Uka Tarsadia University

5 Years Integrated M.Sc.(IT)

DSE11-Database Administration
(060010515)

5th Semester

EFFECTIVE FROM JUNE-2017

UKA TARSADIA UNIVERSITY

5 Years Integrated M.Sc.(IT) (5th Semester) Syllabus, 2017-2018

Course Code: 060010515 Course Title: DSE11-Database Administration

Course Credits:04 Total Hours: 48 [Lectures: 04, Tutorial: , Practical:]

Prerequisites: Database Management Systems, Relational Database Management Systems

Prerequisites By Topics: Transaction control, Deadlock, concepts of Backup and Recovery

Objectives: To acquaint with databases, server configuration, network architecture, it's transaction, logs including backup & recovery

1 Introducing Database Components and Architecture [15 %]

1.1. Oracle Database 12c Architecture
1.2. User and Server Processes
1.3. The Oracle Instance
1.4. Oracle Storage Structures

2 Database Storage and Concurrency Management [15 %]

2.1. Understanding the Physical and Logical Storage
2.2. Managing Tablespaces, Managing Data Files and Managing Space
2.3. Managing Data Changes Using DML
2.4. Managing Data Concurrency

3 Understanding Oracle Network Architecture [20 %]

3.1. Introducing Network Configurations
3.2. An Overview of Oracle Net Features
3.3. Configuring Oracle Net on the Server and client
3.4. Overview of Oracle Shared Server
3.5. Understanding Database Resident Connection Pooling
3.6. Communicating Between Databases

4 Implementing Security and Auditing [15 %]

4.1. Creating and Managing User Accounts
4.2. Granting and Revoking Privileges
4.3. Controlling Resource Usage by Users
4.4. Auditing Database Activity

5 Maintaining the Database and Managing Performance [20 %]

5.1. Performing Database Maintenance
5.2. Managing Performance
5.3. Managing Performance: SQL Tuning

6 Backup and Recovery [15 %]

6.1. Understanding and Configuring Recovery Components
6.2. Understanding Backup Terminology
6.3. Understanding Types of Database Failures
6.4. Performing Recovery Operations

Course Outcomes:

CO1 Understand database architecture and analyse the process of server, instances and storage structure
CO2 Manage database storage and concurrency
CO3 Know the concept of network architecture
CO4 Manage users and logs including the security aspects as well as the parameters related to the log
CO5 Manage database performance and database tuning
CO6 Acquaint with different types of backup and recovery techniques.

Course Objectives and Course Outcomes Mapping:

To acquaint with databases, server configuration: CO1, CO2
network architecture:CO3
it's transaction, logs including backup & recovery: CO4, CO5, CO6

Course Units and Course Outcomes Mapping:

Unit	Unit	Course Outcome

No.							
		CO1	CO2	CO3	CO4	CO5	CO6
1	Introducing Database Components and Architecture	√					
2	Database Storage and Concurrency Management		√				
3	Understanding Oracle Network Architecture			√			
4	Implementing Security and Auditing				√		
5	Maintaining the Database and Managing Performance					√	
6	Backup and Recovery						√

Programme Outcomes

PO1: **Knowledge:** Apply the fundamental knowledge of information technology along with analytical, problem-solving and designing. Also to provide communication skill for life-long learning in chosen field.

PO2: **Problem Analysis and Solution:** Identify, Analyse and provide the solution for emerging real world problems with the help of theoretical and practical understanding of tools and technologies.

PO3: **Core Competence**: To cultivate professionalism, ethics, and aesthetic to become competent leader to serve the community.

PO4: **Preparation:** To Prepare the student for higher studies, research and development and social upliftment. Also to provides skills which help students to work and recognized themselves as an individual and as a team player.

Course Outcomes and Programme Outcomes Mapping

Programme Outcome	Course out comes					
	CO1	CO2	CO3	CO4	CO5	CO6
PO1	✓	✓	✓			
PO2				✓	✓	
PO3			✓			✓
PO4				✓	✓	✓

Modes of Transaction (Delivery):

- Lecture method: shall be used but along with it, as and when required, discussion method would be fruitful. It shall be supplemented with various appropriate audio-visual aids.
- Activity assignment: shall be given to the student. Assignment questions should be logical and twisted

Activities/Practicum:

The following activities shall be carried out by the students

- Demonstration of creating tables, databases and instances

The following activities shall be carried out by the teacher.

- Demonstrate server configuration defaults.
- Demonstrate managing of the logs.

Text Book

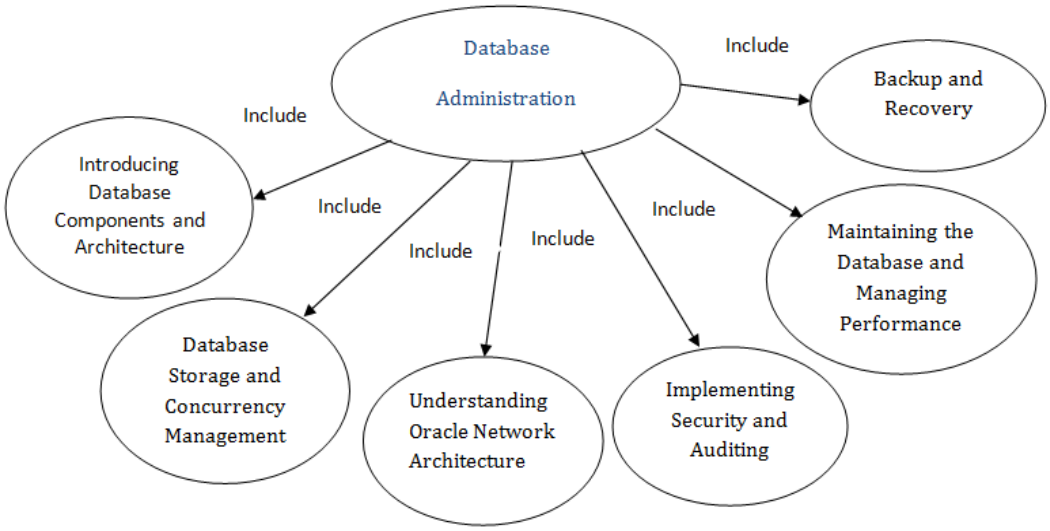
1. Biju Thomas OCA Oracle Database 12c Administrator Certificate Associate, Study guide, Sybex

Reference Book

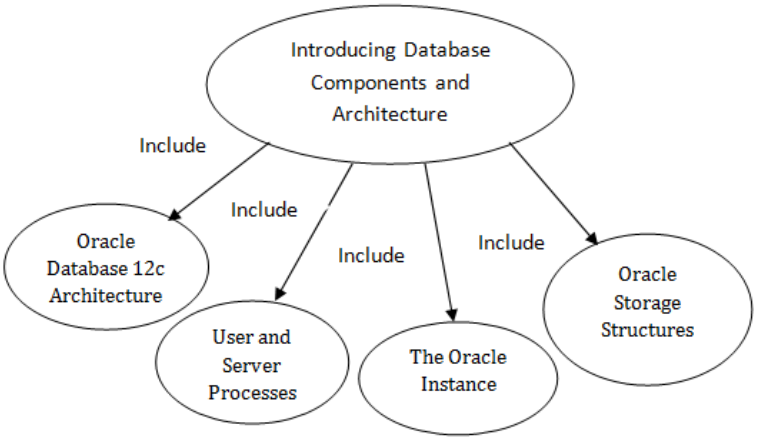
1. Biju Thomas OCA Oracle Database 11G Certificate Associate, Study guide, Sybex

Concept Map

Database Administration



Unit:1



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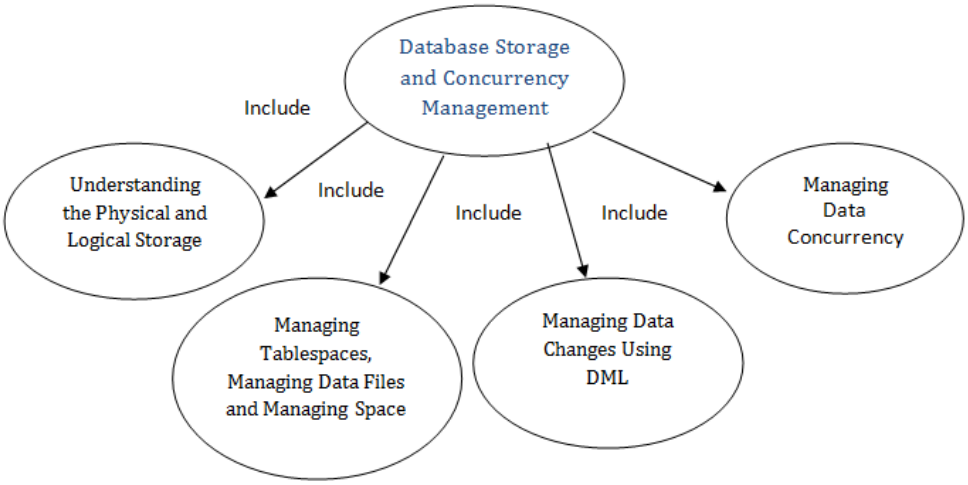

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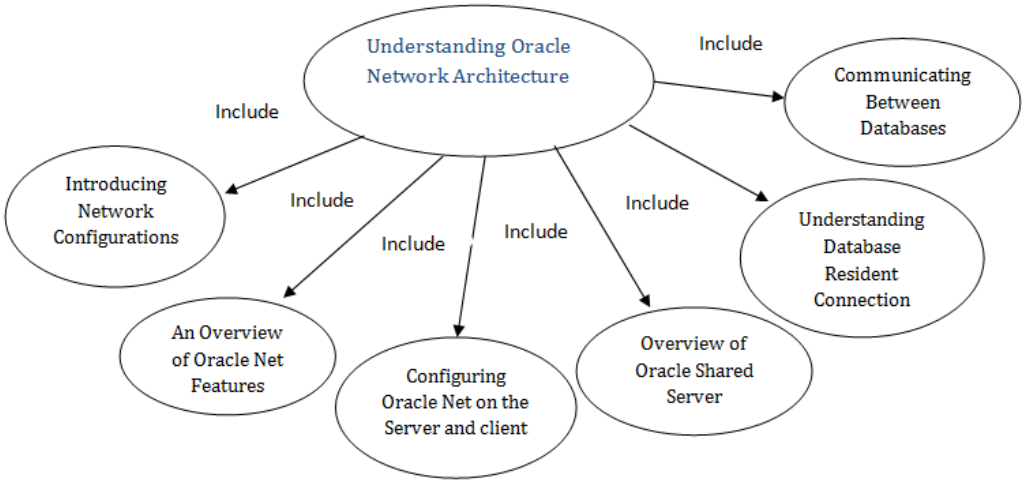

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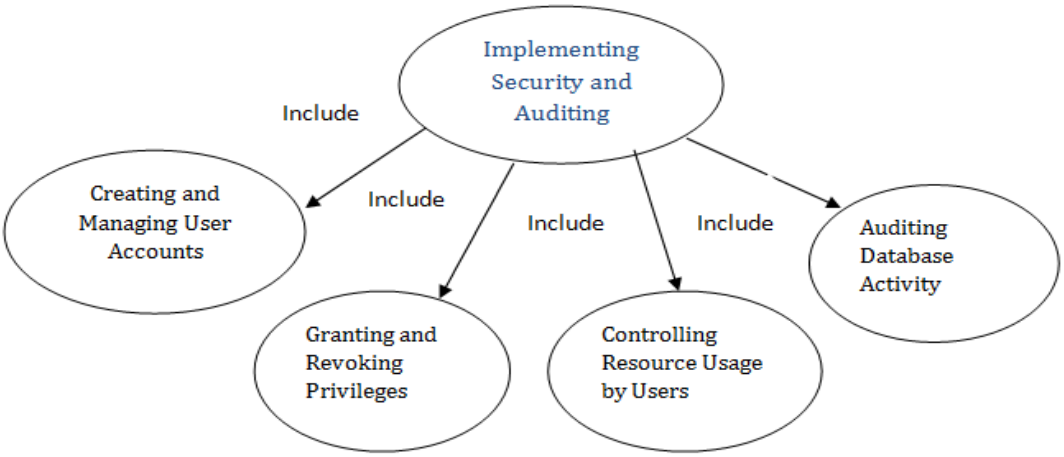

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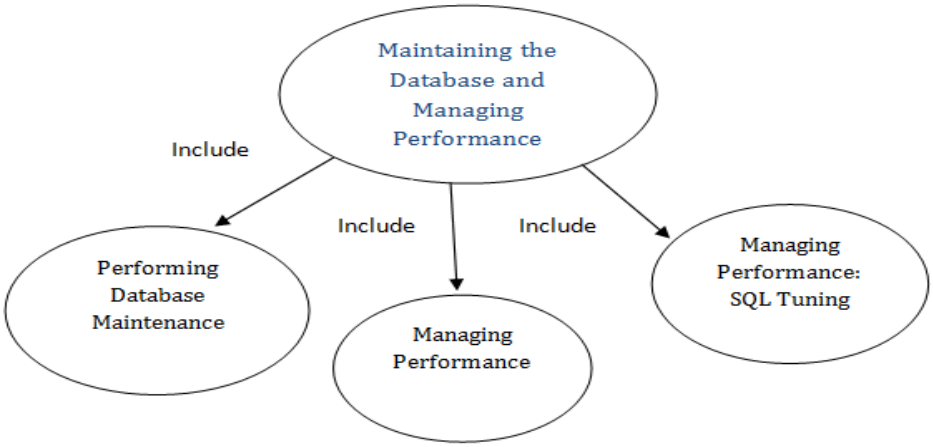
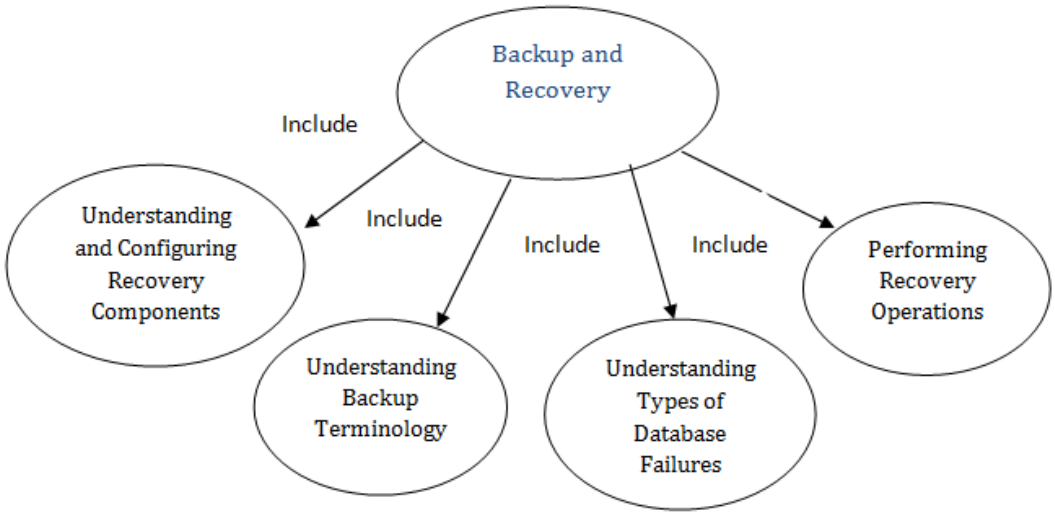


Unit:6



Assessment:

The weightage of CIE and University examination shall be as per the University regulations.
Composition of CIE shall be

Question Bank:

Question Bank must be prepared which consists of several types of questions namely Multiple Choice Questions, Fill in the blanks, Short type questions, Long type questions and Comprehensive exercises.

Academic Honesty:

Course work is assumed to be accomplished individually (otherwise stated). Any portion of submission taken directly from anywhere (like statements in assignment/report etc.) without modification must be accompanied With the properly formatted reference giving credit to the author and to the source.

UFM:

- If two or more submitted answer papers are too similar for coincidence, a penalty shall be imposed that shall usually be the same for the student who did the original as for the one copying from it
- Any ascertained fact of breaking institute policy shall be associated with one or all of the following: (i) zero marks for the work; (ii) report to the Programme Coordinator; (iii) report to the Director.

Attendance:

- Attendance means being present for the entire class session. Those arriving significant late or leaving significantly early without prior permission shall be counted as ABSENT for the entire class session.
- Concern teacher must clearly state his/her attendance policies at the first class meeting.