

## **CIS 4680: Data Resource Management Fall 2009**

**Instructor:** Dr. Qingxiong Ma

**Class Hours:** M W– 3:30 pm to 4:45 pm

**Class Room** WDE 2107

**Office Hours:** Monday, Wednesday 10:00am – 12:00pm      Friday 11:00am – 12:00pm,  
Dockery 300B. Other times by appointment

**Office Location:** 300B Dockery

**Phone:** 660-441-1694

**Email:** [qma@ucmo.edu](mailto:qma@ucmo.edu)

**Course Website:** Blackboard

### **COURSE DESCRIPTION:**

This course will provide the student with in-depth knowledge of Advanced Database knowledge such as Oracle's PL/SQL, Triggers, Stored Procedures, Object Oriented Database Design, Database Administration, Transaction Management and Concurrency Control, Database Security, Distributed Database Management Systems, Data Warehousing, Data Mining, and Web Database Development (XML and web services).

### **COURSE OBJECTIVES:**

1. \*Gaining factual knowledge (trends, terminology, methods).
2. \*\*Learning fundamental principles and theories.
3. \*\*Learning to apply course material (to improve understanding and problem solving)
4. \*Developing specific skills and competencies needed by CIS professionals related to this course.

**Prerequisite:** CIS 3650 and CIS 2665 or admittance to the MBA-IS or MSIT programs.

**Textbook:** Handout for each chapter will be given by the instructor in the class.

**Additional Materials:** 3 Scantrons (Form 882-ES) and portal storage medium

**Software:** MS Visio for EE-R diagram,  
Oracle DBMS 10g Release 2 for advanced SQL and administration  
Oracle Data Miner  
Oracle Warehouse Builder for business Intelligence  
MS Visual studio 2008 for ADO.NET

### **LEARNING COMPONENTS:**

- a) Technology
- b) Business Knowledge

### c) People Skills

#### **COURSE OUTCOMES:**

After completion of this course, students will be able to perform all the following in the context of business problem solving:

1. Understand the advanced database concepts
2. Write advanced PL/SQL programming blocks such as triggers and stored procedures
3. Understand object oriented data modeling
4. Design object-relational database
5. Know how to administer a database and create user account
6. Understand concurrency control, security and transaction management.
7. Understand data mining and know how to use Oracle Data Miner
8. Understand data warehouses and know how to use Oracle Warehouse Builder create components such as dimensions and cubes.
9. Understand and write XML web services to access database

#### **GRADING:**

Final course grades will be determined based on your final weighted score using the following fixed percentage cutoffs. Please be noted that the final course grade will not be rounded up. For example, in order to receive an A, your final course score must be 90.00 or above.

A = 90.00% or above

B = 80.00% to 89.99%

C = 70.00 to 79.99%

D = 60.00% to 69.99%

F = less than 60.00%

#### **Course Requirements:**

Activity	Possible Points
<b>Homework:</b>	<b>130</b>
1: PL/SQL blocks	20
2: Triggers and stored procedures	20
3: EER diagram and relational Model	10
4: Convert an EER diagram to an object relational model	10
5: Object-relational Database	20
6: Database Administration and Security	10
7: Creating offline backups	10
8: Create .NET application to show multimedia files from Oracle database	10
9: Oracle transaction management in .NET	10
10: Create dimension and cube	10
<b>Participation &amp; Attendance</b>	<b>50</b>
<b>Group project</b>	<b>30</b>
<b>Exams (3)</b>	<b>300</b>
<b>Total</b>	<b>510</b>

## Policies:

- **Handouts:** Handouts will be regularly distributed in class. Most of the material will be posted on the course web site after each class.
- **Class Participation and Attendance:** You are expected to read the assigned reading material, work diligently toward the completion of assignments, attend classes regularly and participate in all discussions, presentations, and activities constructively. In addition, you are expected to show respect, collegiality, and good citizenship toward others in the class. Permission will be given only in case of an emergency. Each absence is worth 10 points. If you have more than 5 absences, you automatically lose the opportunity to take the final exam. It is your responsibility to inform the instructor if you are late for the class. Every two times of tardiness will be considered as one absence.
- **Missed Tests:** No make-up examinations will be given except for university-approved emergencies. If you anticipate problems regarding scheduled test or class activity, please see me in advance to make alternative arrangements.
- **Late submission:** Meeting deadlines for class assignments is very important. Late assignments will be penalized. There will be a penalty of 20% of the assignment's maximal grade (i.e. 20 pts on a 100-point base) per calendar day for late submission, and no late submission will be graded after the solution of the assignment is discussed in the class. Excuses such as *the system was down, the printer was running out of paper or ink cartridges, or there was a virus on your diskette, you were not being able to get onto a computer or printer in the labs, or having your computer's hard drive crash at the last minute* are not acceptable.
- **Team Work:** Project and some of homework are to be done in teams. The teams may consist of no more than 3 members. All team members are expected to contribute equally and fairly to the team activities. If you encounter difficulties in the smooth functioning of the team, bring it to instructor's attention early.
- **Announcements:** Announcements will be made in class about changes in schedules, computer lab meetings, assignments, exams, readings, policies and other class activities. It is entirely your responsibility to attend classes and keep abreast of the announcements and changes. Important announcements may also be posted on the course web site.
- **Academic Misconduct:** All assignments and tests should be the product of individual effort. Feel free to discuss problems, but make sure that what you turn in is the product of your own. No form of reference material may be used during an examination. Students are expected to understand and follow the Harmon College of Business Administration Code of Conduct ([www.ucmo.edu/x9595.xml](http://www.ucmo.edu/x9595.xml)). Any form of copying, either on computer assignments or tests, will be considered academic misconduct and will be dealt with according to the Honesty and/or Computer Network procedures on page 129-151 of the student handbook.
- **Disabilities:** Any student who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible to discuss accommodations necessary to ensure full participation and facilitate the student's educational opportunity. Students with documented disabilities who are seeking academic accommodations should contact the Office of Accessibility Services, Union 220, (V) (TTY) 660-543-4421.

- **Special Note:** Please turn off your cell phone when you are in the classroom.•

**Tentative Schedule:** (as of 8-20-2009)

Wk	Date	Topics	Chapters	Readings and Assignments
1	Aug. 19	Course Orientation	Chapter 1 Chapter 2	<a href="#">Oracle Certification Program</a>
2	Aug. 24	Getting started with Oracle DBMS		<a href="#">Oracle Database SQL Reference</a> <a href="#">SQL*Plus® User's Guide and Reference</a>
	Aug. 26	Practices on Oracle DBMS	Chapter 2	
3	Aug. 31	Advanced SQL (Views, Synonyms, Sequences)	Chapter 3	<a href="#">PL/SQL Tutorial</a> <a href="#">Introduction to Oracle PL/SQL Programming</a>
	Sept. 2	Advanced SQL (PL/SQL blocks)	Chapter 4	Homework 1: PL/SQL blocks
4	Sept. 7	<b>Labor Day</b>		
	Sept. 9	Advanced SQL (PL/SQL blocks)	Chapter 4	
5	Sept. 14	Advanced SQL (Cursors, triggers, stored procedures)	Chapter 5	Homework 2: triggers and procedures
	Sept. 16	Homework 2 Explanation Practices on using cursors, triggers, and stored procedures to solve business problems	Chapter 6	
6	Sept. 21	Homework 3 Explanation Review E-RD, Relational Model, The EE-R Diagram (Generalization/Union)	Chapter 7	Homework 3: Convert an E-ER diagram to a object-relational model
	Sept. 23	Mapping an EE-R diagram to a Relational Model	Chapter 8	Homework 4: Object relational Model
7	Sept. 28	ORDB Model Converting EE-R Diagram to an ORDB The Object-Oriented Model	Chapter 8	<a href="#">Object Database Tutorial</a> <a href="#">Object-oriented database articles and products</a>
	Sept. 30	<b>Exam 1</b>		
8	Oct. 5	Exam 1 Review Database Structure	Chapter 9	<a href="#">Oracle Database 10g: The Top 20 Features for DBAs</a> <a href="#">Oracle Transactions</a>
	Oct. 7	Database Structure Database Security in Oracle	Chapter 10	<a href="#">Oracle Administering Users and Security</a> Homework 5: Database Administration and Security (using OEM create a table space, create a new user with special privileges, and create user via granting roles)
9	Oct. 12	Database Security in Oracle	Chapter 10	
	Oct. 14	Backup and Recovery	Chapter 11	Homework 6: Steps to creating offline backups (grading is based on operability)
10	Oct. 19	Large Objects	Chapter 12	Homework 7: Create .NET application to display images from oracle database

	Oct. 21	Large Objects	Chapter 12	
11	Oct. 26			
	Oct. 28			
12	Nov. 2	<b>Exam 2</b>		
	Nov. 4	<i>Large Objects</i>	Chapter 12	<a href="#">Oracle distributed database</a> , <i>Group Presentation1</i>
13	Nov. 9	<i>Distributed Database</i>	Chapter 14	
	Nov. 11	XML and Database	Chapter 15	
14	Nov. 16	<i>Business Intelligence Data Mining</i>	Chapter 16	<a href="#">Data Mining 101</a> , <i>Group Presentation2</i>
	Nov. 18	<i>Data Mining Oracle Data Miner Data Mining (setup) and Examples</i>	Chapter 16	<i>Group Presentation 3</i>
15	Nov. 23	<b>Class dismissed</b>		
	Nov. 25	<b>Thanksgiving</b>		
16	Nov. 30	Data Warehouses	Chapter 17	Homework 8: Create dimension and cube using Oracle Warehouse Builder
	Dec. 2	Oracle Warehouse BuilderExamples	Chapter 17	<a href="#">Oracle Grid Computing</a>
17	Dec. 9	<b>Final (3:00 - 5:00pm)</b>		

**Note:** The above schedule is subject to change if it is deemed appropriate at the instructor's discretion.