

USC Iovine and Young Academy

*Arts, Technology and the Business
of Innovation*

Acad276: Dev 1

4 unit

Fall 2023

Tuesdays and Thursdays 2pm in IYH210

Course Site: <http://iyawebdev.com/acad276>

Instructor: **Patrick Dent**

dent@usc.edu / 213-821-1400

(Note email preferred method of contact, will endeavor to response within 24 hrs M-F)

Office Hours: See course website for open lab and office hours.
Also additional hours by appointment.

Grader: **Dhruvam Zaveri (dzaveri@usc.edu)**

IT Help: <https://usc.edu.sharepoint.com/sites/IYASStudent/SitePages/IT-Resources.aspx>

Hours of Service: 8:30 a.m. – 6:30 p.m.

Contact Info: iyahelp@usc.edu

USC Technology Support Links

[Zoom information for students](#)

[Blackboard help for students](#)

[Software available to USC Campus](#)

Course Description

This course teaches the fundamentals of relational database management systems (RDBMS) and how to design and implement databases. Students will learn the Structured Query Language (SQL) for communicating with databases. They will learn and use the PHP scripting language to make SQL calls to databases and to flow those results into pages. Students will also use PHP to create data interfaces, as well as to create basic conditional routines and other constructs that allow for dynamic sites. They will perform basic analytics and will learn the fundamentals of alternative data structures, enterprise databases, and "big data" systems.

Learning Objectives

From e-commerce to news and information, modern web sites do not contain thousands of hand-coded pages. Sites are driven by web "templates" that flow in information from databases or other data sources. Student will learn the basics of creating data structures to house the core "data" of web sites and user server-side scripting to "flow" that information into web templates. They will also learn the basic techniques for tracking user behavior and traffic, and the fundamentals of performing analytics on that data.

Prerequisite(s): *Acad-275 or equivalent experience*

Required Readings and Supplementary Materials

No required course textbook. Lecture notes, online resources and other readings will be posted on the course site.

HOW TO PURCHASE SOFTWARE AT THE DISCOUNTED ACADEMY RATE

The following software are available for purchase online at the Iovine and Young Academy discounted rate:

Software	IYA Short-Term License at USC Bookstore
Adobe Creative Cloud	\$70 2023–2024 annual license (active through July 2023)
Apple Logic Pro	\$35 semester licenses
SolidWorks	\$35 semester license
Apple Final Cut Pro	\$35 semester license

To purchase:

- Visit: <https://commerce.cashnet.com/IOVINE>
- Select the software license(s) you would like to purchase by clicking “View Details” or the software title, and make your purchase.
- You will receive an order confirmation receipt at the email address you provided.
- You will be notified by email when the software license has been activated.

If you have any questions about this process, please do not hesitate to contact Academy IT Support at iyahelp@usc.edu.

Iovine and Young Hall Cleanout

The Academy is unable to store student projects and materials beyond the end of the semester. Students must remove all projects and personal materials from the Creators Studio, lockers/locker room, and other classrooms by the end of each semester. **All projects and materials left in Iovine and Young Hall will be discarded the day after final exams end. No exceptions.**

Grading Scale

The following shows the grading scale to be used to determine the final course letter grade.

A	100 - 94
A-	94 - 90
B+	90 - 87
B	86 - 83
B-	83 - 80
C+	80 - 77
C	77 - 73
C-	73 - 70
D+	70 - 67
D	67 - 64
F	64 or below

Course Grading Breakdown

Assignments	35%
Participation and Labs	20%
Examination	15%
Major Project	30%
<i>Total</i>	<i>100%</i>

Major Project

Students will work in groups to build a database-driven web site built in MySQL and PHP. The site will feature a secured administrative back-end, track user behavior and traffic, and feature custom modules.

Project Timeline:

<i>Week 09</i>	<i>Milestone 1</i>	<i>User Research, Proposal, DB v1, Logos, Frontpage designs</i>
<i>Week 12</i>	<i>Milestone 2</i>	<i>Frontpage build, Search and Result pages, Design / Style Guide</i>
<i>Week 13</i>	<i>Milestone 3</i>	<i>User Testing Results</i>
<i>Week 14</i>	<i>Milestone 4</i>	<i>Login, Admin, Majority of Site Pages</i>
<i>Week 16</i>	<i>Final Build</i>	<i>Complete, Dynamic Site, Summary and Write Up</i>

Course Structure

Students are expected to:

- Participate in lecture discussions and critiques
- Complete weekly lab assignments and projects
- Manage and complete individual class projects
- Contribute to the group project

Students are responsible for completing assignments and projects by stated deadlines. Most assignments will be uploaded by students to their server space and linked from a self-maintained assignment page.

Course Policies

Individual student assignments and labs are expected to be completed by the individual student. While peers are encouraged to help each other, completed work needs to be the sole work of the student and should not include code written by other students, from web resources or artificial intelligence agents without clear citation. When in doubt it is best to ask the instructor and grader.

No make-up exams (except for documented medical or family emergencies).

Due dates and requirements for all Labs and Assignments will be posted on the course site. In most instances students will “post” their work to their assigned server space as defined on the course site.

It is the student’s responsibility to post work by the due date following the defined class procedures, even if you miss class. Work turned in late will lose 10% credit per day and late work is not accepted after two weeks past the due date. To receive credit for late work you MUST email the grader once you have posted the lab or assignment after the due date or you will not receive credit.

The Academy maintains rigorous academic standards for its students and on-time attendance at all class meetings is expected. Students cannot participate in class if they are not present, engaged and on-time, and accordingly points will be deducted for absences and tardies. Students remain responsible for any missed work from excused or unexcused absences. Immediately following an absence, students should contact the instructor to obtain missed assignments or lecture notes and to confirm new deadlines or due dates. Extensions or other accommodations are at the discretion of the instructor.

Attendance will be conducted through a verbal role call or circulated attendance sheet at the start of lecture. You must respond or sign in to receive lecture attendance credit.

In the case of prolonged illness, family emergencies, or other unforeseen serious issues, the student should contact the instructor to arrange for accommodation. Accommodation may also be made for essential professional or career-related events or opportunities. Additionally, students who need accommodations for religious observations should provide advanced notice to instructors and student athletes should provide Travel Request Letters. All accommodations remain at the discretion of the instructor, and appropriate documentation may be required.

Course Schedule: A Weekly Breakdown

Week 1a	Aug 22	Course introduction and overview. Web server and content workflow. Lab: Test cPanel, create database (due 1b)
Week 1b	Aug 24	Database fundamentals, designing databases for web content, major db platforms. MySQL, working with phpmyadmin Lab: Install mySql Workbench (due W2a) Assignment: DB schema (due W2a)
Week 2a	Aug 29	Working with MySQL Workbench. Introduction to Structured Query Language (SQL). Reading data with SELECT and WHERE. Assignment: SQL statements 1 (x8) (due W2b)
Week 2b	Aug 31	SQL Review. Views. Inserting, updating and deleting records. Assignment: RVS db schema. SQL statements 2 (x8) (due W3a).
Week 3a	Sept 05	Introduction to PHP and PHPStorm. Introduction to PHP Scripting Language and basic tags Setting, enforcing foreign key constraints. Lab: Assignment Web page (due W3b) Assignment: Class schedule database (due W3b)
Week 3b	Sept 07	PHP, MySQL (mysqli). Populating pages with db content. Looping through queries. Assignment: Search and Result pages (due 4a)
Week 4a	Sept 11	Php conditional statements. Populating select menus. Assignment: Search, Result pages v2 (due 4b)
Week 4b	Sept 14	Review php “if”, dynamic menus. Creating “insert” forms. Lab: Db backup/export. Assignment: Add, Insert pages (due 5a)
Week 5a	Sept 19	Drill-down workflow 1: Search, Results, Details Lab: Search, result, details pages (due 5b) Assignment: Project proposal, db sketch, pitch videos (due 6a)
Week 5b	Sept 21	Drill-down workflow 2: Results, Edit, Delete Assignment: Edit/update pages. (due 6a)
Week 6a	Sept 26	Review drill-down, form objects. Exam preparation.
Week 6b	Sept 28	Group project pitches and discussions.
Week 7a	Oct 03	PHP and SQL Examination
Week 7b	Oct 05	Db cross-reference tables.

		Deconstructing project databases. Announcement of groups, Group Working Session. Project: M1: User Research, Proposal, Db, Logos (due 9b)
Week 8a	Oct 10	SQL Inner Join, Deconstructing project databases (cont). Group Working Session Assignment: Group production schedule/gantt (due 9a)
<i>Week 8b</i>	<i>Oct 12</i>	<i>Fall Recess</i>
Week 9a	Oct 17	Group Working Session
Week 9b	Oct 19	Overview of Tech Courses beyond Acad276 Deconstructing project databases. Assignment: Group design comps, critique prep (due 10a) Project: M2: Fronts, search/results, styleguide (due 12a)
Week 10a	Oct 24	M1 Design Feedback session
Week 10b	Oct 26	Group project strategies, grader as a floating dev consultant. Images in databases. File uploads with php. Assignment: Add images to class schedule (due 11a)
Week 11a	Oct 31	Source control, github and phpstorm integration.
Week 11b	Nov 02	Aggregate SQL.
Week 12a	Nov 07	Guest: Introduction to mobile design and dev course Creating emails with php. User Testing, HCD <i>Intermediate data topics, analytics, machine learning.</i> Project: M3: User Testing (due W13a) Project: M4: Login, admin, most of site (due W14a) Lab: Create “Email search results” functionality (due 13a)
Week 12b	Nov 09	Guest: Introduction to machine learning Enterprise db concepts such as transactions and locking. Review php includes. Session and client variables. Login routines. <i>Lab:</i> Php log-in, security sandbox (due 13a). <i>Comm, Design Critiques</i>
Week 13a	Nov 14	Revisiting Javascript in data. JSON and UX. Transferring data from php queries into JS constructs.
Week 13b	Nov 16	Paginated results Calling APIS, using geocode and mapping APIs.

Week 14a	Nov 21	Introduction to Security issues. Php frameworks. Project: M5: Final build (due 12/2)
<i>Week 14b</i>	<i>Nov 23</i>	<i>Thanksgiving Break</i>
Week 15a	Nov 28	Unintended Consequences workshop. Insights into cloud and Devops. Sub-queries.
Week 15b	Nov 30	Beyond Dev2: server-side technologies, hosting, CMS Next-generation development <i>Special Topics</i>
	Dec 01	Group Website Final Build due 11:59pm
	<i>Dec 07</i>	<i>Final Presentations of Group Projects</i>

Statement on Academic Conduct and Support Systems

Academic Integrity

The University of Southern California is foremost a learning community committed to fostering successful scholars and researchers dedicated to the pursuit of knowledge and the transmission of ideas. Academic misconduct is in contrast to the university's mission to educate students through a broad array of first-rank academic, professional, and extracurricular programs and includes any act of dishonesty in the submission of academic work (either in draft or final form).

This course will follow the expectations for academic integrity as stated in the [USC Student Handbook](#). All students are expected to submit assignments that are original work and prepared specifically for the course/section in this academic term. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s). Students suspected of engaging in academic misconduct will be reported to the Office of Academic Integrity.

Other violations of academic misconduct include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see the [student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#).

Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

Students and Disability Accommodations:

USC welcomes students with disabilities into all of the University's educational programs. [The Office of Student Accessibility Services](#) (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

[Counseling and Mental Health](#) - (213) 740-9355 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

[988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages – 24/7 on call

The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

[Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740-9355(WELL) – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

[Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740-5086

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

[Reporting Incidents of Bias or Harassment](#) - (213) 740-5086 or (213) 821-8298

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

[The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740-0776

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

[USC Campus Support and Intervention](#) - (213) 740-0411

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

[Diversity, Equity and Inclusion](#) - (213) 740-2101

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

[USC Emergency](#) - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

[USC Department of Public Safety](#) - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call
Non-emergency assistance or information.

[Office of the Ombuds](#) - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

[Occupational Therapy Faculty Practice](#) - (323) 442-2850 or otfp@med.usc.edu

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.