Syllabus

ICT 301-202: Introduction to Databases
Spring Semester, 2087 (10 January-4 May)
Revised: 3 January 2018

Instructor

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Office Hours

Most issues can be handled through email. I will frequently respond to emails as soon as possible, usually within 24 hours, weekdays. You may also schedule an online appointment via Zoom, or by other means.

COURSE OVERVIEW

Course Description

This course is intended to give students a solid background in databases, with a focus on relational database management systems. Topics include data modeling, database design theory, data definition and manipulation languages, storage and indexing techniques, query processing and optimization, and database programming interfaces.

Student Learning Outcomes

This course is designed as a hands-on course to develop proficiency in core database concepts. The course will evolve from understanding data traditional tables, then transition to understanding relational databases by designing and building databases using Access and querying using Structured Query Langue (SQL). The course also provides an introduction and overview of PHP or Python, including writing basic PHP or Python.

At the end of this course, students will:
- Develop a clear understanding of the basic concepts and principles of database systems
- Design a database application using a relational DBMS
- Describe and apply Structured Query Language (SQL)
- Access and manage database information through web technologies.

Course Materials

Textbook: Tahaghoghi, S. M. M., & Williams, H. E. (2006). *Learning MySQL.* O'Reilly Media (ISBN 13: 978-0596008642).

Additional Web Resources: Students may utilize various other materials are on the web as directed in each module.

Course Format and Schedule

This is an online, asynchronous course. The course includes online lectures (PPT slides), online discussions, exercises, quizzes, assignments (i.e. small projects), and exams. For the purpose of this

course, the week starts on Monday and ends on Sunday. You will be expected to complete all required readings and assignments during the time frame given.

You will need access to an appropriate computer with a broadband Internet connection. (It is advised that you have a Windows-based or Linux-based system.) The Canvas course management system will be used to facilitate this class. Please see the "Technical Requirements" section of this syllabus to learn about this system and the login requirements. Teaching materials (syllabus, course notes, discussions, assignments, resources, etc.) will be made available in Canvas. All assignments should also be submitted via Canvas. You can check your grading status and progress in Canvas. Please visit the Canvas information pages at for more information. (See below.) For technical support, call the UKIT Service Desk at (859) 218-HELP (4357) or email helpdesk@uky.edu.

Communications
All course related communications (online discussions, queries on assignments, etc.) should occur within Canvas. Please post course-related questions on the Canvas discussion board because other students may have the same questions and receive the benefits from answers. Important announcements will be made through Canvas so it is essential that you check Canvas on a regular basis. Failure to receive such announcements cannot be used as an excuse for not being informed.

I use the Canvas Inbox for all course-related email correspondence. In ordinary circumstances, I will respond within 24 hours on weekdays, but you can expect a delay during weekends and holidays. I am also happy to meet with students online, but you should set up the appointment in advance via email. Please note that class communication is done via your official UK email address. You must check this frequently.

ASSIGNMENTS AND GRADING

Your final grade is determined by your performance on the items below.

> Class Participation, 15%
> Homework Assignments, 30%
> Midterm Exam, 25%
> Final Project, 30%

Final grades will be calculated as follows:

> A = 90% and above (Exceptional achievement)
> B = 80%-89% (High achievement)
> C = 70%-79% (Average achievement)
> D = 60%-69% (Below average achievement)
> E = below 60% (Fail)

I do not assign incompletes.

Class Participation

Participation is measured by your contributions to the discussion boards. At various points throughout the semester several discussion topics and online exercises will be posted in the discussion forum. The topics will relate to the course readings and any supplementary material assigned; online exercises are designed to give you hands-on experience using the concepts discussed. You are expected to communicate and collaborate with your classmates in class. Helping each other will also help simulate

problem-solving situations found in a professional workspace.

Homework Assignments & Final Project

All assignments should be submitted through Canvas. Assignments are due by 11:59 p.m. (Eastern) on the due date. Submission dates will be based on the time stamp provided by Canvas. Assignments may be turned in early, though no extra credit is received for this. I will return graded assignments to you in a timely fashion via Canvas. <u>Late assignments will not be accepted</u>.

Midterm Exam

The midterm exam will be posted at least one week before its due date. This will be a test to evaluate your mastery of basic information and concepts covered throughout the semester. It is worth 25% of your final grade.

Competence vs. Skills

Technology changes rapidly. When I first started using a computer I was using CP/M as my operating system, the first Apple computer was still being assembled in a garage, and Microsoft had just released the BASIC programming language on EPROM. All the skills that I obtained during that era are almost completely obsolete. However, the understanding of how software is built and structured stayed with me, which helped me transition through a variety of operating systems as times and needs changed. Computer efficacy is gained through personal effort and, sadly, frustration. It is through a process of searching and trial and error that competence is gained. Please bear that in mind that, while I will give you breadcrumbs to follow in completing your assignments, I require you to put in a personal effort, as my goal is to make you competent administrators not just skilled automatons at whatever software you encounter during your time in this class.

Backups

It is your responsibility alone to maintain backups of your work. Using cloud services such as Dropbox or flash drives to maintain backups will prevent you from losing your work due to unfortunate circumstances. Lost work will not account for an excuse in this course.

Asking for Help

Since this is a technical course you are most likely to encounter issues or get stuck with an assignment. The optimum process for addressing these issues and resolving them (similar to that followed by many professional today) is in the following order:

1. Use a search engine such as Google to search for the issue using a variety of keywords (you can also use descriptive terms related to your problem)
2. Attempt to read the search results and try out their solutions
3. Ask your classmates on the Discussion forums
4. Email me about the issue. In your email you should demonstrate that you have attempted to resolve the issue on your own by including what you have found through a search engine or your post on a forum. Please be specific about your problem. Descriptions like "I have a problem with MySQL" are hardly informative about what your problem may be.

Note: Contact me far enough in advance so that I can respond and you can make adjustments or corrections. While I may respond the same afternoon for emails I receive in the morning, I may not

respond until the next weekday (excluding holidays). Also, keep in mind that I am on the West Coast and so there may be a substantial time difference between us. <u>Do not email me on the due date of the assignment</u>. Get assignments done as far in advance as possible to avoid problems or to give you time to contact me with questions that might arise. You never know when you might need clarification before an assignment is due. This is also a good way to avoid any issues with technology that can and will happen.

Group Work and Collaboration

Although you will be individually evaluated, group collaboration is allowed and encouraged. You are advised to ask questions and collaborate to solve any issues you may encounter with the website development.

COURSE POLICIES

Academic Integrity
According to Senate Regulation 6.3.1: "All academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about a question of plagiarism involving their work, they are obliged to consult their instructors on the matter before submission." For specific information regarding the University's code and regulations on plagiarism and cheating, visit:

> http://www.uky.edu/StudentAffairs/Code/
> http://www.uky.edu/StudentAffairs/Code/part2.html
> http://www.uky.edu/Ombud/Plagiarism.pdf

Academic Accommodations Due to Disability
If you have a documented disability that requires academic accommodations, please contact me as soon as possible. In order to receive accommodations in this course, you must provide a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754) for coordination of campus disability services available to students with disabilities.

Classroom Behavior, Decorum, and Civility
Please be respectful to others in the class and engage in civil discourse when we discuss topics that have a diversity of perspectives. Please help me maintain the most courteous environment by using a little peer pressure if necessary.

TECHNICAL REQUIREMENTS, INFORMATION & RESOURCES

This course will be conducted asynchronously via the Canvas course management system. Please visit the links below to learn about this system and the login requirements:

> https://uk.instructure.com/courses/1096339

To have a successful educational experience in distance learning courses, there are minimum technology requirements that should be met. You can review the minimum recommendations and guidelines for your computer at:

> http://www.uky.edu/ukit/hardwareguide

The UKIT Service Desk is available to help with any computer or technical issue you encounter, 24 hours per day, seven days per week. Contact them at:

http://www.uky.edu/its/customer-support-student-it-enablement/customer-services
Phone: 859-218-4357
Email: 218help@uky.edu

Library and Distance Learning Services
http://www.uky.edu/Libraries/DLLS
Carla Cantagallo, DL Librarian
Local phone number: (859) 257-0500, ext. 2171
Long-distance phone number: (800) 828-0439 (option #6)
Email: dllservice@email.uky.edu
DL Interlibrary Loan Service:
http://www.uky.edu/Libraries/libpage.php?lweb_id=253&llib_id=16

ICT 301-202 COURSE SCHEDULE, Spring 2018
(Schedule is subject to change. Changes will be posted in the Announcements.)
Revised: 4 January 2018

Week	Dates	Topics and Assignments
0	January 10-14	Introduce yourself to the class in the discussion forum.
1	January 15-21	Introduction to Databases
2	January 22-28	Digital Storage and Processing: Hardware
3	January 29-February 4	DBMS-Like Objects Assignment #1 (2/4)
4	February 5-11	Relational Database Design
5	February 12-18	Relational Database Design Assignment #2 (2/18)
6	February 19-25	Relational Algebra Assignment #3 (2/25)
7	February 26-March 4	Introduction to SQL
8	March 5-11	Introduction to SQL Assignment #4 (3/11) Midterm Exam
9	March 12-18	Spring Break
10	March 19-25	CREATING and ALTERING using SQL
11	March 26-April 1	Advanced Querying Assignment #5 (4/1)
12	April 2-8	Advanced Querying Assignment #6 (4/8)
13	April 9-15	User and Privileges Management
14	April 16-22	Data and Database Security
15	April 23-29	Tuning Up Your Server
16	April 30-May 4	Final Project (due 5/4)