

Course code	Course Name	L-T-P - Credits	Year of Introduction
IT366	Advanced Database Management Systems	3-0-0-3	2016
<b>Pre-requisites:</b> CS208 Principles of database design			
<b>Course Objectives</b> <ul style="list-style-type: none"> <li>To enable design of high-quality relational databases and database applications.</li> <li>To develop skills in advanced visual &amp; conceptual modelling and database design..</li> <li>To make aware of emerging database trends as they apply to semi-structured data, the internet, and object-oriented databases.</li> </ul>			
<b>Syllabus</b> Distributed Databases, Object Oriented Databases, Emerging Systems, Data mining and dataware housing, Database Design Issues, Current Issues.			
<b>Expected outcome .</b> The students will be able <ul style="list-style-type: none"> <li>To develop skills in advanced visual &amp; conceptual modelling and database design..</li> <li>To develop an appreciation of emerging database trends as they apply to semi-structured data, the internet, and object-oriented databases</li> </ul>			
<b>Text Book:</b> <ul style="list-style-type: none"> <li>R. Elmasri, S.B. Navathe, “Fundamentals Of Database Systems”, Pearson Education, 2004</li> </ul>			
<b>References:</b> <ol style="list-style-type: none"> <li>Abdullah Uz Tansel Et Al, “Temporal Databases: Theory, Design and Principles”, Benjamin Cummings Publishers, 1993.</li> <li>C.S.R Prabhu, “Object-Oriented Database Systems”, Prentice Hall Of India, 1998.</li> <li>Carlo Zaniolo, Stefano Ceri, Christos Faloutsos, R.T.Snodgrass, V.S.Subrahmanian, “Advanced Database Systems”, Morgan Kaufman, 1997.</li> <li>Elisa Bertino, Barbara Catania, Gian Piero Zarri, “Intelligent Database Systems”, Addison-Wesley, 2001.</li> <li>Henry F Korth, Abraham Silberschatz, S. Sudharshan, “Database System Concepts”, Fourth Edition, McGraw Hill, 2002.</li> <li>N.Tamer Ozsu, Patrick Valduriez, “Principles Of Distributed Database Systems”, Prentice Hall International Inc., 1999.</li> <li>Raghu Ramakrishnan, Johannes Gehrke, “Database Management Systems”, McGraw Hill, Third Edition 2004.</li> </ol>			
<b>Course Plan</b>			
Module	Contents	Hours	Sem. Exam Marks
I	<b>Distributed Databases</b> Distributed Databases Vs Conventional Databases – Architecture – Fragmentation– Query Processing – Transaction Processing – Concurrency Control – Recovery.	6	15%
II	<b>Object Oriented Databases</b> Introduction to Object Oriented Data Bases - Approaches - Modelling and Design- Persistence – Query Languages - Transaction - Concurrency – Multi VersionLocks - Recovery.	8	15%
<b>FIRST INTERNAL EXAMINATION</b>			

<b>III</b>	<b>Emerging Systems</b> Enhanced Data Models - Client/Server Model - Web Databases – Mobile Databases.	6	15%
<b>IV</b>	<b>Data mining and data ware housing.</b> Data mining introduction-concepts-association-classification-clustering-applications Datawarehousing-introduction-architecture-characteristics-modeling and building data warehouse	6	15%
<b>SECOND INTERNAL EXAMINATION</b>			
<b>V</b>	<b>Database Design Issues</b> ER Model - Normalization - Security - Integrity - Consistency - Database Tuning- Optimization and Research Issues – Design of Temporal Databases – Spatial Databases	8	20%
<b>VI</b>	<b>Current Issues</b> Rules - Knowledge Bases - Active And Deductive Databases - Parallel Databases– Multimedia Databases – Image Databases – Text Database	8	20%
<b>END SEMESTER EXAM</b>			

### QUESTION PAPER PATTERN

Maximum Marks: 100

Exam Duration: 3 hours

The question paper shall consist of Part A, Part B and Part C.

**Part A** shall consist of three questions of 15 marks each uniformly covering Modules I and II. The student has to answer any two questions ( $15 \times 2 = 30$  marks).

**Part B** shall consist of three questions of 15 marks each uniformly covering Modules III and IV. The student has to answer any two questions ( $15 \times 2 = 30$  marks).

**Part C** shall consist of three questions of 20 marks each uniformly covering Modules V and VI. The student has to answer any two questions ( $20 \times 2 = 40$  marks).

**Note :** Each question can have a maximum of 4 subparts, if needed