

## ISOM3260 Database Design and Administration (Spring 2021-22) [Blended-mode and Hybrid “Lite”]

**IMPORTANT:** Please note that this syllabus/grading scheme is subject to change, depending on the university’s direction on whether classes will revert to face-to-face or be online during the semester.

This syllabus was originally developed for face-to-face class, according to the directive from the university in Dec 2021. In mid-January 2022, the university decided to switch to online classes for 2 weeks, and may revert to face-to-face classes later. If the university does revert to face-to-face classes, the final exam will be on-campus.

Attendance and participation in every class (whether face-to-face or online class) is expected. After the add/drop registration period, there will be a **subgrade penalty for every missed class or if the student does not do the in-class exercises (following the MBA/MSc rules, you may miss one class without penalty)**. This rule is instituted because in previous years, some students registered for the course but did not attend any class at all, and unprepared students did not attend class or logoff zoom when they were called to present their answers for the in-class exercises.

### Instructors

	L1-L3	LA1-LA4
Name	Prof. James Y.L. Thong	Mr. Samuel S.Y. Lai
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Textbook	Modern Database Management (13th Edition)	
Course web	<a href="https://canvas.ust.hk/">https://canvas.ust.hk/</a>	

Please visit Canvas regularly for the updates in the course.

### Time and Venue

L1:	Tuesday 1:00pm to 2:50pm	LSK 1011
L2:	Tuesday 10:30am to 12:20pm	LSK 1007
L3:	Monday 3:00pm to 4:50pm	LSK 1007
LA1:	Thursday 4:00pm to 5:50pm	LSK G005
LA2:	Thursday 2:00pm to 3:50pm	LSK G005
LA3:	Thursday 11:00am to 12:50pm	LSK G005
LA4:	Thursday 9:00am to 10:50am	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, etc.) will be covered.

## Intended Learning Outcomes

- Describe the database environment, benefits and risks, and development process.
- Analyze how data can 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 develop 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 will be asked to present their solutions for the in-class exercises. After the add/drop registration period, there will be a **subgrade penalty for every missed class or if the student does not do the in-class exercises (following the MBA/MSc rules, you may miss one class without penalty).**
- **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 [maximum 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 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 **[subject to change depending on situation with Covid-19]**

### Individual

Online Exercises [for video lectures]	5%
Lecture and Lab exercises	10%
Exam (Project/Lab content)	10%
Exam (Lecture content)	35%

### Group

Project Progress Demonstration	5%
Project Demonstration and Final Report	35%

## Tentative Class Schedule

[Subject to change depending on situation with Covid-19]

Week	L3 (Monday)	L1 and L2 (Tuesday)	LA1-LA4 (Thursday)
1	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 7 Feb: Database Fundamentals	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 8 Feb: Database Fundamentals	10 Feb: Introduction to ISOM3260 Labs and Group Project
2	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 14 Feb: ER Diagram	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 15 Feb: ER Diagram	<a href="#">Online activities: Lab Videos</a> 17 Feb: Drawing ER Model using Data Modeler
3	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 21 Feb: Enhanced ER Diagram	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 22 Feb: Enhanced ER Diagram	<a href="#">Online activities: Lab Videos</a> 24 Feb: Creating System Prototype using Pencil
4	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 28 Feb: ER Diagrams Transformation	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 1 Mar: ER Diagrams Transformation	<a href="#">Online activities: Lab Videos</a> 3 Mar: Create Simple User Interface on Python
5	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 7 Mar: Relational Data Model and SQL I	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 8 Mar: Relational Data Model and SQL I	<a href="#">Online activities: Lab Videos</a> 10 Mar: Running SQL statements using SQL Developer
6	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 14 Mar: SQL II	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 15 Mar: SQL II	<a href="#">Online activities: Lab Videos</a> 17 Mar: Project Development (1)
7	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 21 Mar: SQL III	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 22 Mar: SQL III	<a href="#">Online activities: Lab Videos</a> 24 Mar: Project Development (2)
8	28-31 Mar: <span style="color: red;">Progress Demonstration (Venue: TBD)</span>		
9	4 Apr: <span style="color: red;">Holiday / No Class</span>	5 Apr: <span style="color: red;">Holiday / No Class</span>	<a href="#">Online activities: Lab Videos</a> 7 Apr: Project Development (3)
10	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 11 Apr: Normalization; Physical Database Design	<a href="#">Online activities: Lecture Videos &amp; Exercise</a> 12 Apr: Normalization; Physical Database Design	14 Apr: <span style="color: red;">Mid-term Break</span>
-	18 Apr: <span style="color: red;">Holiday / No Class</span>	19 Apr: <span style="color: red;">Holiday / No Class</span>	<a href="#">Online activities: Lab Videos</a> 21 Apr: Project Development (4)
11	25 Apr: Database Administration/Security	26 Apr: Database Administration/Security	28 Apr: Breakout for Project
12	3-6 May: <span style="color: red;">Project Demonstration (Venue: TBD)</span>		
	Date TBD: <span style="color: red;">Exam</span>		

## 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., 29 May 2021 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.