CS4036 ADVANCED DATABASE MANAGEMENT SYSTEMS
Course Plan

Course:

Code	: CS4036
Title	: Advanced Database Management Systems
Credits	: 4
Slot	: B,B+
Lecture Hall	:NLHC 102

Instructor:

Name	:Dr. S.D Madhu Kumar
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Course Outcomes:

CO1: Model, Design and develop concurrent, distributed and spatial database applications

CO2: Write reports, surveys and possibly publish on the advances in the database field in conferences/journals.

CO3: Query spatial databases using spatial query languages.

CO4: Port existing database applications into the cloud database environment.

CO5: Deploy efficient database solutions using free and open software.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	3	1	3						1		
CO2	1	3	1	1						1		2
CO3	1				1					2		
CO4	1	3	1	2	1	1	3			1		3
CO5	1		1	2	1	1	2	1	1	3	1	3

Evaluation Scheme:

Mid-Term Exam I	: 15
Mid-Term Exam II	: 15
Surprise Quizzes	: 5
Term Project	: 15
Final Exam	: 50

Course Schedule:

Week #	Topic
1	Review of Normalization Theory, Types of joins
2	Distributed Databases, Fragmentation, Semi join
3	Concurrency control, Heterogeneity issues, Protocols
4	Clustering, Indexing, Distributed Database Security
5	QBE, Query Optimization Techniques, BTree, B+ tree
6	Mid Semester Exam 1
7	Consistency Protocols, BASE Properties
8	Transaction Processing, Multi-level Transactions
9	Database Recovery, Multi-level Recovery

10	COMMIT Protocols - 2PC, 3PC
11	Spatial Databases, Spatial Data - Models
12	Spatial Query Languages
13	Mid Semester Exam 2
14	Graph Databases, Social Networks
15	Introduction to Big Data, NoSQL Databases
16	MongoDB case study

References:

1. AviSilberschatz, Hank Korth, and S. Sudarshan. Database System Concepts, (5/e), McGraw Hill, 2005
2. S. Shekhar and S. Chawla. Spatial Databases: A Tour, Prentice Hall, 2003.
3. Ralf HartmutGuting, Markus Schneider, Moving Objects Databases Morgan Kaufman, 2005.
4. R. Elmasri and S. Navathe, Fundamentals of Database Systems, Benjamin- Cummings ,(5/e), 2007
5. O'neil P. &O'neil E., Database Principles, Programming, and Performance, 2/e, Harcourt Asia, MorganKaufman
6. Ullman J. D., Principles of Database Systems, Galgotia Publications,1996.
7. Date C. J., An Introduction to Database Systems, Addison Wesley, 2000.
8. Ramakrishnan R. &Gehrke J., Database Management Systems, 3/e, McGraw Hill, 2004

Grading Policy:
- Grading will be relative.
- Absence for exams/quizzes without prior written permission from the instructor will be equivalent to zero marks in the corresponding exam/quiz.
- Makeup exams would be as per institute regulations.
- All issues regarding valuation of assignments/quizzes must be resolved within one week after the marks are announced and for final exams and tests as per institute rules.

Standard of Conduct:

Each student is expected to adhere to high standards of ethical conduct, especially those related to cheating. Any academic dishonesty will result in zero marks in the corresponding exam or quiz and will be reported to the department council for record keeping and for permission to assign F grade in the course.

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