

<p style="text-align: center;">ISQA 4300/8306 DATABASE ADMINISTRATION</p>

<p style="text-align: center;">General</p>

Course and instructor identification

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Section:	ISQA 4300/8306-850
Meeting time:	Internet mediated

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 8050 – Data Organization and Storage

Textbook

1. [Watson] Watson, John, **OCA Oracle Database 11g: Administration I Exam Guide**, McGraw Hill, 2008. ISBN: 978-0-07-159102-7

Technology

Since this is an Internet mediated course, you will need to install, or have access to, the following pieces of technology.

1. The Oracle client.
2. A tool such as SQL Developer (Oracle), TOAD, or other 3rd party tool. SQL Developer is a part of the Oracle client installation, or you may download it separately. Details may be found in Blackboard.

On-line Course Considerations

Since we will not be meeting face-to-face on a regular basis, yet active student participation is very important for learning, students will be required to participate on-line each week. Some of this interaction will be in a small group setting in which groups of 3-4 students may discuss or research particular issues.

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 Bachelor of Science Information Systems (BIS) and Bachelor 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.

Safety Brief

Please make a note of the following safety-related information at UNO.

UNO Emergency Site: <http://emergency.unomaha.edu/>

Report on-campus emergencies: (402) 554-2911

Campus Security (non-emergency) (402) 554-2648

UNO Weather announcements (402) 554-2255

Course Deliverables and Grading

The deliverables for the course will be a sequence of six assignments (5 for ISQA 4300 students). 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	
	<i>ISQA 4300</i>	<i>ISQA 8306</i>
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

WEEK OF	TOPIC	READINGS	DELIVERABLES
August 23	Introduction	[Watson] ch. 1	
August 30	System Architecture		
September 6	DBMS Architecture	[Watson] ch. 2	
September 13	Control Files Redo Log Files Data Dictionary	[Watson] ch. 2	Assignment 1
September 20	Basic Storage Concepts and Settings	[Watson] ch. 7	
September 27	Table Management Index Management	[Watson] ch. 9	Assignment 2
October 4	Advanced Table Management	[Watson] ch. 9	
October 11	Concurrency Control and Lock Management	[Watson] ch. 10	
October 18	Concurrency Control and Lock Management (cont.)	[Watson] ch. 10	Assignment 3
October 25	User Administration & Security	[Watson] ch. 8,12	
November 1	Midterm Exam		
November 8	Managing Data Undo segments Oracle Net Services	[Watson] ch. 6, 18	Assignment 4
November 15	Backup & Recovery	[Watson] ch. 15-17	
November 22	Thanksgiving Holiday		
November 29	Performance Monitoring & Tuning	[Watson] ch. 14	Assignment 5
December 6	To be determined		Assignment 6
December 13	Final Exam		