USC Iovine and Young Academy
Arts, Technology and the Business of Innovation

Acad276: Dev 2
4 Units
Tuesdays, Thursdays 5 – 7:50pm
Spring 2021

Website:	http://iyawebdev.com/acad276
Instructor:	**Patrick Dent**
Office:	Online
Office Hours	Tuesdays 1 - 1:50 p.m.
	Tuesdays 3:30 - 4:30 p.m.
	Thursdays 3:30 - 4:30 p.m.
	Fridays 7:30 - 8:30 a.m.
	And by appointment
Contact Info:	dent@usc.edu / **213-821-1400**
	Note: Email is the preferred method of contact.
	I will typically respond with 24 hours (M - F).
Grader:	**Sachin Gupta <sgupta27@usc.edu>**

IT Help: https://iovine-young.usc.edu/ait/index.html
Hours of Service: 8:30am - 5:00pm
Contact Info: iyhelp@usc.edu, 213-821-6917

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: Acad275

Required Textbook: None

Grading Breakdown

Assignment	**35%**
Attendance and Labs	**15%**
Examination	**15%**
Major Project	**35%**
TOTAL	*100%*

Grading Scale

The following shows the grading scale to be used to determine the 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

Major Project [DRAFT]
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:
Week 10	*Milestone 1*	*User Research, Proposal, DB v1, Logos, Frontpage designs*
Week 12	*Milestone 2*	*Frontpage build, Search and Result pages, Design / Style Guide*
Week 13	*Milestone 3*	*User Testing Results*
Week 14	*Milestone 4*	*Login, Admin, Majority of Site Pages*
Week 16	*Final Build*	*Complete, Dynamic Site, Summary and Write Up*

Course Structure

Students are expected to:
- Participate in lecture discussions and critiques
- Complete weekly lab assignments and projects
- Manage and complete individual class projects

Students are responsible for completing assignments and projects by stated deadlines. Most assignments will be uploaded by students to their USC Web space and linked from an assignment page.

Policies

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. Students will "post" their work to their USC web space as defined on the course site.

It if 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 that you posted a lab or assignment after the due date or you will not receive credit.

An attendance sheet will be circulated each lecture. You must sign in for lecture to receive lecture attendance credit.

Academy Student Attendance Policy

The Academy maintains rigorous academic standards for its students and on-time attendance at all class meetings is expected. Each student will be allowed two excused absences over the course of the semester for which no explanation is required. Students are admonished to not waste excused absences on non-critical issues, and to use them carefully for illness or other issues that may arise unexpectedly. Except in the case of prolonged illness or other serious issue (see below), no additional absences will be excused. Each unexcused absence will result in the lowering of the final grade by 1/3 of a grade (e.g., an A will be lowered to A-, an A- will be lowered to B+, etc.).

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.

Automatically excused absences normally may not be used for quiz, exam or presentation days. Using an excused absence for a quiz, exam or presentation, such as in the case of sudden illness or other emergency, is at the discretion of the instructor.

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. All accommodations remain at the discretion of the instructor, and appropriate documentation may be required.

HOW TO PURCHASE SOFTWARE AT THE DISCOUNTED ACADEMY RATE THROUGH THE USC BOOKSTORE:

The following software are available for purchase **online** at the Iovine and Young Academy discounted rate. **Please check your Academy course syllabi to see what software you will need.**

Software	IYA Short-Term License at USC Bookstore
Adobe Creative Cloud	$70 2020-2021 annual license (active through July 2021)
Apple Logic Pro	$35 semester license
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 iyhelp@usc.edu.

Course Schedule: A Weekly Breakdown

Week 1a	Jan 19	Course introduction and overview. Web server and content workflow. *Lab:* Install mySql Workbench (due W1b)
Week 1b	Jan 21	Database fundamentals, designing databases for web content, major db platforms. MySQL, working with MySQL Workbench. **Assignment:** DB schema (due W2a)
Week 2a	Jan 26	Introduction to Structured Query Language (SQL). Reading data with SELECT and WHERE. Views **Assignment:** SQL statements pt 1 (due W2b)
Week 2b	Jan 28	SQL Review. Inserting, updating and deleting records, Reformatting data. Introduction to phpmyadmin. **Assignment:** RVS db schema. SQL statements pt 2 (due W3a).
Week 3a	Feb 02	Introduction to PHP and PHPStorm. Introduction to PHP Scripting Language and basic tags *Lab:* Assignment Web page (due W3b) **Assignment:** Class schedule database (due W3b)
Week 3b	Feb 04	PHP, MySQL (mysqli). Populating pages with db content. Looping through queries. **Assignment:** Search and Result pages (due 4a)
Week 4a	Feb 09	Php conditional statements. Populating select menus. **Assignment:** Search, Result pages v2 (due 4b)
Week 4b	Feb 11	Review php "if", dynamic menus. Creating "insert" forms. *Lab:* Db backup/export. **Assignment:** Add, Insert pages (due 5a)
Week 5a	Feb 16	Drill-down workflow 1: Search, Results, Details *Lab:* Search, result, details pages (due 5b) **Assignment:** Project proposal, db sketch and pitch videos (due 6a)
Week 5b	Feb 18	Drill-down workflow 2: Results, Edit, Delete **Assignment:** Edit/update pages. (due 6a)
Week 6a	Feb 23	Review drill-down, form objects. Exam preparation.

Week 6b	Feb 25	Group project pitches and discussions.
Week 7a	Mar 02	***PHP and SQL Examination***
Week 7b	Mar 04	Deconstructing project databases. **Assignment:** Project M1: User Research, Proposal, Db, Logos (due 9b) *Special Topic (*Agile development, Logo workshop?)
Week 8a	Mar 09	Aggregate SQL. Setting, enforcing foreign key constraints. **Assignment:** Group production schedule/gantt (due 9a)
Week 8b	Mar 11	Creating emails with php. *Lab:* Create "Email search results" functionality (due 9a)
Week 9a	Mar 16	Images in databases. File uploads with php. **Assignment:** Add images to class schedule (due 10a)
Week 9b	Mar 18	Source control, github and phpstorm integration. Overview of Tech Courses beyond Acad276 **Assignment:** Project M2: Fronts, search/results, styleguide (due 12a) **Assignment:** Group design comps, critique prep (due 10a)
Week 10a	*Mar 23*	*Wellness Day – NO CLASS*
Week 10b	Mar 25	M1 Design Feedback session Group Working Session
Week 11a	Mar 30	Review php includes. Session and client variables. Login routines. *Lab:* Php log-in, security sandbox (due W12a).
Week 11b	Apr 01	Paginated results.
Week 12a	Apr 06	User Testing, HCD **Assignment:** Project M3: User Testing (due W13a) **Assignment:** Project M4: Login, admin, most of site (due W14a)
Week 12b	Apr 08	Comm, Design Critiques

Week 13a	Apr 13	Db transactions, locking
		Introduction to Analytics
		Sub-queries. PHP Frameworks
		Special Topics: Security?
Week 13b	Apr 15	*Special Topics: FT?*
Week 14a	Apr 20	*Special Topics*
		Assignment: Project M5: Final build (due end of W15)
Week 14b	*Apr 22*	*Wellness Day – NO CLASS*
Week 15a	Apr 27	*Special Topics*
Week 15b	Apr 29	Beyond Dev2: server-side technologies, hosting, CMS
		Next-generation development
		Special Topics
	Apr 30	Group Website Final Build due 11:59pm
	May 06	*Final Presentations*

Possible Special Topics*:*

Data Visualization (GL)

Caching

Additional intermediate PHP Functions

Laravel PHP Framework

Advanced Joins

Query Performance Optimization

Business Intelligence Systems Part 1: Big data, data warehousing,

Business Intelligence Systems Part 2: business reporting, data mining

Analytics Special Topics

Quality Assurance processes and phases

The Web development industry

Industry Event or Tour

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" 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, policy.usc.edu/scientific-misconduct.

Support Systems:

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

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP)
-213-740-9355 (WELL
https://studenthealth.usc.edu/sexual-assault/
 Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Relationship and Sexual Violence Prevention and Services provides immediate therapy services for situations related to gender- and power-based harm (e.g., sexual assault, domestic violence, stalking). (wording from the site)

Office of Equity and Diversity (OED) | Title IX - (213) 740-5086
equity.usc.edu, titleix.usc.edu
Information about how to get help or help a survivor of harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following protected characteristics: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations.

USC Policy Reporting to Title IX (213) 740-5086
https://policy.usc.edu/reporting-to-title-ix-student-misconduct/
The university encourages individuals to report prohibited conduct to the *Title IX Office*. Individuals can report to the university *Title IX Coordinator* in the *Office of Equity and Diversity.*

Bias Assessment Response and Support - (213) 740-2421
studentaffairs.usc.edu/bias-assessment-response-support
Avenue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response.

The Office of Disability Services and Programs - (213) 740-0776
dsp.usc.edu
Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Support and Advocacy - (213) 821-4710
studentaffairs.usc.edu/ssa
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.
Diversity at USC - (213) 740-2101
diversity.usc.edu
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
dps.usc.edu, emergency.usc.edu
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) 442-120 – 24/7 on call
dps.usc.edu
Non-emergency assistance or information.