

Department of Computer Science and Engineering

Lesson Plan cum Diary 2015-16

Name of the Subject : Advanced Database Management System (14MT10502)
Name of the faculty Members : Mr.B.Gurunadha Rao
Class & Semester : M. Tech. (CS) – I Semester

S. No.	Topic	No. of periods required	Date(s) covered	No. of periods used	Book(s) followed	Topics for self study
UNIT-I: DATABASE LANGUAGES AND ARCHITECTURE, RELATIONAL MODEL, CONCEPTUAL DATA MODELING						
1.	Introduction to Databases, Overview of Database Languages and Architecture, The Basic Relational Model	3			T1	Conceptual Data Modeling Using Entities and Relationships: subclasses, Super classes, and Inheritance, Specialization and Generalization in EER,
2.	Conceptual Data Modeling Using Entities and Relationships: Using High-Level Conceptual data Model for Database Design,	2			T1	
3.	A Sample Database Application, Entity Types, Entity Sets, Attributes, and Keys	2			T1	
4.	Relationship Types, Relationship Sets, Roles, and Structural Constraints, Weak Entity Types, Refining the ER Design for the COMPANY Database,	2			T1	
5.	ER Diagrams, Naming Conventions, and Design Issues, Relationship Types of Degree Higher than Two	2			T1	
Total no of periods required:		11	Total no of periods used:			
UNIT-II: SQL, OBJECT RELATIONAL DATABASE AND XML						
6.	Mapping a Conceptual Design into a Logical Design	2			T1	Formal Relational Languages: The Algebra and Calculus
7.	SQL: Data Definition, Constraints, Basic Queries and Updates	2			T1	
8.	Advanced Queries, Assertions, Triggers, and Views	3			T1	

9.	Object and Object-Relational Databases: Concepts, Models, Languages and Standards	3			T1	
10.	XML: Concepts, Languages, and Standards	2			T1	
Total no of periods required:		12	Total no of periods used:			
UNIT-III: DATABASE DESIGN AND FILE ORGANIZATIONS						
11.	Database Design Theory: Introduction to Normalization Using Functional and Multivalued Dependencies	3			T1	SQL Application Programming using C and JAVA
12.	Normalization Algorithms	3			T1	
13.	Database File Organizations: Unordered, Ordered	3				
14.	Hashed Files of Records	2			T1	
Total no of periods required:		11	Total no of periods used:			
UNIT-IV: QUERY AND TRANSACTION PROCESSING, CONCURRENCY AND RECOVERY						
15.	Introduction to Query Processing and Query Optimization Techniques	2			T1	Database File Indexing Techniques, B Trees, and B+ Trees
16.	Introduction to Database Tuning and Physical Design Issues	1			T1	
17.	Foundations of Database Transaction Processing	3			T1	
18.	Introduction to Protocols for Concurrency Control in Databases	2			T1	
19.	Introduction to Database Recovery Protocols	2				
Total no of periods required:		10	Total no of periods used:			
UNIT-V: DISTRIBUTED DATABASES						
20.	Introduction to Distributed Databases: Concepts, Types of Distributed Database Systems, Distributed Database Architectures	3			T1,T2	Advanced Database Models and Applications
21.	Data Fragmentation, Replication, and Allocation Techniques for Distributed Database Design,	3			T1,T2	
22.	Query Processing and Optimization, Overview of Transaction Management	2			T1,T2	

23.	Overview of Concurrency Control and Recovery, Distributed catalog management, Current Trends, Distributed Databases in Oracle	2			T1,T2	
24.	Emerging Database Technologies and Applications	2			T1	
Total no of periods required:		12	Total no of periods used:			
Grand total of periods required:		56				

TEXTBOOKS:

T1: Ramez Elmasri & Shamkant B. Navathe, “*Database Systems: Models, Languages, Design and Application Programming*,” Sixth Edition, New Delhi, Pearson Education, 2013.

T2: M. Tamer Ozsu, Patrick Valduriez, “*Principles of Distributed Database System*,” Second Edition, New Delhi: Pearson Education, 2006.

REFERENCE BOOKS:

R1: Thomas M. Connolly, Carolyn E. Begg, “*Database Systems – A Practical Approach to Design, Implementation and Management*,” Third Edition, New Delhi: Pearson Education, 2003.

R2: Stefano Ceri, Giuseppe Pelagatti, “*Distributed Databases Principles and Systems*,” N.Y: McGraw-Hill International Editions, 1985.

R3: Rajesh Narang, “*Object Oriented Interfaces and Databases*,” New Delhi: Prentice Hall of India, 2002.

R4: Abraham Silberchatz, Henry F. Korth, S. Sudarsan, “*Database System Concepts*,” Fifth Edition, N.Y: McGraw-Hill, 2006

Signature of the faculty Member

HOD, CSE