THE UNIVERSITY OF HONG KONG
HKU BUSINESS SCHOOL

IIMT3601 Database Management
Semester 2, 2021-2022

I. Information on Instructor, Tutor, and Course
Instructor: Michael Chau, Ph.D.
Email/Skype/Facebook: mchau@business.hku.hk
URL: http://www.business.hku.hk/~mchau/
Consultation time: by appointment

Lecture hours: Thursday 1:30pm-4:20pm
Class Venue: TT404

Tutor: Mr. Ian Chan (ichanhku@gmail.com)
Tutorial Venue: TBC

Course Website: Class readings, assignments and other related materials will be provided on the course site on Moodle (http://moodle.hku.hk/). Please visit this site frequently.

Pre-requisite: IIMT2601 Management Information Systems
Remarks: Students taking or having taken COMP3278 are not allowed to take this course.

Textbook:
Modern database management (*7th to 12th Edition*)
by Jeffrey A. Hoffer et al.

II. Course Description and Objectives
This course studies the principles of design, development and administration of database management systems for business applications. Emphasis will be placed on the user, developer, and administrator points of view.
Course objectives
1. Provide students with the opportunity to learn the basic concepts of database development and management.
2. Provide students with hands-on experience in designing, developing, and maintaining database systems.
3. Help students understand the role of database in various types of information systems and its importance in real world applications.

III. Learning Outcomes
After taking this course, students should be able to:
1. Define and explain the characteristics, advantages and disadvantages of databases.
2. Describe the importance of data modeling concepts and use these effectively.
3. Describe the tools that comprise a modern database management system.
4. Plan and design a database.
5. Write queries using the Structured Query Language (SQL).
6. Describe the differences between relational databases (e.g., MS Access, MySQL) and non-relational databases (e.g., MongoDB).

IV. Alignment of Faculty Goals and Course Outcomes

Faculty Goals	Course Learning Outcome
1. Acquisition and internalization of knowledge of the program discipline	1,2,3,4,5,6
2. Application and integration of knowledge	4,5,6
3. Inculcating professionalism	4
4. Developing global outlook	1,2
5. Mastering communication skills	2,4,6
6. Cultivating leadership	4

V. Teaching and Learning Activities
Teaching and learning activities for this course include:
1. Lectures
    - Lectures: basic concepts and knowledge will be presented in-class through powerpoint slides.
    - In-class exercises: basic concepts and techniques are illustrated using examples. Students work along with the lecturer to solve the problems. These exercises help students follow the lectures closely and actively.
    - Demonstration: live demonstrations of database systems will be given in class to show students how they work.
2. Tutorial and online discussions
    - Tutorial lab sessions: students practice concepts learned in class in the computer lab and work on examples with the tutor.
    - Online discussions: students express and share their ideas and questions online. These discussions encourage students to think about the class materials after class.
3. Assignments
    - Assignments: students accomplish tasks using technologies covered in class. Through the assignments they can acquire hands-on experience using these technologies.
4. Written examination
    - The exam will test students' knowledge of the topics covered in class and their application of the knowledge.

Course Teaching and Learning Activities	Expected Hours	Study Load (% of study)
T&L1. Lectures	36	30.0%
T&L2. Tutorials and online discussions	12	10.0%
T&L3. Assignments and group activities	36	30.0%
T&L4. Self-study and written exam	36	30.0%
Total	120	100%

VI. Assessment

Learning outcome	Teaching and learning activity	Assessment
1. Define and explain the characteristics, advantages and disadvantages of databases.	Lectures, demonstration, tutorials, online discussions, assignments, exams	Participation in discussions, assignments, exams
2. Describe the importance of data modeling concepts and use these effectively.	Lectures, demonstration, tutorials, online discussions, assignments, exams	Participation in discussions, assignments, exams
3. Describe the tools that comprise a modern database management system.	Lectures, demonstration, tutorials, online discussions, assignments, exams	Participation in discussions, assignments, exams
4. Plan and design a database.	Lectures, demonstration, tutorials, online discussions, assignments, exams	Participation in discussions, assignments, exams
5. Write queries using the Structured Query Language (SQL).	Lectures, demonstration, tutorials, online discussions, assignments, exams	Participation in discussions, assignments, exams
6. Describe the differences between relational databases and non-relational databases.	Lectures, demonstration, tutorials, online discussions, assignments, exams	Participation in discussions, assignments, exams

VII. Standards for assessment
Assignments (30%)
Three individual assignments will be given. Students will have approximately two weeks to complete each assignment. Make sure to work on the assignments individually and do not share with others. Please be prompt in submitting assignments. If a submission is late for 24 hours or less, 20% will be deducted. If a submission is late for more than 24 hours, no credit will be given.
Exams (50%)
There will be one written exam. Students must receive permission to take an exam at a different time at least one week prior to the scheduled date and have a documented emergency. Failure to do so will result in a zero for the exam. Other exams/projects during the same week do not constitute a valid excuse.
Class Participation (20%)
Class participation will be assessed based on both participation and online discussion.

Assignments, exams, and class participation are graded using the following criteria:
- A+, A, A- : demonstrate a clear understanding of and high ability to apply the theory, concepts and issues relating to the topic
- B+, B, B-: demonstrate a good understanding and some application of the theory, concepts and issues relating to the topic
- C+, C, C-: demonstrate a good understanding of the theory, concepts and issues relating to the topic but limited application relating to the topic
- D+, D: demonstrate mainly description showing basic understanding of the topic but no application
- F: demonstrate limited understanding of the topic and draw conclusions unrelated to the topic

VIII. Academic Conduct

Plagiarism will be reported to the University. Plagiarism and sharing of assignments with others are serious offences and may lead to disciplinary actions. Students should read the chapters on "Plagiarism" and "Copyright" in the Undergraduate/Postgraduate Handbook for details. Students are strongly advised to read the booklet entitled "What is Plagiarism" which was distributed to students upon admission into the University, a copy of which can be found at www.hku.hk/plagiarism. A booklet entitled "Plagiarism and How to Avoid it" is also available from the Main Library.

IX. Course Schedule

Week	Date	Topic	Submission
1	Jan 20 (Thu)	Course Introduction The Database Environment (Ch. 1)	
2	Jan 27 (Thu)	The Database Development Process (Ch. 2)	
	Feb 1 – Feb 7	*-- Lunar New Year Holiday --*	
3	Feb 10 (Thu)	The Enhanced ER Model (Ch. 3-4)	
4	Feb 17 (Thu)	The Enhanced ER Model (Ch. 3-4)	
5	Feb 24 (Thu)	Logical Database Design and Normalization (Ch. 5)	
6	Mar 3 (Thu)	Logical Database Design and Normalization (Ch. 5)	**Assignment 1**
7	Mar 7 – 12	*-- Reading Week --*	
8	Mar 17 (Thu)	Physical Database Design (Ch. 6)	
9	Mar 24 (Thu)	Introduction to SQL (Ch. 7)	
10	Mar 31 (Thu)	Advanced SQL (Ch. 8)	**Assignment 2**
11	Apr 7 (Thu)	Non-relational Databases (NoSQL)	
12	Apr 14 (Thu)	Non-relational Databases (NoSQL)	
13	Apr 21 (Thu)	The Client-Server Database Environment (Ch. 9)	**Assignment 3**
14	Apr 28 (Thu)	**Written Exam**	

Note: MS Access, MySQL, and MongoDB will be introduced in this course.