

## ISOM3260 Database Design and Administration (Fall 2019)

### Instructors

	Lecturer	Tutor
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Telephone	2358-8142	2358-7638
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	<b>Wednesday 12:00pm to 1:50pm</b>	<b>LSKG005</b>
LA1	<b>Friday 12:00pm to 2:50pm</b>	<b>LSKG005</b>

### Overview

This course covers the basic concepts and principles of database design and implementation. Database management systems that are the foundation of any information 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.

Advanced topics (e.g., data and database administration, etc.) will be covered.

### Intended Learning Outcomes

- Describe the database environment, components, benefits and risks.
- 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 extensions of SQL.
- Apply programming skills and construct an authentic information system in the business contexts.

### Grading Scheme

Examinations		
	Midterm Exam (Lecture materials)	27%
	Final Exam (Lecture and lab materials)	40%
Group Project		
	Progress Demonstration	8%
	Project Demonstration and Final Report	25%

## Class Schedule

Week	Lecture (Wednesday)	Lab (Friday)
Week 1	Introduction to ISOM3260	Introduction to Labs and Group Project
Week 2	Entity-Relationship Model I	Class Exercise on Entity-Relationship Model
Week 3	Entity-Relationship Model II	Drawing ER Model using Computer-Aided Software Engineering Tools
Week 4	SQL I	Building a database application - User Interface Creation in Oracle Forms
Week 5	SQL II	Insert, Update and Delete records in Relational Database
Week 6	Revision	<b>Midterm Exam</b> 1pm to 2:30pm, 11-October (TBA)
Week 7	SQL III	Project Consultation
Week 8	PL/SQL (TBC)	<b>Progress Demonstration</b>
Week 9	Logical Database Design I	Validation Triggers and Search Engine
Week 10	Logical Database Design II Physical Database Design	Multiple Records and User-Friendly Objects
Week 11	Database Administration Data Warehousing	Manager Dashboard
Week 12	Revision	Project Dry Run
Week 13	<b>Project Demonstration</b>	
TBA	<b>Final Exam</b>	

Notes: 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 2019 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.