

# USC Viterbi

School of Engineering

*Information*

*Technology Program*

## **ITP 304: Back-End Web Development**

**Units:** 4

**Fall 2024 – Tue, Thu – 2pm-3:50pm**

**Location:** KAP 107

**Instructor:** Zune Nguyen

**Office Hours:** See course website

**Contact Info:** [zune@usc.edu](mailto: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:** [engrhelpp@usc.edu](mailto:engrhelpp@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

Attendance & Participation	10%
Assignments	45%
Labs	15%
Exam	20%
Final Project	10%
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Total	100%

## 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

Week	Lecture	Lab	Assignment
1	Course Overview, Content Workflow	L1: Software Setup, Student Page	
2	Database Basics, Designing Databases	L2: Simple Film Database Design	A1: Football Schedule Database Design
3	Intro to SQL, Retrieving data from DB	L3: Song DB SELECT SQL Statements	A2: Football & DVD DB SELECT SQL Statements
4	Data Manipulation in SQL	L4: Software Setup, SQL Statements	A3: SQL Statements
5	Intro to Node.js, Express	L5: Login Form	A4: User Search & Registration Form
6	Node.js & Postgres	L6: Album Search	A5: DVD Search
7	CRUD Part 1	L7: Album Insert	A6: DVD Insert, Detail
8	CRUD Part 2	L8: Album Edit	A7: DVD Edit, Delete
9	REST API, Part 1	L9: Album Search API	A8: DVD Search, Details API
10	<b>Exam (10/29)</b>		
11	REST API, Part 2	L10: Album Add, Update, Delete API	A9: Final Project Proposal
12	Authentication	L10: Login & Logout	A10: Final Project Front-End Pages
13	File Upload, Third-Party APIs	L11: File Upload Page	
14	Pagination		
15	MVC Paradigm		
16 (Finals)	<b>Final Project Due</b>		

## 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/>. 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>.

### 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/>

*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>

*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/>

*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/>

*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/>

*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/>

*The Office of Disability Services and Programs*

Provides certification for students with disabilities and helps arrange relevant accommodations. <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/>

*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/>

*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>

*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>