ISOM3260 Database Design and Administration (Spring 2020)

Instructors

	L1	L2 and L3	LA1-LA4
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Textbook	Modern Database Management (13th Edition)		
Course web	https://canvas.ust.hk/		

Please visit Canvas regularly for the updates in the course.

Time and Venue

L1:	Friday 1:30pm to 3:20pm	LSK1005
L2:	Friday 9am to 10:50am	LSK1005
L3:	Friday 11am to 12:50pm	LSK1005
LA1:	Wednesday 10am to 11:50am	LSKG005
LA2:	Monday 4:30pm to 6:20pm	LSKG005
LA3:	Monday 2:30pm to 4:20pm	LSKG005
LA4:	Monday 10am to 11:50am	LSKG005

Overview

This course covers the basic concepts and principles of database design and implementation. Database management systems are the foundation of any information systems. Database systems must effectively store and manage data with integrity and security. This course emphasizes both theories and hands-on experience. The course work includes a group project in which students design and implement a database system to solve a practical business problem. Oracle will be used as the main software package for students to gain hands-on experience.

Course Objectives

In this course, students will learn the fundamentals of database design and development. By attending this course, students will learn how they can develop a database in different stages. Specifically,

- They will learn how to do conceptual modeling.
- They will learn how to do logical database design.
- They will learn how to do physical database design.
- They will learn how to store and manipulate data in relational databases.
- They will learn how to generate management reports from relational databases.

Advanced topics (e.g., data and database administration, etc.) will be covered.

Intended Learning Outcomes

- Describe the database environment, benefits and risks, and development process.
- Analyze how data should be represented and stored in the business information systems.
- Design the data structure in conceptual and logical levels.
- Manipulate the data with structured query language (SQL) and advanced SQL.
- Apply programming skills and construct a realistic business information system.

Grading Scheme [subject to change depending on situation with Covid-19]

Individual
Lab Submissions	10%
Quiz (Lecture and lab materials)	40%

Group
Progress Demonstration	10%
Project Demonstration and Final Report	40%

Tentative Class Schedule

Week	L1-L3 (Friday)	Week	LA1-LA4 (Mon and Wed)
1	21 Feb: Database Fundamentals	2	24, 26 Feb: Introduction to ISOM3260 Labs and Group Project
2	28 Feb: ER Diagram	3	2, 4 Mar: Drawing ER Model using Toad Data Modeler
3	6 Mar: ER Diagram (cont.); Enhanced ER Diagram	4	9, 11 Mar: Creating system prototype using Pencil
4	13 Mar: SQL I	5	16, 18 Mar: Running SQL statements using SQLTools
5	20 Mar: SQL II	6	23, 25 Mar: Free time for Project
6	27 Mar: SQL II (cont.)	7	30 Mar, 1 Apr: Progress Demonstration
7	3 Apr: SQL III	8	6, 8 Apr: Connecting Oracle Database with Oracle Forms/VBA/Java/Python
8	10 Apr: Holiday	9	13 Apr: Holiday 15 Apr: Free time for project
9	17 Apr: Logical Database Design	10	20, 22 Apr: Building Database Applications (1)
10	24 Apr: Logical Database Design (cont.); Physical Database Design	11	27, 29 Apr: Building Database Applications (2)
11	1 May: Holiday	12	4, 6 May: Manager Dashboard
12	8 May: Database Security and Data Administration	13	11, 12 May: Project Demonstration
13	15 May: Quiz (6pm-9pm)		

Note. Schedule is tentative and subject to change. Please check the course website regularly for the updated schedule.

Examination Arrangements and Regulations

Students are required to attend the examinations scheduled by the course instructor and/or Academic Records and Registration (ARR), Academic Registry. If there is a conflict in exam schedule with another course, you should resolve it before the add-drop period (e.g., consider taking a different course during add/drop period).

- If a student is unable to attend a scheduled examination because of illness (must provide medical certificate),

  Quiz: the student may request for a make-up quiz and seek approval from the course instructor, within one week from the missed quiz.

  Final Exam: the student may apply to ARR, Academic Registry within one week from the missed exam for a make-up exam. The student is required to provide appropriate supporting document in the application. A make-up exam can be given only if the application of the make-up exam is approved by all related parties including the course instructor, ARR, Academic Registry, etc.

  Note. The format of the make-up quiz/exam could be different from that of the scheduled exam. The make-up quiz/exam is given on a take-it-or-leave-it basis. No further arrangement will be provided if the student fails to attend the make-up quiz/exam.

- If a scheduled exam is cancelled due to bad weather conditions (http://ugadmin.ust.hk/ug-guide/classes/weather.html),

  Quiz: a rescheduled exam will be arranged by the course instructor.

  Final Exam: a rescheduled exam will be arranged by ARR, Academic Registry. It is possible that the rescheduled final exam is held after the exam period, i.e., 2 June 2019 or even later.

  Students will be notified by email or a public announcement. A student who fails to attend the rescheduled exam is required to apply for the make-up exam and seek approval from all related parties, before a make-up exam can be given.

Grade appeal

Any appeal to score/grade has to be filed through email to your instructors. No appeal of a particular score/grade will be considered 72 hours after its score/grade release day.

Academic honesty

Written work that you hand in is assumed to be original unless your source material is documented appropriately. Using the ideas or words of another person, even a peer, or a web site, as if it were your own, is plagiarism. Cheating and plagiarism are serious academic offenses. Students should read the section on cheating and plagiarism in the HKUST catalog.

Furthermore, students should be aware that faculty members have a range of academic actions available to them in cases of cheating and plagiarism, including failing a student on that particular work, to failing a student in a course, to referring the case to school/university committees for consideration of dismissal from the university program.