

Description This course explores the engineering of software applications that are based on relational databases. It uses the lifecycle of software development: planning, analysis, design, implementation, testing, and, operation and maintenance. Scalability, expandability and security are emphasized.

Objectives At the completion of the course, students will be able to

- Describe the importance of database applications in engineering, industry and commerce.
- Perform advanced data modeling and analysis
- Create data definitions and constraints
- Demonstrate data retrieval and manipulation
- Implement security and usability in applications
- Use and compare commercial development tools, distributed/multi-tier environments and integration of databases
- Build a complete Web based database application. Examples – manufacturing, quality assurance, research and development, distribution, construction, non-profit organizations etc.
- Manage the development life cycle
- Explain new developments in Web Services

Prerequisite CSCI 101 and (ISE 382 or DSO 435)

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Office Hours TBA

Lecture 2-4:50 pm, Tuesday, KAP107

Lab Asst and Grader TBD

Course Website All course materials will be posted on *blackboard.usc.edu*.

Textbooks

- There are no required text books. Online references will be provided.
- Extensive lecture notes will be provided on Blackboard.

Software and Hardware Students will be given access to the following software/technologies.

- HTML, CSS, PHP, MYSQL
- Adobe Dreamweaver
- Adobe Photoshop
- Drupal

Grading The weights of graded material during the semester are listed below:

Homework	20%
Midterm Project	10%
Midterm Exam	35%
Final Project	
Peer evaluation	5%
Meeting deadlines	5%
Project implementation	20%
Final Report	5%
Total	100%

Final letter grade is based strictly on total percentage earned. NO EXCEPTIONS!

Grading scale (percentage):

A	100-95
A-	95-92
B+	92-89
B	89-86
B-	86-83
C+	83-80
C	80-77
C-	77-74
D+	74-71
D	71-68
D-	68-65
F	65 or below

- Policies**
- Homework/Projects turned in after the deadline will automatically have 10 points per day deducted.
 - No make-up exams (except for medical or family emergencies) will be offered nor will there be any changes made to the Final Exam schedule.
 - Before logging off a computer, students must ensure that they have saved their work (on their personal email accounts or flash drives) created during class. Any work saved to the computer will be erased after restarting the computer. ITP is not responsible for any work lost.
 - ITP offers Open Lab use for all students enrolled in ITP classes. These open labs are held beginning the second week of classes through the last week of classes.

Students with Disabilities Any Student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each

semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213)740-0776."

**Policy on Religious
Holidays**

University policy grants students excused absences from class for observance of religious holy days. Students should contact instructor IN ADVANCE to request such an excused absence. The student will be given an opportunity to make up work missed because of religious observance.

Students are advised to scan their syllabi at the beginning of each course to detect potential conflicts with their religious observances. Please note that this applies only to the sort of holy day that necessitates absence from class and/or whose religious requirements clearly conflict with aspects of academic performance. Please refer to the Holy Days Calendar <http://orl.usc.edu/religiouslife/holydays/>

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 Section 11, *Behavior Violating University Standards* <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/>. 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/>.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* <http://equity.usc.edu/> or to the *Department of Public Safety* <http://capsnet.usc.edu/department/departement-public-safety/online-forms/contact-us>. This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources.

Support Systems

A number of USC’s schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* <http://emergency.usc.edu/> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

Engineering Database Applications

ITP 482 (3 Units)

Course Outline

Week 1 — Introduction

- Course Overview

Week 2 — Client Server Architecture

- Three-tier Client-Server Architectures
- Open database Connectivity (ODBC) - Using ODBC to connect to databases
- Client-side vs server-side processing
- Comparison of server side programming languages

Week 3 — Drupal

- Introduction to Drupal as a design platform
 - Open source platform
- Nodes, blocks, layout, themes and modules

Week 4 — Drupal contd.

- **Hands-on lab**

Week 5 --- Drupal contd

- Application design
- Building content types
- Designing pages, blocks

Week 6 — Drupal contd

- Security
- Users, permissions, roles
- Access control
- Taxonomy
- Search engine

Week 7 - Drupal contd

- E-commerce
- Social networking
- Forums implementation

Week 8 — Drupal contd

- User interface design
- Theming
- HTML5
- CSS

Week 9 — Midterm Exam

Week 10 — Final Project.

- Project scope
- Roles, permissions
- Project Deadlines

Week 11 — Final Project contd

- Project updates

Week 12 — Final Project contd

- Feedback and improvements
- Beta release

Week 13 — Final Project contd

- Mobility
- Final testing

Week 14 — Final Project contd

Week 15 — Final Project contd

- Team demos

Week 16 — Final Project - Peer Eval due.