Database and Application
CPSC 431-01
Spring 2018

Description & Objectives

Database design and application development techniques for a real world system. System analysis, requirement specifications, conceptual modeling, logic design, physical design and web interface development. Develop projects using contemporary database management system and web-based application development platform.

Prerequisites

CPSC 332, declared major/minor in CPSC, CPEN, or CPEI.

Instructor

Thomas Bettens, RCA, CISSP
Phone*: 657-278-4999
Email: TBettens@fullerton.edu
Office*: CS 522
Office Hours *: Monday 4:00 PM – 5:00 PM
& by appointment. During final exam week, office hours are by appointment only.

* *Watch for updates*

Meeting Information

Room: CS 104
Time: Monday 5:30 PM – 6:45 PM
Wednesday 5:30 PM – 6:45 PM

Important Dates

CSUF's Academic Calendar is posted online at «http://apps.fullerton.edu/AcademicCalendar/». The Academic Calendar contains all the campus closures and holidays you should be aware of.
CSUF's Admissions Calendar is posted online at «http://www.fullerton.edu/admissions/Resources/Calendars.asp». The Admissions Calendar contains all the major dates with respect to adding, dropping, and withdrawing from your classes.

- January 22 First class
- February 19 Presidents' Day - No Class
- March 26 & 28 Spring Recess - No Class
- May 9 Last class
- May 14 Final Exam 5:00 PM - 6:50 PM

Textbooks

Required

PHP and MySQL Web Development; Addison-Wesley Professional; 5th Edition, ISBN-13: 978-0321833891

Many popular technical books may be read online through the campus's subscription to Safari Books Online. From outside of the campus network, the campus library's WWW proxy will grant you access, «http://www.library.fullerton.edu/asp/ipcheck.aspx?url=http://proquest.safaribooksonline.com/?uicode=calstate». The Safari Books Online service can be accessed directly from any computer on the campus network, «http://proquest.safaribooksonline.com/».

Development Tool Resources

Students interested in using Microsoft® development tools may request a Dreamspark account at «http://dsreqform.ecs.fullerton.edu/». A student may, at no monetary cost, download full featured versions of Microsoft Visual Studio.

Students interested in using Apple® development tools can freely download Xcode through the App Store application bundled with OS X. Students may download Xcode directly from «https://developer.apple.com/xcode/».

A Debian-based GNU/Linux OS virtual machine ready for students use and Debian-style installation scripts are posted online at «https://gamble.ecs.fullerton.edu/resources/».

A CentOS-based shell server is available through secure shell (ssh) and secure file transfer protocol (sftp). The hostname is ecs.fullerton.edu. If your email address is malcolm@csu.fullerton.edu, then your username is ACAD\malcolm. If you are using a command-line ssh client, then your command to connect to ecs.fullerton.edu will be `ssh 'ACAD\malcolm@ecs.fullerton.edu'`. Your password is the same password as your CSUF Portal password.

Please consider adopting a package management system for your personal computer to facilitate adding, updating and removing the various software development tools you may wish to use.

- Apple OS X
    - MacPorts «http://www.macports.org/»
    - Fink «http://www.finkproject.org/»
    - Homebrew «http://brew.sh/»
- Microsoft Windows
    - Chocolatey NuGet «https://chocolatey.org/»
    - Cygwin «http://www.cygwin.com/»
    - Npackd «https://npackd.appspot.com/»
- GNU/Linux OS
    - dpkg «https://www.debian.org/doc/manuals/debian-faq/ch-pkgtools.en.html»
    - rpm «http://fedoranews.org/alex/tutorial/rpm/»

Learning Goals

1. Students will learn the PHP fundamentals and lay the foundation for preparing themselves to become a professional PHP developer of enterprise web applications.

G.E. Requirements

This class does not meet any CSU General Education requirements.

Course Outline

Week	Date	Topic	Tentative Textbook Chapter
1	1/22 1/24	Introduction	
2	1/29 1/31	Part I: Using PHP	Chapters 1 thru 7
3	2/5 2/7		
4	2/12 2/14	Part II: Using MySQL	Chapters 8 thru 11
5	~~2/19~~ 2/21		
6	2/26 2/28		
7	3/5 3/7	Part III: Web Application Security	Chapters 14 thru 16
8	3/12 3/14		
9	3/19 3/21		
10	~~3/26~~ ~~3/28~~	Spring Recess, no class	
11	4/2	Part IV: Advanced PHP Techniques	Chapters 17 thru 22

	4/4		
12	4/9 4/11		
13	4/16 4/18		
14	4/23 4/25	Part V: Building Practical PHP and MySQL Projects	Chapters 25 thru 27
15	4/30 5/2		
16	5/7 5/9		
17	5/14	Final Exam	

Technical Proficiency

Technical proficiency in programming and software engineering should correspond to the prerequisite(s) of the course. Students are expected to be intimately familiar with their development platform of choice and be able to write and debug code in C++ at a level of proficiency that corresponds to the prerequisites of the course.

Technical proficiency with information technology, such as, but not limited to, the use of web-based online services, sending and receiving electronic mail, and desktop computer file systems, is assumed.

Grading

Plus and minus grading is not used when determining final grades.

Final grades are computed by first finding the average score in each category described in the table below on the right. All scores are normalized to a scale of 0 to 100 before being averaged. The average score for each category is then used to compute the weighted average according to the weights in the table below on the left.

Grade	% of Total Points
A	90–100%
B	80–89%
C	70–79%
D	60–69%
F	Below 59%

Category	% of Final Grade
Participation	5%
Assignments	20%
Project	20%
Midterm	25%
Final Exam	30%

Graduate Grading

Graduate students that use this course on a graduate study plan must perform additional work and will be evaluated on a separate grading scale vis-à-vis their undergraduate counterparts.

An additional programming project is mandatory for all graduate students. The project is proposed by the student and approved by the instructor. Graduate students must have a project approved by the tenth week of the semester or face a penalty of −10% for each week it has not been approved similar to course rule. The final project is due on the last class meeting of the 14th week of instruction.

Plus and minus grading is not used when determining final grades.

Final grades are computed by first finding the average score in each category described in the table below on the right. All scores are normalized to a scale of 0 to 100 before being averaged. The average score for each category is then used to compute the weighted average according to the weights in the table below on the left.

Grade	% of Total Points
A	90–100%
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Category	% of Final Grade
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Midterm	25%
Final Exam	30%

Assignments

Programming and written assignments will be discussed in class and posted to the course website in advance of their due dates. Each assignment description will include the assignment's grading rubric. Reading assignments are outlined in the syllabus and it is the responsibility of the student to stay up to date with the reading.

Written assignments must be typeset and presented in a professional manner. Presentation, spelling and grammar can be worth up to 30% of a written assignment's grade.

All programming assignments must be written in the PHP, SQL, C/C++ programming languages, unless specified otherwise. Coding style must conform to professional norms. At a minimum, code must be commented, have descriptive names for identifiers, and contain a comment at the top of each file with pertinent information such as the student's name, email address, and assignment name. A plain text README.TXT must be included with each assignment submission summarizing and documenting the work submitted. For students unfamiliar with coding style, Google's style guides are an excellent starting point, «https://github.com/google/styleguide», particularly their C++ style guide, «https://google.github.io/styleguide/cppguide.html».

At the start of the semester, the instructor will detail the platform and tools used to grade student assignments. It is the student's responsibility to ensure that the assignments execute to his or her satisfaction on the instructor's grading platform.

There are approximately:

- 5 programming assignments
- 2 written assignments
- 14 weeks of reading assignments

Exceptions are made on a case by case basis given enough time and evidence to weigh the merits of the application.

Attendance Policy

Attending class is mandatory. Missing class is not allowed unless it is excused by the instructor. Missing class as part of a documented accommodation is guaranteed to be excused. The ADA accommodated student must make a reasonable effort to coordinate any absences with the instructor.

Make Up Policy

Exams and quizzes cannot be taken after they have been given in class. Due to an act of nature, personal medical emergency, a family crisis, an act of terrorism, severe civil unrest, etc. students have 10 calendar days to petition the instructor to retake any exam/quiz or submit an assignment without late penalty.

Exceptions shall be made on a case by case basis, provided there is time to evaluate the merits of such an application.

Participation

In the context of this course, participation is defined as the following:

- Arriving to class prepared and on time.
- Taking notes.
- Actively listening to the lecture and asking questions when appropriate.
- Annotating code listings and handouts.
- Bringing any required materials to class.
- When needed/desired, seeking assistance to complete assignments.
- Barring an emergency, not leaving the class session early unless the instructor consents.
- Not distracting oneself or others with smartphones, games, online diversions, etc.
- Respecting and treating the instructor and the student's peers civilly.

Required Material

- A writing instrument
- A notebook
- A USB memory stick
- A personal computer with the requisite development tools or regular access to a computer lab

Academic Dishonesty

Students are encouraged to assist one another and discuss the course materials with your peers. It is your responsibility to be aware of and follow the spirit of CSU Fullerton's academic honesty policy which can be found at «http://www.fullerton.edu/senate/publications_policies_resolutions/ups/UPS%20300/UPS%20300.021.pdf ». Academic dishonesty will not be tolerated. The University Catalog and the Class Schedule provide a detailed description of Academic Dishonesty under *University Regulations*.

By submitting work for evaluation, you acknowledge that you have adhered to the spirit of the university's academic honesty policy and that your submission is an original work by you unless otherwise directed to work in groups. Failure to follow the spirit of the academic honesty policy will result in a severely negative evaluation of the work in question and may result in involving the Department Chair and the Judicial Affairs office to seek a disciplinary remedy.

Students with Special Needs

Please inform the instructor during the first week of classes about any disability or special needs that you may have that may require specific arrangements related to attending class sessions, carrying out class assignments, or writing papers or examinations. According to California State University policy, students with disabilities must document their disabilities at the Disability Support Services (DSS) Office in order to be accommodated in their courses. Additional information can be found at the DSS website, by calling 657-278-3112 or email «dsservices@fullerton.edu».

Student Resources

Any student who wishes to discuss any concern may contact the assistant deans of the college. Assistant deans are student advocates who will help you navigate the university's policies and procedures and assist with resolving any conflicts.

Assistant Dean for Student Affairs Carlos Santana
CS-206A (657) 278-4407 «csantana@fullerton.edu»
Assistant Dean International Programs and Global Engagement Lillybeth Sasis
CS-206A (657) 278-4881 «lsasis@fullerton.edu»

Emergency Procedures

For your own safety and the safety of others, each student is expected to read and understand the guidelines published at «http://prepare.fullerton.edu/campuspreparedness/». Should an emergency occur, follow the instructions given to you by faculty, staff, and public safety officials. An emergency information recording is available by calling the Campus Operation and Emergency Closure line at 657-278-4444.

Instructional Continuity

Due to an event such as an epidemic or a natural disaster that disrupts normal campus operations, students must monitor the course Titanium site and their campus email address for any instructions and assignments that the instructor announces.

Laboratory Safety

Safety is no accident. Learning and following the appropriate safety practices and protocols is an integral part to all laboratory courses. Following the appropriate safety practices and protocols minimizes the chances of repetitive stress injuries, mishandling hazardous materials, and injury to self and others. Additional campus laboratory safety information regarding hazardous materials is online at «http://riskmanagement.fullerton.edu/laboratorysafety/».

Extra Credit

There are no opportunities for extra credit.

Recording & Transcription of Class Content

Recording class content is governed by UPS 330.230, «http://www.fullerton.edu/senate/publications_policies_resolutions/ups/UPS%20300/UPS%20330.230.pdf ». Each instructor must permit class content to be recorded or transcribed by students when mandated to do so by the Americans with Disabilities Act or by other federal or state laws. Any recording of class content is for private use and study and shall not be made publicly accessible without the written consent of the instructor and students in the class.

Course Rules & Classroom Management

Unless an agreement or accommodation is reached between the student and the instructor, these rules must be followed.

- Attendance at all regularly scheduled lecture and discussion section is mandatory.
- Do not eat during lecture.
- If it makes noise, silence it.
- Computer use is not allowed in lecture except for taking notes.
- The student is responsible to be aware of any course announcements including changes to due dates and requirements.
- Homework, programming assignments, etc. may not be submitted late.
- Third party work (code, artwork, etc.) may not be used in student work without prior instructor consent. Failure to gain and document instructor consent will be construed as willful academic dishonesty.

- When a third party's work is incorporated into student work after gaining instructor consent, failure to wholly document the work's origin, copyright and license will be construed as willful academic dishonesty.