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

**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.
* Appling 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

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| 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](https://www.google.com.sa/search?tbo=p&tbm=bks&q=inauthor:%22Doug+Stuns%22&source=gbs_metadata_r&cad=6), [Tim Buterbaugh](https://www.google.com.sa/search?tbo=p&tbm=bks&q=inauthor:%22Tim+Buterbaugh%22&source=gbs_metadata_r&cad=6), [Bob Bryla](https://www.google.com.sa/search?tbo=p&tbm=bks&q=inauthor:%22Bob+Bryla%22&source=gbs_metadata_r&cad=6), John Wiley & Sons ( For DBMS Lab )