

UCIRVINE | EXTENSION

**Oracle Database
Administration
Certificate Program**



University of California, Irvine | P.O. Box 6050, Irvine, CA 92616-6050
www.extension.uci.edu

UC Irvine Extension Certificate Program in Oracle Database Administration

PROGRAM OBJECTIVES

The Certificate Program in Oracle Database Administration provides practical knowledge on the tasks and responsibilities of a database administrator working with the Oracle database system. The courses also help students prepare for the Oracle Certified Database Administrator exam. This program uses official curricula that we obtain from Oracle University through our membership in the Oracle Workforce Development Program (WDP)**.

Objectives:

- Implement an Oracle database
- Perform standard database tasks such as using structured query language (SQL) to retrieve specific information from an Oracle database
- Describe the architecture of the Oracle relational database management system
- Perform routine administrative tasks in support of an enterprise-wide Oracle system
- Monitor the performance of an Oracle database and tune its properties to optimize data access
- Perform data backup and recovery procedures
- Administer the network on which Oracle is deployed
- Gain the knowledge needed to become an Oracle Certified Professional

PROGRAM NEED

Nearly every organization has a need for data storage and manipulation. This data might consist of customer information, supplier information, or product manufacturing data. As a company grows and tries to serve more customers, and as the nature of manufacturing and delivery processes concomitantly becomes more complex, the ability to store and access information quickly becomes crucial. Relational databases provide the best available solution to this data storage problem. For large companies or large eBusiness operations, robust, scalable database systems provide the best solution where data and data accessibility are mission-critical elements. Most often, companies will adopt a corporate standard revolving around a particular vendor. Oracle is usually the database of choice when data storage needs are large and when the ability to fine-tune performance is necessary. As businesses seek ways to serve more customers more efficiently, the need to implement and maintain large-scale, secure databases continues to grow. Today, personalized service over the Internet is becoming the norm, and this requires sophisticated database technology along with skilled people to administer it. Given the growing need for business solutions such as Oracle, the demand for trained and

knowledgeable database administrators is expected to grow over the next decade.

From the perspective of the student, knowledge of Oracle is important. However, gaining recognition from Oracle by way of certification is also an important factor. Adding the Oracle logo to one's resume symbolizes a higher degree of knowledge and competence using Oracle products. The courses in this certificate program are identical to those offered by Oracle University and through our participation in the WDP, we use the same Oracle courseware. These courses provide the best way to prepare for the Oracle certification exams. With UC Irvine Extension, you get the best of both worlds: a certificate granted by UC Irvine Extension and the knowledge needed to become certified by Oracle.

PROGRAM DESCRIPTION

In order to receive the Certificate in Oracle Database Administration, students must complete at least 15 units of coursework with a grade of "C" or better in each course (see Table, page 4).

PROGRAM BENEFITS:

- UC Irvine Extension is an Oracle Certified Partner**
- UC Irvine Extension is the #1 provider for Oracle training in the country*
- Oracle certified course materials direct from Oracle**
- Hands-on practice in an Oracle-certified lab**
- Course led by an Oracle Master Certified instructor with 15 years experience in Oracle
- Enrolled students receive free Oracle software**
- Prepare for the Oracle certification exams for database administration
- Receive 25% discount on Oracle certification exams**

PROGRAM FEES

Your total cost may vary substantially depending on the specific courses you choose. Starting at \$1,375-\$1,495 for Oracle courses (3.5 Units). Online courses are \$795 each. Note that parking is free for all Oracle courses conducted at EmpowerTrain in University Tower, across the street from the UCI campus in Irvine.

Course fees (One general and 4 Oracle courses)	\$6,555
Candidacy Fee	\$125
Textbooks ¹	\$75

¹ The cost of course books are included in the course fees for all Oracle certified courses. The \$75 amount

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Parking (\$34 per quarter)² \$68

Total Estimated Cost \$6,823

Your actual cost could be more or less than this amount (most likely less because this is a conservative estimate).

Oracle Net services, database storage structures, backup and recovery, data and concurrency, undo data, performance and database diagnostic. The lesson topics are reinforced with structured hands-on practices.
Prerequisites: Oracle 11g: Introduction to SQL.

Oracle Database 11g: Administration Workshop II I&CSCI X440.57 (3.5 Units)

In this course, the concepts and architecture that support backup and recovery, along with the steps of how to carry it out in various ways and situations, are covered in detail. This includes how to define and test your own backup and recovery scenarios. Also, the students learn to manage memory effectively and to perform some performance evaluation and tuning tasks, including using some of the advisors. All types of flashback technologies, scheduling jobs inside and outside of the database, and controlling system resource usage are covered. Topics are reinforced with hands-on practices. *Prerequisites: Oracle Database 11g: Administration Workshop I.*

REQUIRED COURSE DESCRIPTIONS

Oracle Database 11g: Introduction to SQL I&CSCI X440.55 (3.5 Units)

In this course, students learn the concepts of relational databases. This course provides the essential SQL skills that allow developers to write queries against single and multiple tables, manipulate data in tables, and create database objects. Students learn to control privileges at the object and system level. This course covers creating indexes and constraints, and altering existing schema objects. Students also learn how to create and query external tables. Students learn to use the advanced features of SQL in order to query and manipulate data within the database, use the dictionary views to retrieve metadata and create reports about their schema objects. Students also learn some of the date-time functions available in the Oracle Database. This course discusses how to use the regular expression support in SQL.
Prerequisites: Familiarity with data processing concepts and techniques.

Oracle Database 11g: Administration Workshop I I&CSCI X440.56 (3.5 Units)

This course is designed to give students a firm foundation in basic administration of Oracle Database 11g. In this class, students learn how to install and maintain Oracle Database 11g. Students gain a conceptual understanding of the Oracle database architecture and how its components work and interact with one another. Students learn how to create an operational database and properly manage the various structures in an effective and efficient manner including performance monitoring, database security, user management, and backup/recovery techniques. Topics in this course include: Oracle database architecture,

ELECTIVE COURSE DESCRIPTIONS

Designing Relational Databases I&CSCI X426.81 (3.0 Units)

If you need to learn more about the design of relational database systems, this course is for you. You'll explore how the relational database approach is used in both open and closed systems and on both mainframe and client/server platforms, and learn about the design of systems of all sizes including standalone, workgroup, departmental, and enterprise-wide applications. You'll also learn how to incorporate data from legacy systems as well as how to develop entirely new systems. You'll have the opportunity to design a relational database model in class and refine it for a real-world system or case study. Topics include an overview of database systems, defining business entities, entity relationship modeling (ERM) for top-down analysis, defining relational database tables and attributes, conversion of logical design to physical design, normalization of tables, and using structured query language (SQL) to process data and generate reports. *Prerequisites: coursework or experience in programming using a high-level programming language.*

Oracle Database 11g: Program with PL/SQL I&CSCI X440.58 (3.5 Units)

This course introduces students to PL/SQL and helps them understand the benefits of this powerful programming language. Students learn to create PL/SQL blocks of application code that can be shared by multiple forms, reports, and data management applications. Students learn to create anonymous PL/SQL blocks as well as stored procedures and functions. Students learn to develop, execute, and

included here represents a book you might have to purchase for one of the general database courses.

² Parking at EmpowerTrain is free so there will be no parking charges associated with Oracle courses.

However, if you take either or both of the general database courses on the UCI campus, you *will* have to pay a parking fee.

*Oracle Workforce Development Program(WDP)

**Enrollment granted on a space-available basis.

***Oracle Online track not included

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manage PL/SQL stored program units such as procedures, functions, packages, and database triggers. Students also learn to manage PL/SQL subprograms, triggers, declaring identifiers and trapping exceptions. Students are introduced to the utilization of some of the Oracle-supplied packages. *Prerequisites: Oracle 11g: Introduction to SQL.*

Oracle Database 11g: Performance Tuning **I&C SCI X440.93 (3.0 Units)**

This course will teach students how to get the most out of Oracle 11g Database by learning performance tuning methods that maximize the utility of the database. Students learn how to benefit from Oracle Database 11g automatic tuning features, as well as practicing the manual tuning methods using the Statspack tool. After clearly defining the various methodologies one can use to tune an Oracle Database, the course covers the various tunable components of an Oracle Database. Throughout the course, students experience hands-on the tuning of an Oracle Database by practicing through a series of workshops. *Prerequisites: Oracle Database 11g: Administration Workshops I and II or equivalent experience with database administration.*

Oracle Database 11g: Data Warehouse Fundamentals **I&C SCI X440.51 (2.5 Units)**

In this course, students learn the basic concepts of a data warehouse and study the issues involved in planning, designing, building, populating, and maintaining a successful data warehouse. Students learn to improve performance or manageability in a data warehouse using various Oracle Database features. Students also learn the basics about Oracle's Database partitioning architecture and identify the benefits of partitioning. Students review the benefits of parallel operations to reduce response time for data-intensive operations. Students learn about the extract, transform, and load of data phase (ETL) into an Oracle database warehouse. Students learn the basics about the benefits of using Oracle's materialized views to improve the data warehouse performance. Students also learn at a high level how query rewrite can improve a query's performance. *Prerequisites: Knowledge of general data warehousing concepts, client-server technology and relational server technology.*

Oracle Database 11g: Administer a Data Warehouse **I&C SCI X440.52 (3.0 Units)**

In this course, students learn about Oracle's Database partitioning architecture and identify the benefits of

partitioning. Students also use parallel operations to reduce response time for data-intensive operations. Participants extract, transform, and load data into an Oracle database warehouse. Students also use materialized views to improve the data warehouse performance. Students also learn how query rewrite can improve a query's performance. Students use the SQL Access Advisor to optimize the entire workload. Finally, students learn how to tune materialized views for fast refresh and query rewrite and how to use the compression and resumable sessions features.

Oracle Database 10g: Black Belt Workshop 1 **I&C SCI X440.47 (3.5 Units)**

Learn to exploit the new features and capabilities of Oracle Database 10g Release 2 for Oracle Real Application Clusters (RAC). Through a series of demonstrations and hands-on practice, you'll learn how to configure and administer a database for use with Real Application Clusters. You'll also learn how to minimize downtime following an outage and how to prevent data loss with Oracle Data Guard. You'll explore Data Guard architecture and learn how to set up physical and logical standby databases. Additional topics include Data Guard's impact on performance, troubleshooting Data Guard, and using Enterprise Manager Grid Control for the creation and management of a Data Guard configuration. The course includes a hands-on workshop that allows students to reinforce the skills they have learned.

Oracle Database 10g: Black Belt Workshop 2 **I&C SCI X440.48 (3.5 Units)**

Expand your knowledge of the advanced features of Oracle 10g Release 2 for Oracle Real Application Clusters (RAC) by learning how to configure and administer Oracle Enterprise Manager 10g Grid Control. With a broad set of administration, configuration management, provisioning, end-to-end monitoring, and security capabilities, Oracle Grid Control (OGC) reduces the cost and complexity of managing grid computing environments. You'll learn how to implement OGC's robust service level management functionality to improve service levels via rich transaction and end-user performance monitoring and diagnostic capabilities that are designed especially for multi-tier Internet applications. The course also covers advanced features of Oracle Database 10g Release 2 for Oracle Real Application Clusters (RAC), advanced Data Guard Services, Data Guard broker, advanced backup and recovery procedures using RMAN, and advanced topics in Oracle database tuning.

LIST OF COURSES

Catalog Number	REQUIRED COURSES
I&CSCI X440.55	Oracle Database 11g: Introduction to SQL (3.5 units)
I&CSCI X440.56	Oracle Database 11g: Administration Workshop I (3.5 units)
I&CSCI X440.57	Oracle Database 11g: Administration Workshop II (3.5 units)
	Elective Courses (4.5 Units Minimum Required)
I&CSCI X426.81	Designing Relational Databases (3.0 units)
I&CSCI X440.58	Oracle Database 11g: Program with PL/SQL (3.5 units)
I&CSCI X440.93	Oracle Database 11g: Performance Tuning (3.5 units)
I&CSCI X440.51	Oracle Database 11G: Data Warehouse Fundamentals
I&CSCI X440.52	Oracle DB 11g: Administer a Data Warehouse
I&CSCI X440.92	Oracle Database 11g: SQL Tuning (3.5 units)
I&CSCI X440.47	Oracle Database 10g: Black Belt Workshop 1 (3.5 units)
I&CSCI X440.48	Oracle Database 10g: Black Belt Workshop 2 (3.5 units)
Catalog Number	ONLINE TRACK REQUIRED COURSES
I&C SCI X440.80	Oracle Database 11g: Introduction to SQL- Part 1 (1.5 units)
I&C SCI X440.81	Oracle Database 11g: Introduction to SQL- Part 2 (1.5 units)
I&C SCI X440.84	Oracle Database 11g: Administration Workshop 1-Part 1 (1.5 units)
I&C SCI X440.85	Oracle Database 11g: Administration Workshop 1-Part 2 (1.5 units)
I&C SCI X440.86	Oracle 11g Database Administration Workshop 2-Part 1 (1.5 units)
I&C SCI X440.87	Oracle 11g Database Administration Workshop 2-Part 2 (1.5 units)
	ELECTIVE COURSES (3 Units Minimum Required)
I&C SCI X426.81	Designing Relational Databases (3.0 units)
I&C SCI X440.82	Oracle Database 11g: Program with PL/SQL- Part 1 (1.5 units)
I&C SCI X440.83	Oracle Database 11g: Program with PL/SQL -Part 2 (1.5 units)
See www.extension.uci.edu for the Oracle Online Track course descriptions	

UNIVERSITY OF CALIFORNIA, IRVINE
UNIVERSITY EXTENSION

APPLICATION FOR CANDIDACY

Certificate Program in Oracle Database Administration

This form must be submitted, along with a filing fee of \$125, prior to completion of the third course in the Program.

NAME Mr. Mrs. Ms.

HOME ADDRESS

CITY

STATE

ZIP

PHONE: DAY

EVENING

SOCIAL SECURITY NUMBER

JOB TITLE

EMPLOYER

EMPLOYER ADDRESS

Payment must be included with application.

MY CHECK FOR \$125 IS ENCLOSED (Payable to Regents of University of California).
CANDIDACY FEE IS NONREFUNDABLE AND NONTRANSFERABLE.

CHARGE TO: VISA MASTERCARD AMERICAN EXPRESS

ACCOUNT NUMBER

EXP DATE

AUTHORIZED SIGNATURE

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Revised 7/21/09