Carl H. Lindner College of Business
University of Cincinnati- Spring 2018

IS 6030/ IS 5130 Data Management
Jan 8 - Feb 25, 2017
Meeting Times: Saturdays 1:00 pm- 4:50 pm
Room: Lindner 108

I. Instructor Information:

Name: Dr. Liwei Chen
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II. Course Description:

This course provides an introduction to the use and design of databases to store, manipulate and query data. The course introduces the structured query language (SQL) used to manage data. Students who complete this course should understand how to use SQL for basic data manipulation and queries. This course is intended for users of existing databases to extract needed information and should not be taken by MSIS students or those students who wish to learn detailed database design techniques.

III. Student Learning Outcomes:

Upon successful completion of this course, students will be able to:
- Discuss the needs of data management in businesses.
- Explain the concepts of a well-designed database.
- Use, interpret and design structured query language (SQL) for data definition, data manipulation, and data querying.
- Define the data needs for a project and be able to extract these data from an existing database.

IV. Course Materials:

No required textbooks
- Course materials are provided by instructor in Blackboard.

Required software
- Microsoft SQL Server 2014 Express with Management Studio Tools (free download: https://www.microsoft.com/en-US/download/details.aspx?id=42299)
- R (open source, available from: http://cran.case.edu/
- RStudio: http://www.rstudio.com/products/rstudio/download (GUI for R)
- Tableau (available from: http://www.tableausoftware.com)

Mac and Linux users: SQL Server Express run on Windows only. In order to run Windows applications, I recommend the use of Oracle's VirtualBox, a free virtualization solution that will allow you to install and run Windows and Windows-based software on your Macintosh (Intel-based) or Linux computer. You can download the software and review system requirements at http://www.virtualbox.org.

Optional textbooks
- Jeffrey A. Hoffer; Ramesh Venkataraman; Heikki Topi, *Modern Database Management*, 12th ed. Pearson, 2015
- Narayan S. Umanath and Richard W. Scamell, *Data Modeling & Database Design*, 2nd ed., Cengage Learning, 2015 (ISBN 978-1-285-08525-8)

Optional online learning tools
- Lynda.com online courses. Available at https://www.uc.edu/hr/lldc/training-resources/online-with-lynda.html. Use your campus ID and password to log in and search for various training courses using keywords such as *SQL Server*, *Access*, *Oracle*, etc.

V. Course Communication:

University policy requires that the email set up in Blackboard is the primary means of communication. It is advisable that you use your UC email for this purpose and that you check it often. If you choose to change your email in Blackboard to a non-UC email it is your responsibility to ensure you check it frequently. Please see the attached Student Email Policy for more information: http://www.uc.edu/ content/dam/uc/infosec/docs/ eneral/Policy_StudentEmail.pdf. If you are not familiar with Blackboard, please visit https://kb.uc.edu/kbarticles/blackboard-landing. aspx.

The scope, timing, and due date/time of any required work may be adjusted by the instructor as needed to maximize learning opportunities for students and/or better serve the goals of the course. The syllabus may likewise be modified at the discretion of the instructors. Any adjustments will be communicated to students in class and on Blackboard with as much advance notice as possible.

VI. Course Activities:

Attendance and Participation: Class attendance and participation is critical to learning in this course; so your attendance for scheduled classes is **mandatory**. Absence for a class does not relieve a student from responsibility for the learning the subject matter or completing the assignments.

In evaluating your class participation in discussions, both the quantity and quality of participation are taken into account. Participation mechanisms include:
1. Asking questions asked in class.
2. Responding to questions asked in class.
3. Initiating discussions on new points in class.
4. Participating in and completing occasional in-class exercises.

Homework Assignments: There will be five individual homework assignments. Each assignment is due on the specified date **till 11:59 pm.** Late assignments will be accepted for 24 hours (and only 24 hours) after the due date/time with a 20% penalty. Any submission after this 24 hours window will not be accepted.

All assignment files must be submitted through Blackboard. Make sure to submit all required files include Word documents, Visio files, SQL statements, etc. and check the completeness of the files after the submission.

Exams: One exam will be given based on course materials from lectures and assigned homework. Make-up exams will **NOT** be given. However, exams may be taken on an **earlier** date only if the instructor is given a legitimate reason (jury duties, religious holiday, scheduled surgeries, pregnancy, etc.). Proof of reasons must be scanned and sent to the instructor ahead of time (unless absence was due to a legitimate emergency, in which case legal proof must be sent afterwards).

All work must be your own. Plagiarism or duplicate work will be given (1) a grade of "zero", (2) a point deduction equivalent to one final grade level (i.e. from a B- to a C-), and (3) a charge of academic dishonesty. Both the person copying the work and the person supplying the copy will be penalized equally!

VII. Grading:
There are two grading options for each student, one that includes attendance and homework and one that is based solely on exams.

Activity	Option 1	Option 2
Attendance & Participation	10%	-
Homework Assignments (5)		-
HW 1	5%	-
HW 2	5%	-
HW 3	10%	-
HW 4	15%	-
HW 5	15%	-
Exam	40%	100%
TOTAL	100%	100%

Grading Scale:

Grade	Score	Grade	Score
A	93% - 100%	C+	69% - 73.9%
A-	88% - 92.9%	C	64% - 68.9%
B+	83% - 87.9%	C-	60% - 63.9%
B	79% - 82.9%	D	50% - 59.9%
B -	74% - 78.9%	F	Below 50%

Option 1 is **strongly recommended** as the lectures and homework assignments are designed to help you understand the material and do well on the exams. The instructor will calculate grades both ways and take the higher of the two options.

The grades are absolute, and there will be **no curve grading**. All students have the same opportunity to earn points in the course. Any questions regarding grading of assignments, quizzes, or exams must be addressed **within one week** of return of the graded assignment, quiz or exam to the student.

VIII. Course Policies:

1. *Course Structure:* Students will read class materials, engage in lectures, work in-class examples, and complete homework problems. Main lectures will consist of reviewing homework, presentations, live coding in SQL, and the usage of data tools (MS SQL Server, R and Tableau).

2. *Academic Integrity:* As with all Lindner College of Business efforts, in this course you will be held to the highest ethical standards, critical to building character. Ensuring your integrity is vital and ultimately is your responsibility. To help ensure the alignments of incentives, the Lindner College of Business has implemented a "Two Strikes Policy" regarding Academic Integrity that supplements the UC Student Code of Conduct (see: http://www.uc.edu/conduct/Code_of_Conduct.html)

   - All academic programs at the Lindner College of Business use this "Two Strikes Policy"; any student who has been found responsible for two cases of academic misconduct may be dismissed from the College.
   - All cases of academic misconduct (e.g., copying other students assignments, failure to adequately cite or reference, cheating, plagiarism, falsification, etc.) will be formally reported by faculty; and
   - Students will be afforded due process for allegations as outlined in the policy.

3. *LCB Weather Related Protocol*: When inclement weather threatens the safety of the University of Cincinnati community, the Senior Vice President for Administration and Finance may invoke University Rule 3361: 10-55-01 and declare an emergency closing. The Lindner College of Business will observe the university emergency closing protocol for all on-campus classes. During a university emergency closing, all college offices will be closed.

   Students should clarify with their course instructors how the closure will affect assignments and deadlines, and whether class information from the missed session(s) will be posted on Blackboard, and/or if the class will meet virtually during the closure.
   In the event of inclement weather and the university is closed, the closure will not affect online courses. All course assignments and activities will remain as scheduled in the course syllabus.

4. *Counseling Services, Clifton Campus:* Students have access to counseling and mental health care through the University Health Services (UHS), which can provide both psychotherapy and psychiatric services. In addition, Counseling and Psychological Services (CAPS) can provide professional counseling upon request; students may receive five free counseling sessions through CAPS without insurance. Students are encouraged to seek assistance for anxiety, depression, trauma/assault, adjustment to college life, interpersonal/relational difficulty, sexuality, family conflict, grief and loss, disordered eating and body image, alcohol and substance abuse, anger management, identity development and issues related to diversity, concerns associated with sexual orientation and spirituality concerns, as well as any other issue of concerns. After hours, students may call UHS at 513-556-2564 or CAPS Cares at 513-556-0648. For urgent physician consultation after-hours students may call 513-584-7777.

5. *Title IX:* Title IX is a federal civil rights law that prohibits discrimination on the basis of your actual or perceived sex, gender, gender identity, gender expression, or sexual orientation. Title IX also covers sexual violence, dating or domestic violence, and stalking. If you disclose a Title IX issue to me, I am required forward that information to the Title IX Office. They will follow up with you about how the University can take steps to address the impact on you and the community and make you aware of your rights and resources. Their priority is to make sure you are safe and successful here. You are not required to talk with the Title IX Office. If you would like to make a report of sex or gender-based discrimination, harassment or violence, or if you would like to know more about your rights and resources on campus, you can consult the website www.uc.edu/titleix or contact the office at 556-3349.

IX. Tentative Course Schedule (Subject to Change):

Module	Date	Topic (s):	Deliverables
1	1/13	*CANCELLED*	• First class survey due by 11:59 pm, 1/13

2	1/20	**Introduction to the Course**
		    Database Systems Environment
		Database Development Process
		    Conceptual Modeling: Entity-Relationship (ER) Model
		    Logical Modeling: Relational Schema
		    Physical Modeling
			• Software installation by 11:59 pm, 1/25
			• HW 1 due by 11:59 pm, 1/25

3	1/27	**Getting Started with MS SQL Server Databases**
		Creating and Populating A Database
		    Data Types
		    Table Creation
		    Inserting, Updating, and Deleting Data
		
		Querying A Single Table
		    Basic Query Structure
		    Relational Operators
		    Aggregate Functions
			• HW 2 due by 11:59 pm, 2/1

4	2/3	**Querying A Single Table (Continued)**
		
		Querying Multiple Tables
		    Join
		    Subqueries
			• Mid-term survey due by 11:59 pm, 2/3
			
			• HW 3 due by 11:59 pm, 2/8

5	2/10	**Advanced Queries**
		    Logical Functions
		    Stored Procedures
		    Dynamic SQL
			• HW 4 due by 11:59 pm, 2/15

6	2/17	**Connect Databases to Statistical Tools**
		    Using R with Databases
		    Using Tableau with Databases
		Course Review
			• HW 5 due by 11:59 pm, 2/25

7	2/24	**Exam 2 (closed book)**	