

## Course: 205 : Database Management System (DBMS)

Course Code	205
Course Title	Database Management System (DBMS)
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation etc.)
Review / Revision	June 2014
Purpose of Course	Organizations use large amounts of data. A Database Management System (DBMS) is a software tool that makes it possible to organize data in a database.
Course Objective	<ol style="list-style-type: none"> <li>1. To make students understand the basic concepts of Database.</li> <li>2. Create Databases and Manage Databases using Structured Query Language (SQL).</li> <li>3. They become aware with Normalization and its importance in RDBMS.</li> </ol>
Pre-requisite	Basic Operating Knowledge of Computer and Basic Knowledge of Programming.
Course Out come	After studying this, students will be able to understand what is DDL? What is DML? and what is DCL?. After Completion of the course student will be able to prepare a complete database for their application
Course Content	<p><b>Unit 1. Introduction to Database Systems</b></p> <ol style="list-style-type: none"> <li>1.1. Drawbacks of Conventional File Processing System</li> <li>1.2. Need of Database Management System</li> <li>1.3. Organization of database (Physical, Conceptual, Logical)</li> <li>1.4. Data Models             <ol style="list-style-type: none"> <li>1.4.1. Object based data models: E-R Model                 <ol style="list-style-type: none"> <li>1.4.1.1. E-R Diagram</li> <li>1.4.1.2. Entities &amp; entity sets</li> <li>1.4.1.3. Types of relationships</li> </ol> </li> <li>1.4.2. Record based data models: Network, Hierarchical &amp; Relational</li> <li>1.4.3. Physical data models</li> </ol> </li> <li>1.5. Components of Data Base Management System             <ol style="list-style-type: none"> <li>1.5.1. Query Language: DDL, DML, TCL</li> <li>1.5.2. Database Users: DBA, Programmer, Other Users</li> </ol> </li> <li>1.6. Data independence: Logical &amp; Physical</li> <li>1.7. Functional Dependencies &amp; Closure of Functional Dependencies</li> <li>1.8. Keys: Super Key, Candidate Key, Primary Key, Alternate Key, Foreign Key</li> <li>1.9. Constraints             <ol style="list-style-type: none"> <li>1.9.1. Domain Integrity</li> <li>1.9.2. Referential Integrity</li> <li>1.9.3. Entity Integrity</li> </ol> </li> </ol> <p><b>2. Normalization</b></p> <ol style="list-style-type: none"> <li>2.1. Need of Normalization (Consequences of Bad Design-Insert, Update &amp; Delete Anomalies)</li> </ol>

	<p>2.2. Normalization</p> <p>2.2.1. First Normal Form</p> <p>2.2.2. Second Normal Form</p> <p>2.2.3. Third Normal Form</p> <p>2.2.4. BCNF</p> <p><b>Unit 3. Microsoft Access</b></p> <p>3.1. Working with databases &amp; tables</p> <p>3.2. Managing Constraints &amp; Relationships</p> <p>3.3. Using SQL Queries</p>
Reference Books	<ol style="list-style-type: none"> <li>1. Database System Concepts: – Henry F. Korth &amp; Abraham Silberschatz :- IMR</li> <li>2. Introduction to Database Management System :- Bipin C. Desai :- Galgotia</li> <li>3. Principles of database systems :- Jeffery Ullman :- Galgotia Publication</li> <li>4. An introduction to Database Systems: – C.J. Date :- Addison Wesley</li> <li>5. Introduction to database Management :- Navin Prakash :-TM</li> <li>6. Access- The Complete Reference: – Virginia Andersen :- McGraw-Hill</li> <li>7. Access Database Design &amp; Programming :- Steven Roman: – O’Reilly</li> <li>8. ABC of Microsoft Access:- Cowart Robert:-BPB Publication</li> </ol>
Teaching Methodology	Class Work, Discussion, Self Study, Seminars and/or Assignments
Evaluation Method	30% Internal assessment. 70% External assessment.