

ISOM3260 Database Design and Administration (Fall 2021)

Instructors

	L1	LA1
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	(Email subject: [ISOM3260] ...)	
Telephone	2358-8142	2358-7638
Office hours	By appointment	By appointment
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	Tuesday 9:00am to 10:50am	Room 4582 (Lift 27-28)
LA1	Friday 2:30pm to 4:20pm	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.

Course Arrangement

This course is delivered via Blended Learning mode. Students are required to participate in both online and in-class activities.

Online activities

- Students are required to watch online videos and complete online exercises in course website (Canvas) prior to attending most of the classes. Refer to the class schedule for details.
- Online videos and exercises of the week will be published on every Friday of the previous week. Students are expected to complete online activities of the week, prior to attending classes.

In-class activities

- Students are expected to actively participate in the in-class activities. In particular, students may be asked to present their work from the given problem-solving questions. If the students fail to do so, their total marks would be adjusted.

Midterm Exam and Final exam

Students are required to attempt the scheduled exams. Details will be announced later.

Project

Students are expected to form a group and complete a semester-wide project together. Project case and guidelines will be released and discussed during class hours. To deal with potential free-riding behavior, peer evaluation will be conducted after the project submission. The final project grades received by students are subject to the adjustments based on the peer evaluation results.

Grading Scheme

Individual

Online Exercises	5%
Lecture Submissions	5%
Lab Submissions	5%
Midterm Exam	20%
Final Exam	30%

Group

Progress Demonstration	5%
Project Demonstration and Final Report	30%

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)

Week	L1 (Tuesday)	LA1 (Friday)
1	6-Sep: Database Fundamentals	2-Sep: No Lab 9-Sep: Introduction to ISOM3260 Labs and Group Project
2	<u>Online activities: Lecture Videos and Exercise</u> 13-Sep: ER Diagram	<u>Online activities: Lab Videos</u> 16-Sep: Drawing ER Model using Data Modeler
3	<u>Online activities: Lecture Videos and Exercise</u> 20-Sep: Enhanced ER Diagram	<u>Online activities: Lab Videos</u> 23-Sep: Creating System Prototype using Pencil
4	<u>Online activities: Lecture Videos and Exercise</u> 27-Sep: ER Diagrams Transformation	<u>Online activities: Lab Videos</u> 30-Sep: Create Simple User Interface on Python
5	4-Oct: Holiday	<u>Online activities: Lab Videos</u> 7-Oct: Running SQL statements using SQL Developer; Connecting Oracle Database with Python
6	11-Oct: Midterm Exam	14-Oct: Breakout for Project
7	<u>Online activities: Lecture Videos and Exercise</u> 18-Oct: SQL I	21-Oct: Progress Demonstration
8	<u>Online activities: Lecture Videos and Exercise</u> 25-Oct: SQL II	<u>Online activities: Lab Videos</u> 28-Oct: Project Development (1)
9	<u>Online activities: Lecture Videos and Exercise</u> 1-Nov: SQL III	<u>Online activities: Lab Videos</u> 4-Nov: Project Development (2)
10	<u>Online activities: Lecture Videos and Exercise</u> 8-Nov: Normalization	<u>Online activities: Lab Videos</u> 11-Nov: Project Development (3)
11	15-Nov: Physical Database Design Database Administration	<u>Online activities: Lab Videos</u> 18-Nov: Project Development (4)
12	22-Nov: Data Warehousing	25-Nov: Breakout for Project
13	Project 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, i.e., 20 December 2022 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.