	ADVANCED DATABASES	L	T	P	C
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PREREQUISITE:	
	1. Basic Data Strcures
	2. Database management system

COURSE OBJECTIVES:

1. To learn the fundamentals of Parallel and Distributed Databases
2. To make a study on Object Oriented Databases
3. To explore the concepts of XML Databases and Mobile Databases
4. To gain knowledge on the intelligent Databases.

UNIT I	**PARALLEL AND DISTRIBUTED DATABASES**	**09 Hours**

Database System Architectures: Centralized and Client-Server Architectures – Server System Architectures – Parallel Systems- Distributed Systems – Parallel Databases: I/O Parallelism – Inter and Intra Query Parallelism – Inter and Intra operation Parallelism – Distributed Database Concepts - Distributed Data Storage – Distributed Transactions – Commit Protocols – Concurrency Control – Distributed Query Processing – Three Tier Client Server Architecture- Case Studies.

UNIT II	**OBJECT AND OBJECT RELATIONAL DATABASES**	**09 Hours**

Concepts for Object Databases: Object Identity – Object structure – Type Constructors – Encapsulation of Operations – Methods – Persistence – Type and Class Hierarchies – Inheritance – Complex Objects – Object Database Standards, Languages and Design: ODMG Model – ODL – OQL – Object Relational and Extended – Relational Systems : Object Relational features in SQL / Oracle – Case Studies.

UNIT III	**XML DATABASES**	**09 Hours**

XML Databases: XML Data Model – DTD - XML Schema - XML Querying – Web Databases – JDBC – Information Retrieval – Data Warehousing – Data Mining.

UNIT IV	**MOBILE DATABASES**	**09 Hours**

Mobile Databases: Location and Handoff Management - Effect of Mobility on Data Management - Location Dependent Data Distribution - Mobile Transaction Models - Concurrency Control - Transaction Commit Protocols- Mobile Database Recovery Schemes.

UNIT V	**INTELLIGENT DATABASES**	**09 Hours**

Active databases – Deductive Databases – Knowledge bases – Multimedia Databases- Multidimensional Data Structures – Image Databases – Text/Document Databases- Video Databases– Audio Databases – Multimedia Database Design –Spatial Databases.

TOTAL: 45 HOURS

FURTHER READING:	
	Data mining andWarehousing, Big Data

COURSE OUTCOMES:	
	On the successful completion of the course, students will be able to
CO1:	Develop transaction processing systems with concurrency control.
CO2:	Design Object oriented databases for real time applications.
CO3:	Develop XML databases for web applications.
CO4:	Design Mobile databases for mobile devices.
CO5:	Apply intelligent rules in database developement

REFERENCES:

1. Henry F Korth, Abraham Silberschatz and S. Sudharshan, “Database System Concepts”, Sixth Edition, McGraw Hill, 2011.
2. C.J.Date, A.Kannan, S.Swamynathan, “An Introduction to Database Systems”, Eighth Edition, Pearson Education, 2006.
3. R. Elmasri, S.B. Navathe, “Fundamentals of Database Systems”, Fifth Edition, Pearson Education/Addison Wesley, 2007.
4. Thomas Cannolly and Carolyn Begg, “Database Systems, A Practical Approach to Design, Implementation and Management”, Third Edition, Pearson Education, 2007.
5. Subramaniam, “ Multimedia Databases”, Morgan Kauffman Publishers, 2008.
6. Frank. P. Coyle, “XML, Web Services And The Data Revolution”, Pearson Education, 2012.
7. https://www.geeksforgeeks.org/introduction-of-dbms-database-management-system-set-1/
8. https://www.javatpoint.com/dbms-tutorial
9. https://www.tutorialspoint.com/dbms/index.htm