

ITM 431-001
Database Systems II
Fall 2014

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Class Hours & Room	8am – 9:15am Tuesdays & Thursdays in FCS 192
Office Hours	Tuesdays and Thursdays right after class Mondays and Thursdays 5-6pm

Questions explicitly pertinent to the course material and hence of likely interest to the entire class (e.g., how to undertake a certain task in Oracle®) should be posted on the Canvas site. More individual questions or issues (e.g., notifying me of a problem such as illness, business travel, or bereavement) should be handled via electronic mail.

Course Description

This capstone course will provide an opportunity for students to work as a member of a project team on a complex, real-world information systems project. The course examines the processes and tools used to develop, implement and administer database systems in business. You will undertake, in self-selected teams, a class project involving the development of a database using a client/server database management system. Project management methodologies and tools used to manage complex information systems projects are also applied in the course.

Prerequisite: ITM 321

Course Goals and Objectives

Students in this course will learn about client/server databases using a database management software package called Oracle. Students will study the database language SQL in depth.

During the first part of the course, we will review the principles and tools of conceptual, logical, and physical database design. We will also learn how to use project management software to manage an information systems project.

During the second part of the course we will study the database manipulation language components of SQL in depth. Topics covered include the SELECT statement, the WHERE statement, the ORDER BY statement, JOINS, single-row functions, group functions, and subqueries.

During the third part of the course we will learn how to take a design for a database and implement it in Oracle using the database definition language components of SQL. Topics include table creation and management, constraints, and data manipulation.

During the fourth part of the course we will learn about views, sequences, and indexes.

By the end of the class, students should understand most of the material needed to pass an Oracle certification exam.

Communication skills will be emphasized in this course. You will verbally present and defend your ideas during each class session. A group project will encourage you to practice your written and oral communication skills.

Skills needed to work effectively in small teams will also be emphasized in this course. In addition to the large class project, you will work in your teams to complete in-class and/or homework exercises.

BBA Program-Level Objectives

The BBA program at the University of Michigan-Dearborn has a set of program learning objectives. These objectives specify a set of skills and abilities that you will develop while pursuing the BBA degree. Several of these objectives are addressed in ITM 431.

1. **Communicate effectively verbally and in writing.** You will develop your communication skills through a group project that includes a written paper and a presentation to the class.
2. **Develop effective interpersonal skills that will enable them to work with other individuals and within teams as either leaders or participants.** You will develop your interpersonal skills by working with a team on the group project.
3. **Know how to gather, use, and critically evaluate electronic and other information.** You will learn how to use information in Oracle databases.
4. **Develop a knowledge and appreciation of ethical principles as applied to business.** You will learn how data quality is addressed in Oracle databases. Data quality has been identified as one of the key ethical issues in MIS.
5. **Use critical thinking skills to solve real or hypothetical business problems.** You will develop critical thinking skills by designing a database for a real-world organization.

Required or Recommended Course Materials

1. Hoffer, Jeffrey A., V. Ramesh, and Heikki Topi. (2011) *Modern Database Management*, 10th edition. Upper Saddle River, NJ: Prentice Hall.
2. Casteel, Joan. (2010). *Oracle 11g: SQL*. Cambridge: Course Technology.

The textbooks are recommended course materials (#2 is well-nigh required, you may have #1 already from a prerequisite course). Be sure to purchase the textbooks during the first week of the semester. The bookstore will return books that they do not sell early in the term.

You can find additional course materials such as PowerPoint slides to accompany the class sessions in the online system Canvas. Canvas can be found at canvas.umd.umich.edu.

Grading

Component	Date	Weight
First Examination	21 October 2014	30%
Second Examination	9 December 2014	30%
Team Project presentation	4 December 2014	30%
Exercises & participation	Throughout course	10%

Class Schedule and Assignments

The readings listed for each class should be completed prior to the beginning of that class session.

Topic	Reading
Introduction to the course.	
Review of database design.	H – Review chapters 3, 4, 5, and 6.
Overview and SELECT Statements.	C – Chapter 1 and 2.
Table creation and management.	C – Chapter 3.
Constraints.	C – Chapter 4.
Data manipulation & transaction control; other database objects.	C – Chapter 5 and 6.
Filtering and sorting data.	C – Chapter 8.
JOINs.	C – Chapter 9. H – Chapter 7.
Single-row and group functions.	C – Chapter 10 and 11.
Subqueries.	C – Chapter 12.
Views.	C – Chapter 13.
Project presentations.	

Notes:

(1) H = Hoffer, Ramesh, and Topi; C = Casteel

Administrative Matters

The University will make reasonable accommodations for persons with documented disabilities. Students need to register with Disability Resource Services (DRS) every semester they are enrolled for classes. DRS is located in Counseling & Support Services, 2157 UC. To be assured of having services when they are needed, students should register no later than the end of the add/drop deadline of each term.

The University of Michigan-Dearborn maintains an "Inclement Weather Campus Closure Information Line" at 313-436-9157. You may wish to call this number in case of severe storms, power outages, insurrection, epidemic, or other unpleasant (understatement!) events to see if the campus is open.

Regular class attendance is expected and is essential to mastering the course material. As indicated above, class participation is a factor considered in course grading. You cannot participate if you are not in class, and I cannot teach an empty chair. Cellular telephones are to be *silent* during class. If you receive an *emergency* incoming call via *vibration*, please leave the classroom quietly and unobtrusively to answer it, and return to the classroom likewise.

This syllabus is largely the intellectual property of Professor Barbara Klein, “founder” and expert in databases and this course. Her permission (indeed, generous encouragement) to use it is gratefully acknowledged. Likewise, assistance and advice from Professor Guo are gratefully acknowledged.