



MIS 542 – Management of Database Systems

Credit Hours: 3

Term Year: Spring 2012

Section : Online, To Access the Course Web site visit bb.uis.edu

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Course Description

Database design theory and development techniques are covered where the main focus is on the relational databases. Topics discussed include data modeling theories (entity-relationship diagrams) and theory implementation in CASE tools, data definition language to create physical databases in commercially available RDBMS such as Oracle 10g and 11g, data manipulation language and Structure Query Language (SQL) to manage data within the database, client/server, distributed and Internet databases architectures, form and report design. The main goal is to train the students to assume roles such as database analyst/designer or administrator throughout their professional career. Access to the Internet is required.

Course Objectives

1. This course is to prepare student with fundamental knowledge to become a Database Administrator (DBA).
2. This course provides information about current trends in database development and popular DBMS products.
3. This course gives student an opportunity to work with a group building a working database system.

Prerequisites

MIS502, MIS552. Restricted to graduate students.

Reasonable accommodations are available for students who have a documented disability. Please notify the instructor during the first week of class of any accommodations needed for the course. Late notification may cause the requested accommodations to be unavailable. All accommodations must be approved through the Office of Disability Services (ODS) in the Human Resources Building (HRB), Room 80, 217-206-6666.

Learning Outcomes

After completing this course, students

1. can use SQL SELECT statement to retrieve data from an existing database.
2. can describe and to use Data Definition Language (DDL) and Data Manipulation Language (DML).
3. can discuss popular Database Design methodology with confidence.
4. can analyze data requirements using Entity-Relation Diagram (ERD).
5. can use normalization rules to minimize database abnormality.
6. can build a relational database using a popular Database Management System (DBMS, currently, Oracle 11g).
7. are knowledgeable about user management in DBMS.
8. can build interfaces to interact with relational database through database access standards (ODBC, JDBC, and XML).
9. can describe and argue the potential of using database as business intelligent systems.
10. are familiar with DBMS products and market dynamic.

Required Text

Required: Database Processing: Fundamentals, Design, and Implementation, By David M. Kroenke, Published by Prentice Hall, 11th edition, 2009, ISBN-10: 0132302675 ISBN-13: 978-0132302678

Optional: Oracle Database 11g (or 10g): The complete reference, by Kevin Loney, Published by Oracle Press/McGraw Hill, 2008, ISBN-10: 0071598758, ISBN-13: 978-0071598750

Course Calendar

Week	Course Content	Learning Outcome	Assessment Methods (Assignments, Quizzes, and Project)
1/17-1/22 ☀	Chapter 1: Introduction Applying for UIS Oracle Account (Chapter 10, 10A, & 10B) (1/16 Martin Luther King Jr. Observance, Campus Closed)	3	Week 1 assignment: Screen Capture of Oracle Account
1/23-1/29 ☀	Chapter 2: Introduction to SQL Upload, Backup Database 1/23 Chinese New Year	1 6	Week 2 assignment: Create database from existing backup Quiz 1 (Chapter 1 & 2) Project Assignment Given

Week	Course Content	Learning Outcome	Assessment Methods (Assignments, Quizzes, and Project)
1/30-2/5 ☀	Chapter 3: The relational model and normalization Appendix I: Web server & PHP	3, 5	Week 3 assignment: SQL select statement exercise Quiz 2 (Chapter 3)
2/6-2/12 ☀	Chapter 4: Database Design Using Normalization	5	Week 4 assignment: Normalization problems Quiz 3 (Chapter 4)
2/13-2/19	Chapter 5: Data Modeling with ER model Appendix C & Appendix D	4	Week 5 assignment: ER Modeling Quiz 4 (Chapter 5)
2/20-2/26	Chapter 6: Transforming Data Models into Database Design	2	Week 6 assignment: Normalization & Table creation Quiz 5 (Chapter 6) Project Milestone 1, Due: ER model with normalized design. Create tables in DBMS.
2/27-3/4	Chapter 7: SQL for Database Construction and Application Processing	6	Week 7 assignment: advance SQL for report purpose Quiz 6 (Chapter 7)
3/5-3/11	Chapter 8: Database Redesign	5	Week 8 assignment: Modify tables Quiz 7 (Chapter 8)
3/12-3/18	Spring Recess (No Class, No Office Hour)		
3/19-3/25 ☀	Chapter 9: Managing Multi-user database	7	Take Home Exam Given on 3/19 (Chapter 1-8) Week 9 assignment: users in Oracle database Quiz 8 (Chapter 9) Project Milestone 2: Well defined tables on Oracle database. Populated Tables.

Week	Course Content	Learning Outcome	Assessment Methods (Assignments, Quizzes, and Project)
3/26-4/1	Chapter 10, 10A,10B: Managing Database with Oracle, SQL Server 2008, and MySQL	1, 10	Week 10 assignment: Create Web Interface for Database Quiz 9 (Chapter 10)
4/2-4/8 ☀	Chapter 11: The Web Server Environment	8, 10	4/2 Take Home Exam Due Quiz 10 (Chapter 11) Project Milestone 3: Web Form Design for basic DUI functions.
4/9-4/15	Chapter 12: Data Processing with XML	8, 10	Quiz 11 (Chapter 12)
4/16-4/22 ☀	Chapter 13: Data Processing with Business Intelligence Systems	8, 10	Quiz 12 (Chapter 13) Project Milestone 4: Web pages for database access Reports and finalized (working) queries.
4/23-4/29	OLAP, Data Visualization, and Executive Dashboard	9	
4/30-5/6 ☀	Course Reflection and Project Sharing	6	Final Project Feedback
5/7-5/11	Final Week 5/12 UIS Commencement		5/10 All Quizzes and Assignments submission will be closed from the Blackboard.

Weeks marked with ☀ are days that on campus session are held.

Course Requirements

This course is designed based on a 16-week semester schedule. The course materials and Student Activities are organized on the [Course Materials page](#). Students should follow the [Course Materials page](#) to schedule their weekly activities. These course materials include reading assignments, software tutorials, weekly assignments, weekly quizzes, project assignments and project milestone assignments. Contents will be added weekly to the Blackboard systems. You are expected to complete these requirements based on the deadlines specified each week on the Assignment page. Specific requirements for different types of assignments are explained below. Please note that all weekly assignments are individual assignments. You can discuss weekly assignment, technical know-how, and experiences on the course discussion forum with your classmates. However, [you have to submit your own assignment through the corresponding assignment page to receive credits for your work](#). The Project assignment is a group assignment.

You can choose to work on the project all by yourself or with a 2-4 person group. (The maximum number of group members for a project group is 4.)

- **Weekly Assignments:** Due to the technical nature of this course, tutorials are given frequently during the semester. To ensure proper learning through these tutorials, weekly assignments are given. Typically, weekly assignment asks you to capture a few screen shots during the process of completing the tutorial. You may be working on the textbook questions. Or, you may be asked a few questions as evidence of following the tutorial. Weekly assignments are posted on the [Course Materials Page](#) within the weekly folder.
- **Quizzes:** Quizzes are designed to evaluate your understanding from the weekly reading assignments. Quizzes are in the formats of multiple choice and short answer questions. Each quiz is weighted 10 points. Totally 12 quizzes will be given (see the course calendar). The high 10 quiz scores will be counted toward your final grade. All quizzes are open-book quizzes. Quiz has deadline. Students cannot discuss the quiz questions with your classmates before the deadline. Typical deadline for a quiz is 10 days after the quiz is posted. The instructor reserves the right to change the deadline as necessary.
- **Take Home Exam:** One take home exam is schedule to test you the core database knowledge. This exam is given on 3/19 and will remain open until 4/2. You will have 4 hours to complete roughly 30 multiple choice question and 10 short answer questions. This exam is an open book exam. Plagiarizing your classmates' answer or sharing exam questions to your friends is prohibited.
- **Project Assignment:** Project assignment is the milestone of completing this course. The project assignment evaluates your ability to use DBMS and your database knowledge to carry out a independent system. Knowledge from both Tutorials and Textbook reading is required for you to complete this project. Details about project assignment will be listed in a separate document (released in Week 2). This project assignment a group assignment. Each group is consisted of 1-4 students. You have to form your group by yourself. The professor will not assign a group for you.
- **Project Milestone Assignment:** To ensure proper project management, project milestone assignments are given. This is not a separate assignment from your project assignment. Instead, it is an opportunity to submit partial project and receive feedbacks from your instructor. On time submission and reasonable work on the Milestone assignment will receive full credits. There is no penalty applied for technical mistake made in your submissions.

Grading

Quizzes	100 points
Weekly assignments	50 points
Take Home Exam	50 points
Project Assignments	80 points
On Time Milestone Submission	20 points
Total	300 points

Grade Ranges

275 points or higher: A
260 to 274 points: A-
250 to 260 points: B+
240 to 249 points: B
225 to 239 points: B-
210 to 224 points: C+
190 to 209 points: C
180 to 189 points: C-
170 to 179 points: D+
160 to 169 points: D
Below 159 points: F

Communication with Instructor

The best way to communicate with your instructor is through UIS e-mail. E-mail received during the business days will be replied within 24 hours. E-mail received during the weekend or holiday will be replied on the following business day. You can also post message to the discussion forum titled "Professor's Office" on the Blackboard. The policy about the message posted on the Professor's Office Forum is the same as e-mail.

You can also call Dr. Wang through his Google Voice number. This number will direct your phone call to any location where Dr. Wang is. If he cannot answer your phone call, please do leave a voice message. You can find this phone number at the beginning of this syllabus.

If you reach a deadlock during the process of working on the tutorial, you can request "Remote Assistant" from your professor. Your professor uses GoToMeeting to give you live help session. Please contact your professor to setup appointment if you need one.

Plagiarism

The university plagiarism policy as stated in the UIS catalog applies: "If you are alleged to have committed plagiarism, your instructor may refuse to grade the assignment and record it as no credit. Penalties may include no credit (i.e., failure) in the course as well as recommendation for disciplinary probation, suspension, or dismissal from the class, program; or UIS." By enrolling in this course, you agree that all of your course work including postings on the class courseware site, at the instructor's discretion, may be sent to a plagiarism checking service.