ISOM3260 Database Design and Administration (Fall 2024)

Instructors

	L1	**LA1 & LA2**	
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Textbook	Modern Database Management (13th Edition) (HKUST Library: https://lbdiscover.hkust.edu.hk/bib/991012846068003412)		
Course web	https://canvas.ust.hk/ Please visit Canvas regularly for the updates in the course.		

Time and Venue

L1	Friday 9:30am to 11:20am	LSK1014
LA1	Wednesday 9:00am to 11:50am	LSKG005
LA2	Thursday 9:00am 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

<u>Individual</u>
Lab Submissions	10%
Quiz 1	4%
Quiz 2	6%
Midterm Exam	20%
Final Exam	25%

<u>Group</u>
Progress Demonstration	5%
Database System Demonstration	20%
Project Report	10%

The grading scheme and class schedule are subject to change under any special circumstances. Possible changes include, but are not limited to, replacing evaluation components with alternatives, and changing the weighting of evaluation components.

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.

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.

Class Schedule (Tentative)

	Lecture (Friday)		Lab (LA1 on Wednesday & LA2 on Thursday)	
1	Sep 6:	Database Fundamentals	Sep 4, 5:	No Lab
2	Sep 13:	ER Diagram	Sep 11, 12:	Introduction to Labs and Group Project
3	Sep 20:	Enhanced ER Diagram	Sep 18, 19:	Holiday / No Lab
4	Sep 27:	Practice on Conceptual Data Model	Sep 25, 26:	ER Diagram concept review and Project requirements discussion
5	Oct 4:	Midterm Exam	Oct 2, 3:	Drawing ER Model using Data Modeler SQL (DDL)
6	Oct 11:	Holiday	Oct 9, 10:	SQL (DML) Project Development (1)
7	Oct 18:	ER Diagrams Transformation	Oct 16, 17:	Project Development (2)
8	Oct 21-25:	Progress Demonstration		
9	Nov 1:	Normalization	Oct 30, 31:	More about SQL Project Development (3)
10	Nov 8:	Physical Database Design	Nov 6, 7:	Project Development (4)
11	Nov 15:	Database Administration / Security	Nov 13, 14:	Project Development (5)
12	Nov 22:	Final Catchup / Review	Nov 20, 21:	Breakout for Project
13	Nov 25-29:	Database System Demonstration		

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 or other circumstances beyond the student's control,

  Midterm Exam: the student may request for a make-up midterm exam and seek approval from the course instructor, within one week from the missed examination. Appropriate supporting document is required.

  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 and etc.

  Note. The format of the make-up exam could be different from that of the scheduled exam. The make-up 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 exam.

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

  Midterm Exam: 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.

  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.