File Organization and Database Management Systems

Semester II	Subject Code: BC21502	Lectures: 48

Objectives:
The syllabus aims in equipping students with 1. Data processing using computers. 2. Basic organization of data using files. 3. Creations, manipulation and querying of data in databases.

Unit 1 : File Structure and organization	6 Lects.
• Introduction. • Physical / logical files. • Types of file organization (heap, sorted, indexed, hashed). • Choosing a file organization.	 2 2 2

Name	Sign
Prof. Gautam Kudale	
Prof. Mahesh Pawar	
Mr.Suraj Agarwal	
Ms. Netra Jadhav	
Mrs.Smita Borkar	
Mrs.Divya Chitre	
Mrs.Monika Rajguru	
Ms.Deepali Agarwal	
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Unit 2 Database Management System	**14 lects**

• Introduction
• Basic Concept and Definitions : Data and Information , Data Vs Information, Data Dictionary, Data Item or Field, Record
• Definition of DBMS
• Applications of DBMS
• File processing system Vs DBMS
• Advantages and Disadvantages of DBMS
  • Users of DBMS : Application programmer, Specialized users, Sophisticated users, End Users, DBA
• Views of Data
• Data Independence
• Data Models : Object Based Logical Model, Entity Relationship Data Model
  ○ Record Base Logical Model : Relational Model, Network Model, Hierarchical Model
• Entity Relationship Diagram (ERD): Extended features of ERD, Case study
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Unit 3 – Relational Model	**8 Lects.**
• Introduction • Terms: Relation, Tuple, Attribute, Cardinality, Degree of relationship set, Domain • Keys : Super Key, Candidate Key, Primary Key, Foreign Key • Relational Algebra Operations : Select, Project, Union, Difference, Intersection, Cartesian Product, Natural Join(Queries)	1 2 2 3

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Unit 4 – SQL(Structured query language)	**12 Lects.**
• Introduction • History Of SQL • Basic Structure • DDL Commands • DML Commands • Simple Queries • Aggregate functions • Nested Queries • Joins	 1 2 2 2 2 2 1

Unit 5 – Relational Database Design	**8 Lects.**
• Introduction • Anomalies of unnormalized database • Functional Dependency: Decomposition, Multivalued Dependency • Normalization: ○ Normal Form :1 NF, 2 NF, 3 NF, BCNF, Examples	1 1 3 3

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Reference Books:

- Database System Concepts By Henry korth and A. Silberschatz 5th edition 2006.
- SQL, PL/SQL The Programming Language Oracle :- Ivan Bayross, BPB Publication.
- Fundamentals of Database system- Ramez Elmasri, Shamkant Navathe 5th edition 2008.
- Introduction to Database Systems- C.J.Date, A. Kannan, S.Swamynathan 8th edition 2008

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