

Module Title:	Database Management System
Module ID:	CAP 364
Prerequisite:	CAP 261
Level:	6
Credit Hours:	4(2+4+0)

Module Description:

DBMS architecture and administration; Centralized and Client-Server approaches, System Catalog, Data Dictionary. Transaction management; Transactions: concepts, characteristics. Recovery techniques, Concurrency control techniques: Serializability, Deadlock, Locking schemes, Time-stamp ordering, Multi-version, Optimistic techniques; DB security; Distributed databases; Distributed DBMS, Data fragmentation and replication, Distributed transactions management. Object-Oriented databases. Introducing to new emerging DB technologies and applications; Web DBs, Multimedia DBs, Data Warehousing and Data Mining, etc. The lab covers all the issues of DBA, including installation, configuration, operation, optimization, user management, recovery and backup, etc. A well-known DBMS is selected to allow real experiences for students.

Module Aims:

- Designing methodology for databases and verifying their structural correctness
- Implementing databases and applications software primarily in the relational model
- Using querying languages such SQL and other database supporting software
- Applying the theory behind various database models and query languages
- Implementing security and integrity policies relating to databases
- Working in group settings to design and implement larger programming projects

Learning Outcomes:

- Understanding advanced database concepts.
- Applying Installing oracle 10g
- Use Creation database and queries (update ,insertion, deletion,)
- Using with constraint and the retaliation table.
- Using with user account and authorization.
- Use Pl/sql programming
- Use triggers

List of Topics	No. of Weeks	Contact Hours
Introduction to database and DBMS. Characteristics of database approach. Database concepts, environment and architecture. Data Independence.	2	8
Data model and schema. DBMS interface. Database languages. Basic Client/Server Architectures	2	8
Introduction ,Reviews Advanced SQL skills	3	12
PL/Sql as a programming language	3	12
Exception Handling(Syntax , Types, Definitions)	2	8
Subprograms(Procedures and Functions)	2	8
Revision	1	4

Textbook:

R. Elmasri; S. Navathe; Fundamentals of Database systems; 3rd ed.; 2000•Addison Wesley.

OCP: Oracle 10g Administration II Study Guide, Doug Stuns, Tim Buterbaugh, Bob Bryla, John Wiley & Sons (For DBMS Lab)