Capital University of Economics and Business
Overseas Chinese College
Course Syllabus

Year and Semester	2020 September (1-17 week)
Course Name	Advanced Database Management
Course Code	MIS303
Course Type	☐ General Education (Required) ☐ General Education (Elective) ☐ Professional Course (Required) ☑ Professional Course (Elective) ☐ Basic Disciplinary Course
Course Credits	3
Course Hours	51
Prerequisites	Database System Concepts
Instructor	Guanyu Liu
Contact Information	Office: XingZhiBuilding 314 Tele: (010)83951181 Email: liuguanyu@cueb.edu.cn
Office Hour	W: 13:30—15:30; Th: 13:30—15:30; F: 10:00—12:00
Learning Centre	M: 18:00—20:00; T: 13:30—15:30
Grade/Section	2018IT
Course Time/Place	M: 10:10—12:00 / B208; TH:10:10—11:00/B208

Textbook

Database Systems Concept, 6th Edition by Abraham Silberschatz , Henry F Korth and S, Sudarshan , ISBN: 978-1-292-00486-0

Reference Book

1. Database Processing – Fundamentals, Design, and Implementation
ISBN 978-7-04-019245-2

The textbook and reference book mainly cover the knowledge that instructor introduced in the class, but not limited to these books, students should have the ability to search and expose to the resources to support your study.

Course Description

This course is for students to obtain principles of database systems. We will focus mainly on relational data models and relational query operations, together with SQL for data definitions and queries. The course will also involve a multi-part project using Sql Server. Students undertake a semester project that includes the query design using Sql Server.

Student Learning Objectives

After completing this course, students will be able to:

At the completion of this unit students will have knowledge and understanding of:

- the major objectives of database technology;
- the relational model for databases and competing models;
- the techniques and tools to design and implement a database suitable for an information system;
- a database retrieval and manipulation language;

Website Source

1. https://www.icourse163.org/course/RUC-488001
2. https://www.icourse163.org/course/RUC-1001655006

Teaching Methods

This course contains lectures, class discussions, homework, quizzes, presentation and exams. Textbook content will be introduced first. Then real case and practice questions will be delivered to students as a way to test their understanding of the knowledge. This will require individual or group assignment in class.

Grade Criterion

Component	Weight	Description
Final Exam	20%	A cumulative final examination will be given based on all of the contents of the class. The exam paper may be composed of multiple-choice questions, short answer questions, essay questions and practice problems. Students should rely primarily on homework assignments to give them a sense of what they may see for material on exams.
Mid-Term Test	20%	A cumulative midterm test will be given based on all of the contents that have been taught in class. The test paper may be mainly composed of multiple-choice questions and it should be completed within 60 minutes in class.
Homework	15%	Most of the assigned homework is taken from the Exercises in the textbook. Assignments will be collected at the clearly stated date. Late assignments will not be accepted. The graded assignments will be kept by the tutor for reference and won't be returned to students.
Quizzes	15%	There will be at least 2 quizzes during the semester. Quizzes may or may not be announced in advance. It may also be used as a way to check the attendance. Quizzes will test your knowledge of both concepts and the application of those concepts.
Presentation	10%	The students will be divided into several groups to prepare a presentation. Each student is required to be involved in the presentation. The topics can be selected from the textbook or lectures. Each group need to finish a PPT related to the topic which is given and hand in the related resources to the teacher before the presentation.

Participation	10%	Individuals will be asked to participate individually in a question and answer at least 5 times during the semester. The performances should be counted in their participation.
Attendance	10%	Refer to attendance policy listed below
Total	100%	

Detailed Grade Computation

	Before Midterm	After Midterm
Attendance	5%	5%
Participation	5%	5%
Homework	5%	10%
Quizzes	5%	10%
Presentation		10%
Midterm test	20%	
Final exam		20%
Total	40%	60%

Grading Policy

A+ 97-100	A 93-96	A- 90–92	B+ 87-89	B 83-86	B- 80–82
C+ 75-79	C 70-74	C- 67–69	D+ 63–66	D 62-60	F 0- 59

Exam Schedule

Midterm Test: April 21/23, 2020; Final Exam: June 15-19, 2020

Assessment of Student Performance

☞ Self-Study and Reading ability Practice

Instructor will give out the chapters or the reference books to read and use class hours to have discussion; students should be able to show a proactive attitude and ability for self-study and reading. Knowledge and oral English will be elements of homework or presentation score.

☞ Homework

Students should finish their homework by themselves. Copying from others will be treated as cheating and the homework scores will be lowered. Students should hand in all assignments on time. Late assignments will be accepted at the discretion of the instructor (i.e., when the student was ill or had an excused absence). Late assignments without reasonable proof will be reduced in score by 50%.

☞ Attendance

Because the course covers a great deal of material, attending every class session is very important for performing well.

- Being late for 15 minutes or more is considered an absence.
- Five hours or above of unexcused absences will result in the lower level of the final grade by one grade band (e.g. from C – to D +). Any excused absence must be discussed directly with the teacher.
- Absence which is more than 1/3 of the total teaching hours will cause an F (a failing grade) directly. but students are welcome to continue attending classes.
- An incomplete grade (I) will be considered in case of medical or family emergencies.

☞ ***Participation***

- Students should participate in classes actively. Half of participation grade is determined by their presentation in class. They are encouraged to ask questions relevant to the subject and express their own opinions. Every student should respect the ideas, opinions, and questions of their classmates.
- Students should also use office hours to ask questions or talk with the instructor for good communication and effective learning.
- Frequent visiting the instructor and chatting in English during office hours is highly recommended.
- Any misbehavior and non-class related activities in class will result in the lower level of the participation grade, including ringing cell phones.
- All above behaviors will be solely evaluated by the instructor for scoring.

☞ ***Textbook***

Students must bring the textbook to class.

Topical Course Outline

Week	Topics	Homework
1	● Course Introduction and Syllabus	——
2	● Chapter 1 • Relational Database Theory • Functional Dependencies and Paradigm	—— ——
3	● Chapter 1 • Functional Dependencies and Paradigm • Axiom system of Functional Dependencies	——
4	● Chapter 2 • Database Design • Database Design – Requirement Analysis • Database Design – ER Model and Design • Database Design – Logic Design • Database Design – Physical Design	——
5	● Chapter 3 • Database Security • Database Security Control • View Mechanisms • Auditing • Data Encryption	
6	● Chapter 4 • Database Integrity • Entity Integrity • Reference Integrity • Customized Integrity • Trigger	——
7	● Chapter 5 • Database Programming • Inserted SQL • Progressed SQL	——

8	● Chapter 5 • Database Programming • ODBC Programming • JDBC Programming	**Textbook Page 58:** Exercise 3-8 **Textbook Page 58:** Exercise 3-9
9	● Chapter 6 • Relational Query Processing • Relational Query Optimization	——
10	● **Midterm Test** ● Chapter 7 • Basic concepts of transactions • An overview of database recovery • Database recovery Technique • Database Mirroring	——
11	● Chapter 8 –Business Intelligence • Data Warehouse • Business Intelligence	——
12	● Chapter 9 – Data Mining • Introduction of Data, big-data, data-mining • Three data mining techniques	——
13	● Chapter 9 – Data Mining • Three data mining techniques • Classification, Clustering, Association	——
14	● Chapter 10 • Basic concepts of Concurrent Control • Lock • Serializability of concurrent scheduling • Multiple Granularity Locking	——
15	● Chapter 11 • MS SQL Server • Database Design and Query Tools • MS SQL Server – Save and Index • MS SQL Server – Query Processing and Optimization	——
16	● Chapter 11 • MS SQL Server • MS SQL Server – Concurrent Control and Recovery • MS SQL Server – System Structure and Mechanisms • MS SQL Server – Copy, Distribution and Outsource Data • MS SQL Server – Business Intelligence	**Textbook Page 722:** Exercise 1
17	Final Review	——

Note: *Some chapters or sections may leave for self-study, this is the students' duty to learn and understand, they may also be included in the quizzes or exams.*

A review in Chinese may be held during L.C. and O.H. in the semester.

Teacher's Office Hour

- The instructor's office hour is shown in the front of the office door.
- Students are suggested to use the instructor's office hour and learning center to ask questions or talk with the instructor once at least per week for good communication and effective learning, which is recorded in the students' participation.
- The time can be scheduled by instructors or students, or both.

Cheating and Plagiarism

Cheating is not tolerated. Any student caught cheating on a quiz; test or exam will be given a mark of zero (0) for the particular work. At the beginning of the semester the definition of plagiarism will be carefully explained, when any thoughts or writings of another person are used, they must be clearly identified (usually one uses quotation marks) and the source notes. **If any student is caught cheating on any homework assignment, the highest score the student can earn in that course is a "C".**

Note: *This syllabus is tentative and may be changed or modified throughout the semester. All students will be notified and a new syllabus will be given.*

Instructor: Guanyu Liu **Department Head:** Jingning Li