

AUSTIN COMMUNITY COLLEGE

DEPARTMENT OF COMPUTER STUDIES AND ADVANCED TECHNOLOGY

Fall 2009

Introduction to Database Programming: Oracle

Course ITSE 2309-004 Synonym 41435

Instructor: David S. Trevino

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Class	RGC 1124	Lecture	S	9:00am -10.20am
	RGC 112	LAB	S	10:50am -12:00 noon
Office Hrs.	ROOM TBA		S	12:00pm - 1:00pm

Course Description: Applications development using database programming techniques emphasizing database structures, modeling, and database access. This course instructs the student in the essential concepts and design methodology for the Relational Database Model as implemented by Oracle. Other topics include: the Data Definition Language, the Data Manipulation Language, database normalization, transaction processing, security, multi-user problems and solutions.

Pre-requisite: COSC1315 Fundamentals of Programming or department approval.

Approved Course Text: Set by taskforce

Database Systems Design, Implementation, and Management – 7th Edition By Peter Rob and Carlos Coronel – Thompson/Course Technology

ISBN 1-4188-3593-5

Oracle 9i: SQL with an introduction to PL/SQL

By Lannes L. Morris-Murphy – Thompson/Course Technology

ISBN 0-619-21284-5

Instructional Methodology: The course will have both lab and lecture. The student will be Required to do assigned readings from the text and handouts as well as scheduled individual labs to reinforce the material covered in class. Scheduled tests will be used to assess the progress of the student toward achievement of the course objectives. (Instructor may add to this).

Course Rationale: This course is designed as a survey course to teach students to design, implement, and maintain databases. The Relational Database Model and the SQL language will be emphasized. On-line Transaction Processing Systems will be studied and contrasted with Distributed Database Management Systems and Data Warehousing Systems. Web databases will be introduced. The Oracle DBMS will be used throughout the course in Lectures and in labs.

This course is part of the Computer Information Technology Database Certificate plan. Completion of this course provides the student with the initial knowledge required in preparation for consideration as an entry level database programmer, and acts as preparation for Oracle Certification test 1.

Course Objectives/ Learning Outcomes:

Establish a basic understanding of the analysis and design of a database.

Establish a basic understanding of the process of Database Development and Administration using SQL.

Enhance Programming and Software Engineering skills and techniques using SQL.

Establish a basic understanding of background materials needed for technical support using SQL.

Solve Database problems using Oracle 9i SQL by applying SQL commands to

Create, Insert, Update, and Retrieve a simple database.

Understand the services provided by a Database Management System.

Understand the use and application of the Relational Database Model.

Understand Transaction Processing and Multi-user Database support.

Understand the difference between a Production transaction database and a Data Warehouse.

Understand the Client/Server structures used in Database Management Systems.

Design and Implement a basic database using the Oracle Database Management

Instructor may add to but not delete any course objective/learning Outcomes

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Scans Competencies: Instructor will not change.

Grade Policy: Grade will be based both on concepts and practical application.

Grade Scale:

90% - 100% A

80% - 89% B

70% - 79% C

60% - 69% D

0% - 59% F

Course/Class Policies:

Academic Integrity:

A student is expected to complete his or her own projects and tests. Students are responsible for observing the policy on academic integrity described in the Current ACC Student Handbook, under “Student Discipline Policy, Section C”.

“Acts prohibited by the college for which discipline may be administered include scholastic dishonesty, including but not limited to cheating on an exam or quiz, plagiarizing, and unauthorized collaboration with another in preparing outside work. Academic work submitted by students shall be the result of their own thought, research or self-expression. Academic work is defined as, but not limited to tests, quizzes, whether taken electronically or on paper; projects, either individual or group; classroom presentations, and homework”.

The penalty assessed will be in accordance with the current ACC Student Handbook policy. See <http://www.austincc.edu/handbook/policies4.htm> for more information.

(Penalty for violation of academic policy must be specified)----Examples

Method of Determining Final Course Grade:

Examination Average 60%	= 60 Points
Laboratory Assignment Average 25%	= 25 Points
Database Project 10%	= 10 points
Daily (attendance, participation, etc.) 5%	= 5 Points

100 total possible points

Note: the class grade is point cumulative.

Examinations:

Three (3) examinations will be given (see the schedule at the end of this hand out). Examinations must be taken on scheduled dates. The examination dates may be changed due to unforeseen circumstances. Any changes will be announced in class. Students will be allowed to bring 1 page (both sides) of notes and a calculator to the exams.

If an Exam is missed, you will have made arrangements with the Instructor in advance and have 1 week to take the make up Exam at the Test Center. **Taking the make up Exam is subject to Instructor approval.** If you fail to take the make up Exam in the 1 week period, a Zero will be assigned.

Laboratory/Homework Assignments:

Laboratory/Homework assignments will be made throughout the class. Laboratory facilities are available on Campus and we will meet in the Lab. regularly to discuss assignments. Assignments are due two weeks from the date assigned unless otherwise specified by the Instructor. Students may turn in late assignments for partial credit.

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Incomplete:

A student may receive a temporary grade of “I” (Incomplete) at the end of the semester only if **ALL** of the following conditions are satisfied:

1. The student is unable to complete the course during the semester due to circumstances beyond their control.
2. The student must have earned at least half of the grade points needed for a “C” by the end of the semester.
3. The request for the grade must be made in person at the instructor’s office and necessary documents completed.
4. To remove an “I”, the student must complete the course by two weeks before the end of the following semester. Failure to do so will result in the grade automatically reverting to an “F”.

Classroom Conduct:

Food and drinks are not allowed in the classroom.

Cellular phones and pagers are to be turned off during class and labs.

Freedom of Expression Policy:

It is expected that faculty and students will respect the views of others when expressed in classroom discussions.

Attendance / Withdrawal Policy:

Students are expected to attend classes and will be held responsible for all material covered in class. Regular attendance helps ensure satisfactory progress towards completion of the course.

It is the student’s responsibility to complete a Withdrawal Form in the Admissions Office if they wish to withdraw from this class. The instructor may withdraw students from this class if their absences exceed 10% of the total number of class meetings. The last date to withdraw for this semester is defined in the semester catalogue. It is not the responsibility of the instructor to withdraw the students from their class even though the instructor has the prerogative to do so under the above listed circumstances.

Students with Disabilities Policy:

“Each ACC campus offers support services for students with documented physical or psychological disabilities. Students with disabilities must request reasonable accommodations through the Office for Students with Disabilities on the campus where they expect to take the majority of their classes. Students are encouraged to make this request three weeks before the start of the semester. (Refer to the Current ACC Student Handbook)”

Course Topics:

SQL Commands

DML Commands – Select, Insert, Update, Delete,

DDL Commands – Create Table, Drop Table, Create View, Alter, Grant

Transaction Commands – Commit, Rollback

Report Commands-BREAK, TTITLE, CLEAR, COLUMN, & COMPUTE

Database Concepts

Database Life Cycle

Database Design

Relational Database Model

Distributed Database Management Systems

Data Warehousing and Data Mining

Entity Relationship Diagrams (ERD)

Relational Schema

Normalization of Database Tables

Transaction Management and Concurrency

Report Generation

Database Administration

Database Optimization

Tentative Lecture Schedule:

Week	Chapter	Topic	Lab. Schedule
1	Intro to class	Databases Systems and Data Models	
8/30	Text Chapter 1 & 2		
2	Recap Chpt 1 & 2	The Relational Database Model – Advanced Data Modeling	Lab 1 – Start
9/5	Text – Chapter 3 & 6		
3	Recap Chpt 3 & 6	Structured Query Language (SQL)	
9/12	Text – Chapter 6 & 7		
4	Recap Chpt 6 & 7	Entity Relationship Modeling (ERD)	Lab 1 – End
9/19	Text – Chapter 4		
5	Sept 26 th . Exam # 1 --Ch. 1, 2, 3, 4, 6 Then— Text Chapter 5	Exam #1 then	Lab 2 – Start
9/26		Bgn -Normalization of Database Tables	
6	Recap Chpt 5	End -Normalization of Database Tables	
10/3	Text – Chapter 5		
7	Recp Chpt 5	Advanced SQL then Database Design	Lab 2 – End
10/10	Text – Chapter 8 9		

8	Recap Chpt 8 & 9	Transaction Management & Concurrency	Lab 3 – Start
10/17	Text – Chapter 10		
9	Oct 24 th Exam # 2- Ch. 5, 8, 9, 10	Exam 2- then- Distribution Database Management Systems	
10/24			
10	Recap to date	Distribution Database Management Systems	Lab 3 – End
10/31	Text – Chapter 12i		
11	Recap Chpt 12	Database Performance Tuning and Query Optimization	Project Start
11/7	Handouts & Text Chapter 11		
12	Recap	Databases Connectivity and Web Development	
11/14	Text – Chapter 14		
13	Recap Chpt 14	The Data Warehouse	
11/21	Text – Chapter 13		
14	Holiday		
11/28			
15	Recap Chpt 13	Database Administration	Project End
12/5	Text – Chapter 15		
16	Dec 12 th Exam # 3 Ch. 12, 11, 13, 14, 15, Views, Indexes & Nulls	Exam 3	
12/12			

Tentative Laboratory/Homework Assignments:

1. SQL Queries
2. SQL Queries & Modification Commands
3. Table Creation and Normalization
4. Database Project

A note from the Instructor:

It is **CRITICAL** that the student come prepare to class by reading the assigned material in advance. If you do not come well prepared to class you will find your self struggling this semester.

SCANS ITEMS COMPETENCIES:

CODE	DESCRIPTION	ITSE2309 LEVEL
F1	READING: Locates, understands, and interprets written information in prose and documents such as manuals, graphs, and schedules	2
F3	ARITHMETIC: Performs basic computations; uses basic numerical concepts such as whole numbers, etc.	2
F4	MATHEMATICS: Approaches practical problems by choosing appropriately from a variety of mathematical techniques.	2
F5	LISTENING: Receives, Attends to, interprets, and responds to verbal messages and other cues.	2
F9	PROBLEM SOLVING: Recognizes problems and devises and implements plan of action	2
F10	SEEING THINGS IN THE MINDS EYE: Organizes and processes symbols, pictures, graphs, objects, and other information.	2
F12	REASONING: Discovers a rule or principle underlying the relationship between two or more objects and applies it when	2
C1	TIME: Selects goal relevant activities, ranks them, allocates time, and prepares and follows schedules.	2
C5	Acquires and evaluates information	2
C6	Organizes and maintains information	2
C7	Interprets and communicates information	2
C8	Uses computers to process information	2