

*This course introduces Oracle's relational database and how to add, update, extract and organize information from the database. It covers how to format reports and export data to ODBC files. Students will work with Oracle's Structured Query Language (SQL), SQL*Plus.*

*Prerequisites: An understanding of relational database design concepts.
Minimum software requirements: Windows Server 2003, Windows XP Pro or Vista Pro; Oracle 11g.
Minimum hardware requirements for all machines: Minimum 512 MB RAM (2 GB preferred); 20 GB of free space on hard drive (before installation). Machines need static IP addresses.
Microsoft PowerPoint and Internet access on instructor's workstation for presentation purposes.*

Module 1: Database Management System Overview

What is a Database?
Types of DBMSs

Module 2: Introduction to Entity Relationship Modeling

What is a Data Model?
Why Use an Entity Relationship Model?

Module 3: Fundamentals of Relational Database Management Systems

What is an RDBMS?
Physical Data Storage
Relationships between Tables
Domains - Data Integrity

Module 4: SQL Basics and SQL*Plus

Understanding the Difference Between SQL, SQL*Plus and PL/SQL
Invoking and Leaving SQL*Plus
Entering and Executing Commands
The SELECT Command and Mandatory Clauses

Module 5: Using SQL Developer

Understanding SQL Developer Environment and Commands

Module 6: The WHERE and ORDER BY Clause

WHERE and ORDER BY Clauses
Using the Data Dictionary

Module 7: Single Row Functions

Functions, Date and Numeric Format Models/Data Conversion
Control Statements

Module 8: Joining Data from Multiple Tables in Queries

The JOIN Condition/The Cartesian Product
Outer JOINS
ANSI99 Joins

Module 9: Group Functions and the GROUP BY Clause

Group Functions
Distinct Operator in Group Functions

Module 10: Using Subqueries and CASE Clauses

Single-Row, Multi-Row, Multi-Column Subqueries
Subqueries - SELECT, FROM, WHERE, HAVING, ORDER BY, Correlated Subqueries
CASE Expressions

Module 11: Analytic Functions (Optional)

Single Row and Aggregating Analytic Functions

Module 12: SQL*Plus Reporting

SQL*Plus Report Writing Commands
COLUMN Command/Titles, System Variables
Master-Detail Report with TITLE and COLUMN Commands

Control Breaks, Computing Aggregate Amounts

Module 13: Data Manipulation Language (DML)

Commands

INSERT, UPDATE, DELETE, MERGE Command
Use of Subqueries
Transaction Control/Read Consistency/Locking

Module 14: Getting Data In and Out of Oracle

SQL*Loader Basics
Importing into Excel
Direct Database Queries Using ODBC