ISOM3260 Database Design and Administration (Spring 2025-26)
[Blended-mode]

IMPORTANT:
Attendance and participation in every class is highly recommended, as there are attendance/ participation marks for every week.

Instructors

	L1-L3	LA1-LA4	
Name	Prof. Jia Jia	Mr. Chris S.H. Tse	Mr. Samuel S.Y. Lai
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Textbook	Modern Database Management (13th Edition)		
Course web	https://canvas.ust.hk/		

Note: Please visit Canvas regularly for updates on the course.

Time and Venue

L1:	Monday 9:00am to 10:50am	LSK 1007
L2:	Monday 2:00pm to 3:50pm	LSK 1009
L3:	Monday 11:00am to 12:50pm	LSK 1007
LA1:	Wednesday 3:00pm to 4:50pm	LSK G005
LA2:	Tuesday 11:00am to 12:50pm	LSK G005
LA3:	Tuesday 5:00pm to 6:50pm	LSK G005
LA4:	Wednesday 5:00pm to 6:50pm	LSK G005

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, security, 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 must take responsibility to watch online lecture videos and complete online exercises in course website (Canvas) prior to attending most of the classes. Refer to the class schedule for details.
  - Online lecture videos and online exercises for the week will be published after the previous class. 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 will work in groups to discuss in-class exercises and complete them individually (and upload to canvas during class). It is fine to submit the same solution, so long as it is in your own handwriting. Students will also be picked randomly to present their solutions. After the add/drop registration period, there will be marks deduction if you miss the submission deadline or upload invalid answers (e.g., uploading answer for a different course, etc.). Any plagiarism will result in penalties for both the offending student and the student facilitating the plagiarism.

- **Lab exercises**
  - Students are required to complete the lab exercises individually. No late submission will be accepted.

- **Project**
  - Students are expected to form a group of 5-6 students [within the same lab section] and complete a semester-wide project together. Project case and guidelines will be released and discussed during class. 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 adjustments based on the peer evaluation results.

Grading Scheme

<u>Individual</u>	
Online exercises	5%
Lecture and Lab exercises	10%
Quiz	16%
Exam	29%
<u>Group</u>	
Project milestones	5%
Progress Demonstration	10%
Final demonstration and report	25%

Tentative Class Schedule

[Subject to change]

Week	L1-L3 (Monday)	LA1-LA4 (Tuesday and Wednesday)
1	Online activities: Lecture Videos & Exercise 2 Feb: Database Fundamentals	3, 4 Feb: Introduction to Labs and Project requirements discussion
2	Online activities: Lecture Videos & Exercise 9 Feb: ER Diagram (inclass exercises)	10, 11 Feb: Project Development (1): ER Diagram design for Project
3	Online activities: Lecture Videos & Exercise 16 Feb: Enhanced ER Diagram (inclass exercises)	Online activities: Lab Videos 17, 18 Feb: No Lab – Public holiday
4	Online activities: Lecture Videos & Exercise 23 Feb: Logical Design: Transformation (inclass exercises)	24, 25 Feb: Project Development (2): ER Diagram design feedback
5	Online activities: Lecture Videos & Exercise 2 Mar: Quiz: 6:30pm-8:00pm (Venue: LTA)	Online activities: Lab Videos 3, 4 Mar: Drawing ER Diagram with Oracle Data Modeler
6	Online activities: Lecture Videos & Exercise 9 Mar: Logical Design: Normalization (inclass exercises)	Online activities: Lab Videos 10, 11 Mar: Breakout for Project
7	Online activities: Lecture Videos & Exercise 16 Mar: SQL (DML) (inclass exercises)	Online activities: Lab Videos 17,18 Mar: Project Development (2): Page building and basic triggers
8	Online activities: Lecture Videos & Exercise 23 Mar: Advanced SQL (inclass exercises)	Online activities: Lab Videos 24, 25 Mar: Project Development (3): User friendly objects and validation
9	Online activities: Lecture Videos & Exercise 30 Mar: Physical Database Design	Online activities: Lab Videos 31 Mar, 1 Apr: Project Development (4): More on database application coding
9	6 Apr: No Lab – Midterm break	7, 8 Apr: No Lab – Midterm break
10	13 Apr: Project Progress Demonstration Venue: TBA	14, 15 Apr: No Lab – Project Progress Demonstration
11	Online activities: Lecture Videos & Exercise 20 Apr: Database Administration/Security	Online activities: Lab Videos 21, 22 Apr: Project Development (5): More on database application coding
12	Online activities: Lecture Videos & Exercise 27 Apr: Breakout for Project	28, 29 Apr: Breakout for Project
13	Online activities: Lecture Videos & Exercise 4 May: Project Demonstration	5, 6 May: No Lab – Project Demonstration

	?? May: Exam Venue: TBA	

Examination Arrangements and Regulations

Students are required to attend the examinations scheduled by the course instructor and/or 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 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 will be held only if the application for the make-up exam is approved by all related parties, including the course instructor, Academic Registry, etc.

  Note. The format of the make-up quiz/exam may 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 Academic Registry. It is possible that the rescheduled final exam is held after the exam period 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 website, 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.