>L12: PHP &amp; MySQL Caching A13: REST API Webpage</td>
</tr>
<tr>
<td>14</td>
<td>Front-end Frameworks</td>
<td>L13: AngularJS A14: Final Project Front-end Pages</td>
</tr>
<tr>
<td>15</td>
<td>Back-end Frameworks</td>
<td>L14: Laravel A15: Final Project Front-end Presentations</td>
</tr>
<tr>
<td>16</td>
<td>Final Project Presentations</td>
<td>Final Project</td>
</tr>
</tbody>
</table>

(Finals Day)