ISQA 4300/8306
DATABASE ADMINISTRATION

General

Course and instructor identification

Instructor:	Dr. Peter Wolcott
Office:	PKI 177E
Office hours:	Anytime I'm in my office. Or, by arrangement
Telephone:	402.554.3158
E-mail:	pwolcott@mail.unomaha.edu

Section:	ISQA 4300/8306-001
Meeting time:	Thursdays 5:30-8:10 PM
Meeting location:	PKI 256

Course description

This course is designed to give students an applied, practical introduction to database administration. Students will gain an understanding of the functioning of a database management system and its relationship to the computing environment in which it runs. They will learn the concepts, principles, and techniques necessary to carry out such functions as database object creation, storage management and capacity planning, performance tuning, backup and recovery, and security management. The current offering of this course will use Oracle as a platform for class instruction and assignments..

Course objectives

After taking this course you will, among other things, be able to

- understand the roles, issues, and tasks associated with the database administration function
- understand computer system and DBMS architecture and how the DBMS stores and maintains data, executes queries, and performs other data management tasks.
- create a variety of database objects, such as tablespaces, indexes, and user objects
- plan and implement the physical organization of a database
- understand and use the system catalog in a variety of database administration tasks
- gather, interpret, and act on database statistics to monitor database activity and tune for performance
- plan and execute backup and recovery activities
- secure the database and manage users

Course prerequisites

ISQA 3310 - Managing the Database Environment, or CSCI 4850 - Database Management Systems, or ISQA 8410 – Database Management

Textbook

1. [Powell] Powell, Gavin and Carol McCullough-Dieter, **Oracle 10g Database Administrator: Implementation and Administration**, Course Technology, 2007. ISBN: 1-4188-3665-6
2. [10g] Oracle Database 10g: Administration Workshop I
   Available shortly from the UNO bookstore ….

Policies

Cheating

Assignments typically are individual. Although you may discuss your individual assignments with classmates (indeed, you are encouraged to do so), you must turn in work that is your own. The distinction I make is similar to that made by traditional copyright law: **A copyright is the expression of an idea (like your solution to homework) in a fixed media susceptible to perception (like a file or hard-copy). Copying of a physical (electronic) manifestation of a person's work is not permitted; sharing of ideas is. If you copy another person's work, either manually or electronically, you will receive no credit for the assignment. If you allow your work to be copied by another person, you also will receive no credit for the assignment. Two such infractions can result in a failing grade for the course.**

Late assignments

I understand that many of you have outside jobs that may involve crises, stiff deadlines, or business trips that will take away from the time you choose to devote to course work and may interfere with the specific timetable laid out below. Consequently, you will be assessed a 2% assignment grade penalty for each day an assignment is late, up to a maximum of one week. This will reward students who do get their assignments in on time, but not penalize excessively those who due to work- or family- related circumstances are unable to meet the due date. No assignments more than a week late will be accepted, since I want to be able to return graded assignments in a timely manner.

ADA notice

The Americans with Disabilities Act (ADA) requires universities to affirmatively notify students of their right to request accommodations. Accommodations are provided for students with verified disabilities. For more information contact Services for Students with disABILITIES (SSd) in EAB 117 or 554-2872, TTY 554-3799.

Accreditation

ISQA 4300 students: The Batchelor of Science Information Systems (BIS) and Batchelor of Science Computer Science (BCS) Programs are accredited by ABET, the Accreditation Board for Engineering and Technology. This organization requires that we keep samples of student work. Unless you specify otherwise, I may retain the original copy of your exams and assignments (with your name removed) for accreditation purposes and return a copy to you.

Course Deliverables and Grading

The deliverables for the course will be a sequence of six assignments. The final grade will be based on these assignments, plus the two exams, plus a component related to attendance and participation..

Grading

Your grade will be computed as follows:

GRADE COMPONENT	POINTS POSSIBLE	
	ISQA 4300	*ISQA 8306*
Midterm	220	170
Final	220	170
Assignments	(5@100) 500	(6@100) 600
Participation	60	60
TOTAL	1000	1000

Grade scale

Grading will be done on a curve, if necessary, but typically:

POINTS	LETTER GRADE
960-1000	A+
920-969	A
890-919	A-
860-889	B+
820-859	B
790-819	B-
760-789	C+
720-759	C
690-719	C-
660-689	D+
620-659	D
590-619	D-
<590	F

Tentative Course Outline & Schedule

DATE	TOPIC	READINGS	DELIVERABLES
August 30	Introduction System Architecture	[10g] ch. 1	
September 6	System Architecture		
September 13	DBMS Architecture	[Powell] ch.1 (pp.1-10), ch. 2 (pp. 56-63) [10g] ch. 3	
September 20	Control Files Redo Log Files Data Dictionary	[Powell] ch. 4	Assignment 1
September 27	Basic Storage Concepts and Settings	[Powell] ch. 5	
October 4	Table Management	[Powell] ch. 7,8 [10g] ch. 8	Assignment 2
October 11	Index Management Data Integrity Constraints	[Powell] ch. 9	
October 18	Midterm Exam		
October 25, November 1	Concurrency Control and Lock Management	[Powell] ch. 10 (pp. 476-479) [10g] ch. 17	Assignment 3
November 8	User Administration & Security	[Powell] ch. 12 [10g] ch. 7	Assignment 4
November 15	Managing Data Oracle Net Services	[10g] ch. 9 [Powell] ch. 11 (pp. 502-512) [10g] ch. 12 [Powell] ch. 2 (pp. 39-56)	
November 22	Thanksgiving Holiday		
November 29	Backup & Recovery	[10g] 18-20 [Powell] ch. 15	Assignment 5
December 6	Performance Monitoring & Tuning	[10g] 14 [Powell] 13	
December 13	To be announced		Assignment 6
December 20	Final Exam		