

Regis University
School for Professional Studies

Course Syllabus
Spring 8 Week 1 2008
Jan. 7, 2008 – Mar. 2, 2008

Instructor

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Course Number & Title

MCT 615 Database Administration (3 CR)
MSCD 640 Database Administration (3 CR)

Course Description

This course examines key tasks and functions required of a database administrator in a production environment. Students create, start up, and manage a database. In addition, students implement data security and integrity measures and grant access privileges to individual database users.

Course Pre-requisite(s)

MSCD 610 or MCT 614. Cross listing(s): MCT 615.

Class Meeting Location & Times

Asynchronously online.

Required Textbooks

Powell, G. & McCullough-Dieter, C. (2006). *Oracle 10g Database Administrator: Implementation and Administration (1st ed.)*. Thomson Course Technology: Boston, MA. ISBN: 1-4188-3665-6 soft with CD. ©2007.

Connolly, T. M., & Begg, C. E. (2004). *Database Systems: A practical approach to design, implementation and management (4th ed.)*. Harlow, Essex, England: Addison-Wesley (Pearson Education). ISBN13: 978-0-321-29401-2 or ISBN: 0-321-29401-7 soft.

Exit Competencies

After successful completion of the course students should be able to:

1. Diagram and explain the architecture of the Oracle 10g database and the installation options.
2. Examine and utilize DBA tools, specifically the Oracle Enterprise Management console and the Database Grid Control; and evaluate the background processes that perform the database operations.
3. Compare and contrast data dictionary views (V\$ views) that monitor database structures and activities.

4. Select and apply SQL to create, modify, or remove redo log files, control files, and database-generated diagnostic files.
5. Assess the function and operation of the Oracle physical and logical structures; create, modify, and drop Oracle tablespaces, and create provisioning for undo data.
6. Evaluate and choose storage concepts and settings.
7. Evaluate and explain advanced table management concepts.
8. Evaluate and apply index management in the Oracle 10g database.
9. Design user and resource control to the database, including object privileges and storage quotas.
10. Evaluate and select appropriate database roles, privileges and profiles.
11. Differentiate and apply performance monitoring concepts.
12. Design and evaluate proactive maintenance steps for the database.
13. Create and evaluate advanced data types for object-oriented applications.

Course Outline & Schedule

Week	Reading Assignment	Topics
1	Powell, G. & McCullough-Dieter, C. (2006) Chapters 1-2	<ul style="list-style-type: none"> ▪ Oracle Architecture Overview ▪ Database System Architectures ▪ Tools and Architecture
2	Powell, G. & McCullough-Dieter, C. (2006) Chapters 3-4	<ul style="list-style-type: none"> ▪ Creating an Oracle Instance ▪ Oracle Physical Architecture and Data Dictionary Views
3	Powell, G. & McCullough-Dieter, C. (2006) Chapters 5-6	<ul style="list-style-type: none"> ▪ Storage and File Structure ▪ Indexing and Hashing ▪ Query Processing & Optimization
4	Powell, G. & McCullough-Dieter, C. (2006) Chapters 7-8	<ul style="list-style-type: none"> ▪ Basic Table Management ▪ Advanced Table Management
5	Powell, G. & McCullough-Dieter, C. (2006) Chapters 9-10	<ul style="list-style-type: none"> ▪ Constraints and other Specialized Objects ▪ Transactions ▪ Basic Data Management
6	Powell, G. & McCullough-Dieter, C. (2006) Chapters 11-12	<ul style="list-style-type: none"> ▪ Advanced Data Management ▪ Concurrency Control ▪ Security Management
7	Powell, G. & McCullough-Dieter, C. (2006) Chapters 13-14	<ul style="list-style-type: none"> ▪ Performance Monitoring ▪ Proactive Maintenance
8	Reading completed	<ul style="list-style-type: none"> ▪ Backup and Recovery Basics

Assignments and Due Dates

Assignment 1 – Lab Work

1.1 – Chapters 1 – 6

1.2 – Chapters 7 - 10

Jan 27

Feb 10

1.3 – Chapters 11 – 14	Feb 24
Assignment 2 – Writing Assignment	Feb 3
Assignment 3 – Annotated Bibliography	Feb 17
Course Project	Feb 24
Final Exam	Mar 2

* For an up-to-date matrix of all assignments and due dates, refer to <http://www.bradblake.com/Regis/mscd640.htm>

Method of Assessment

Formative evaluations are conducted through assignments 1-3, whereas summative evaluations are conducted through the course project and final exam. The course project is a practical assignment requiring the skilled use of data normalization and relational data modeling skills, SQL skills, and use of the database life cycle as a paradigm for development. The final exam is an assessment of concepts, foundational theory, and the student's ability to analyze and synthesize these with case studies, writing assignments, and criterion-referenced questions.

Final Grade Determination

The following elements and percentages will determine the final grade in the course:

Online

Participation in the forum discussions	20%
Assignments 1-3	45%
Course Project	20%
Final Exam	<u>15%</u>
	100%

In-Seat

Participation in the panel discussions	20%
Assignments 1-3	45%
Course Project	20%
Final Exam	<u>15%</u>
	100%

Method of Instruction (In-seat)

The course will use presentation lecture, facilitated discussion, panel discussions, applied research, practical laboratory exercises and graduate dialectic as the guiding methods of instruction.

Method of Instruction (Online)

The course will use discussion forums, threaded discussion, applied research, practical laboratory exercises and graduate dialectic as the guiding methods of instruction.

Course Resources & Materials

Specific tools will include meta-search engines, scholarly databases, office productivity applications, and access to an Oracle10g database instance.

Course Policies

- (1) Students must adhere to the standards for academic integrity as outlined in the course module. Specifically, each student is responsible for maintaining academic integrity and intellectual honesty in his or her academic work. Students must:
 - (a) Submit his or her personal work and not that of another person.
 - (b) Not falsify data or information
 - (c) Not engage in cheating (e.g. giving or receiving help during examinations, acquiring and/or transmitting test questions prior to an examination)
 - (d) Not receive or give aid on assigned work that requires independent effort.
 - (e) Properly credit the words or ideas of others according to accepted standards for professional publications.
 - (f) Not use term paper writing services or consult such services for the purpose of obtaining assistance in the preparation of materials to be submitted in the course.
 - (g) Not commit plagiarism (Webster's Dictionary defines plagiarism as "stealing or passing off ideas or words of another as one's own" and "the use of a created production without crediting the source".)
When using the exact words of another, quotation marks must be used for short quotations (fewer than 40 words), and block quotation style must be used for longer quotations. In either case, a proper citation must also be provided. When paraphrasing (summarizing, rewriting, or rearranging) the words or ideas of another, a proper citation must be provided.
- (2) Students are encouraged to discuss the course contents with colleagues in order to gain a better understanding of the various topics covered. However, all work that you submit must reflect your individual effort. Any help that you receive must be explicitly acknowledged and all reference material must be cited.
- (3) Each student must demonstrate graduate level proficiency in the use of the English language in all work submitted for this course.
- (4) Work submissions must be in hard copy and follow proper APA format guidelines.
- (5) Please ensure that your name, phone number, and email are available on each assignment submitted. This information must also appear on all documents attached to email messages.
- (6) One letter grade will be deducted for each week that an assignment is past the due date.
- (7) Regular attendance and participation in class or discussion forum is expected from each student.