



School of Engineering
*Information
Technology Program*

**ITP 405: Advanced Back-End Web
Development**

Units: 4

Spring 2025: Monday 5pm - 8:20pm

Location: KAP 107 & Online

Instructor: David Tang

Office Hours: By appointment

Contact Info: dtang@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: engrhhelp@usc.edu

Course Description

The course will cover how to build server-side web applications and APIs. We will also look at the differences between traditional server-side technologies like PHP and how it differs from Node.js, an asynchronous server-side alternative using JavaScript.

Prerequisite(s)

ITP 303, ITP 304, ACAD 276, or sufficient experience. Students should be proficient with the basics of building dynamic web pages using HTML, SQL, and any server-side technology.

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

Assignments	40%
Written Exam	15%
Practical Exam	15%
Final Project	30%
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Total	100%
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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.

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 grade.

Late Assignments

Assignments are due the following week before class (Monday at 5pm) unless stated otherwise. Failure to turn in assignments by the due date will result in a 0. No extensions.

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 use AI like ChatGPT or 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	Date	Lecture	Assignment
1	1/13	Course Introduction Git, GitHub, and GitHub Classroom	
2	1/20	Labor Day: No class	
3	1/27	Review database-driven web pages with PHP SQL Joins PDO, prepared statements, and parameter binding	Assignment 1
4	2/3	The Model-View-Controller (MVC) pattern Laravel: routes, controllers, query builder, views	Assignment 2
5	2/10	Laravel: CRUD, flash messages, data validation	Assignment 3
6	2/17	Presidents' Day: No class	
7	2/24	Laravel: Object Relational Mapping (ORM)	Assignment 4
8	3/3	Laravel: Running migrations, authentication, built-in middleware	
9	3/10	Practical Exam	
10	3/17	Spring Break: No class	
11	3/24	Laravel: Writing migrations, custom middleware	Assignment 5
12	3/31	Laravel: Mail and Queues	Assignment 6
13	4/7	Laravel: Consuming Third-Party APIs, Caching	Assignment 7
14	4/14	Laravel: Building a REST API	
15	4/21	Node.js: Introduction Written Exam	Assignment 8
16	4/28	Node.js: Building an API	Final Project Due 5/4

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>