ITP 304: Back-End Web Development
Units: 4
Spring 2024 – Tue, Thu – 2pm-3:50pm

Location: KAP 107

Instructor: Zune Nguyen
Office Hours: See course website
Contact Info: zune@usc.edu

IT Help: Provided by Viterbi IT
Hours of Service: 8am – 5pm, Mon-Fri
Walk-in: DRB 205
Contact Info: (213) 740-0517
Email: engrhelp@usc.edu
Course Description

This course teaches students how to create dynamic data-driven web applications. Students will learn how to design and implement databases to store website content. The course also covers creating website back-end and connecting it to different database management systems to create live web applications. Students will also explore different tools, libraries, and frameworks used in back-end web development.

Learning Objectives

- Design and implement databases to store website content.
- Create web back-ends to connect with database management systems.
- Integrate third-party APIs into web applications.
- Explore back-end frameworks currently used in the industry.

Prerequisite(s): ITP 301 or intermediate knowledge of HTML, CSS, and JavaScript.

Technological Proficiency and Hardware/Software Required

Students should have access to their own computers running either Windows, MacOS, or Linux, and should be familiar with the basic operation of their computers.
**Grading Breakdown**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance &amp; Participation</td>
<td>10%</td>
</tr>
<tr>
<td>Assignments</td>
<td>45%</td>
</tr>
<tr>
<td>Labs</td>
<td>15%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Final Project</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**Grading Scale**

Course final grades will be determined using the following scale:

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

All lectures will be recorded and made available to students for asynchronous learning. This course can be taken and completed asynchronously.

Exams

No make-up exams will be offered. Failure to submit an exam on time or submitting blank work will result in a 0% for the exam grade.

Attendance & Participation

Lecture participation questions will be given at the end of each lecture. All participation submissions are due within 24-hours after the lecture ends. One (1) lowest participation score will be dropped.

Late Assignments

A 10% per day penalty is applied to late assignments. No submissions are accepted after five (5) days beyond the due date. To receive a grade, students must notify the grader once the late assignment is submitted.

Late Labs

No late lab submissions are accepted.

Grade Corrections

Any questions or concerns regarding grades must be addressed within seven (7) days after grades are posted on Blackboard. No changes to any grades will be made after seven (7) days.

Academic Integrity

All coursework is expected to represent each student’s individual effort. Students may not collaborate, share, or look at other students’ code.

Course Material

All lectures will be recorded and made available to students enrolled in the course. These class recordings are made available only for access by students in this class for educational purposes only and shall not be disclosed to any other party for any purpose.

Students may not reproduce, distribute, or post any course material, including notes, assignments, labs, and tests, without the instructor’s written consent. Refer to SCampus in Part B, Section 11.12 for more information https://policy.usc.edu/scampus/.
## Course Schedule

Note: Subject to change throughout the semester

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Lab</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Course Overview, Content Workflow</td>
<td>L1: MySQL Workbench, cPanel, Student Page</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Database Basics, Designing Databases</td>
<td>L2: Simple Film Database Design</td>
<td>A1: Football Schedule Database Design</td>
</tr>
<tr>
<td>3</td>
<td>Intro to SQL, Retrieving data from DB</td>
<td>L3: Song DB SELECT SQL Statements</td>
<td>A2: Football &amp; DVD DB SELECT SQL Statements</td>
</tr>
<tr>
<td>4</td>
<td>Data manipulation in SQL</td>
<td>L4: MAMP, SQL Statements</td>
<td>A3: Full SQL Statements</td>
</tr>
<tr>
<td>5</td>
<td>Intro to PHP</td>
<td>L5: PHP Page</td>
<td>A4: PHP Form Output</td>
</tr>
<tr>
<td>6</td>
<td>PHP MySQLi</td>
<td>L6: Football Schedule Search Results</td>
<td>A5: DVD Search Page</td>
</tr>
<tr>
<td>7</td>
<td>CRUD Part 1</td>
<td>L7: Football Schedule Insert Pages</td>
<td>A6: DVD Insert, Detail Pages</td>
</tr>
<tr>
<td>8</td>
<td>CRUD Part 2</td>
<td>L8: Football Schedule Update, Delete Page</td>
<td>A7: DVD Update, Delete Pages</td>
</tr>
<tr>
<td>9</td>
<td>Include, Require, Constants, Pagination</td>
<td>L9: Football Schedule Pagination</td>
<td>A8: Final Project Proposal</td>
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<tr>
<td></td>
<td>Spring Break</td>
<td></td>
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</tr>
<tr>
<td>10</td>
<td>Exam (03/19)</td>
<td>L10: Dashboard w/ Sessions</td>
<td>A9: Final Project Front-End Pages</td>
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<tr>
<td>11</td>
<td>Sessions, Cookies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Membership System, Sending emails from PHP</td>
<td>L11: Contact Page w/ Email Confirmation</td>
<td></td>
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<tr>
<td>14</td>
<td>cURL, REST APIs</td>
<td></td>
<td></td>
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<tr>
<td>15</td>
<td>Intro to Web Frameworks, Laravel</td>
<td></td>
<td></td>
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<tr>
<td>16</td>
<td>(Finals)</td>
<td></td>
<td>Final Project Due</td>
</tr>
</tbody>
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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 Part B, Section 11, “Behavior Violating University Standards” [https://policy.usc.edu/scampus-part-b/](https://policy.usc.edu/scampus-part-b/). 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](http://policy.usc.edu/scientific-misconduct).

**Support Systems**

*Student Counseling Services (SCS) - (213) 740-7711 – 24/7 on call*
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. [https://engemannshc.usc.edu/counseling/](https://engemannshc.usc.edu/counseling/)

*National Suicide Prevention Lifeline - 1-800-273-8255*
Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. [http://www.suicidepreventionlifeline.org](http://www.suicidepreventionlifeline.org)

*Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 - 24/7 on call*
Free and confidential therapy services, workshops, and training for situations related to gender-based harm. [https://engemannshc.usc.edu/rsvp/](https://engemannshc.usc.edu/rsvp/)

*Sexual Assault Resource Center*
For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: [http://sarc.usc.edu/](http://sarc.usc.edu/)

*Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086*
Works with faculty, staff, visitors, applicants, and students around issues of protected class. [https://equity.usc.edu](https://equity.usc.edu)

*Bias Assessment Response and Support*
Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. [https://studentaffairs.usc.edu/bias-assessment-response-support/](https://studentaffairs.usc.edu/bias-assessment-response-support/)

*The Office of Disability Services and Programs*
Provides certification for students with disabilities and helps arrange relevant accommodations. [http://dsp.usc.edu](http://dsp.usc.edu)

*Student Support and Advocacy – (213) 821-4710*
Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. [https://studentaffairs.usc.edu/ssa/](https://studentaffairs.usc.edu/ssa/)

*Diversity at USC*
Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. [https://diversity.usc.edu](https://diversity.usc.edu)

*USC Emergency Information*
Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible. [http://emergency.usc.edu](http://emergency.usc.edu)

*USC Department of Public Safety – 213-740-4321 (UPC) and 323-442-1000 (HSC) for 24-hour emergency assistance or to report a crime.*
Provides overall safety to USC community. [http://dps.usc.edu](http://dps.usc.edu)