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 4:00pm to 5:50pm	Room 4582 (Lift 27-28)
LA1	Thursday 3:00pm to 4:50pm	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.

Assignments

Students are required to complete the assignments individually. No late submission will be accepted.

Project

Students are expected to a 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	10%
Lecture Submissions	10%
Lab Submissions	10%
Assignments	30%
Group	
Progress Demonstration	10%
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 (Thursday)
1	Class Enrollment Period	2-Sep: No Lab
2	7-Sep: Database Fundamentals	9-Sep: Introduction to ISOM3260 Labs and Group Project
3	Online activities: Lecture Videos and Exercise 14-Sep: ER Diagram	Online activities: Lab Videos 16-Sep: Drawing ER Model using Data Modeler
4	Online activities: Lecture Videos and Exercise 21-Sep: Enhanced ER Diagram	Online activities: Lab Videos 23-Sep: Creating System Prototype using Pencil
5	Online activities: Lecture Videos and Exercise 28-Sep: Relational Data Model and SQL I	Online activities: Lab Videos 30-Sep: Running SQL statements using SQL Developer; Connecting Oracle Database with Python Breakout for Project
6	Online activities: Lecture Videos and Exercise 5-Oct: SQL II	7-Oct: Breakout for Project
7	Online activities: Lecture Videos and Exercise 12-Oct: SQL III	14-Oct: Holiday
8	Progress Demonstration	
9	Online activities: Lecture Videos and Exercise 26-Oct: ER Diagrams Transformation	Online activities: Lab Videos 28-Oct: Project Development (1)
10	Online activities: Lecture Videos and Exercise 2-Nov: Normalization	Online activities: Lab Videos 4-Nov: Project Development (2)
11	9-Nov: Physical Database Design Database Administration	Online activities: Lab Videos 11-Nov: Project Development (3)
12	16-Nov: Data Warehousing	Online activities: Lab Videos 18-Nov: Project Development (4)
13	Project Demonstration	

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