RAJEEV GANDHI MEMORIAL COLLEGE OF ENGINEERING & TECHNOLOGY, NANDYAL

(Autonomous)

Computer Science and Engineering

Course Instructor: Dr. K Rajendra Prasad

COURSE DESCRIPTOR

Course Title	**ADVANCED DATABASES**			
Course Code	**A0542158**			
Programme	**B.Tech**			
Year & Semester	**IV B.Tech & II Sem**			
Course Type	**Elective**			
Regulation	**RGM-R-2015**			
Course Structure	**Theory**		**Practical**	
	Lectures	**Tutorials**	**Practicals**	**Credits**
	3	**1**	**-**	**-**
Course Faculty	**Dr. K Rajendra Prasad, Professor, Dept. of CSE**			

I. COURSE OVERVIEW:

This course introduces the core principles and techniques required in the design and implementation of database systems. This introductory application-oriented course covers the features of distributed and centralized databases. It presents the reference architecture of distributed databases and the fragmentation schemas. Framework of distributed design is described with application levels and transformation of fragmentation is discussed for the simplification of query processing at distributed levels. Mechanisms of concurrency controls are introduced underlying of deadlocks, timestamps, and optimistic methods.

II. COURSE PRE-REQUISITES:

Level	Course Code	Semester	Prerequisites	Credits
B.Tech	A0514153	II B.Tech II Sem	Database Management Systems	-

III. MARKS DISTRIBUTION

Subject	End Examination	Mid Examination	Total Marks
Advanced Databases	70 Marks	30 Marks	100

IV. DELIVERY / INSTRUCTIONAL METHODOLOGIES:

✔	LCD / PPT	✔	Seminars	✔	Videos		
✘	Open Ended Experiments						

V. EVALUATION METHODOLOGY:

Internal Examination: The course will be evaluated for a total of 100 marks, with 30 marks for Internal(Mid Exam) Assessment and 70 marks for End Examination. Out of 30 marks allotted for Internal during the semester, marks are awarded by taking average of two mid examinations and 5 marks scored in the assignment.

End Examination: The end examination is conducted for 70 marks of 3 hours duration.

The emphasis on the questions is broadly based on the following criteria:

50 %	To test the objectiveness of the concept.
30 %	To test the analytical skill of the concept.
20 %	To test the application skill of the concept.

Internal Assessment (IA):
IA is conducted for a total of 30 marks (Table 1), with 25 marks for Internal Examination , 05 marks for Assignment.

Table 1: Assessment pattern for CIA

Component	**Theory**		**Total Marks**
Type of Assessment	**MID Exam**	**Assignment**	
MID Exams (I & II)	25	05	30

VI. PROGRAM OUTCOMES

	Program Outcomes (POs)
PO 1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems
PO 2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences
PO 3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO 6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO 7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO 11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

3 = High; 2 = Medium; 1 = Low

VII. COURSE OBJECTIVES:

The course should enable the students to:

I	To learn the features of distributed databases
II	To learn about Optimization in DDB
III	Architectural Issues in DDB
IV	Issues in Distribution design, distributed query processing, and distributed transaction management
V	Manage the distributed transactions and learn the optimistic methods

VIII. COURSE OUTCOMES (COs):

CO1	Understand distributed database management.
CO2	Good knowledge of complex topics like Distribution design, distributed query processing
CO3	Solution to the some of the Architectural issues.
CO4	Explore distributed database design framework and Examples of DDB's
CO5	Know to use the concurrency control mechanisms.

IX. COURSE LEARNING OUTCOMES(CLOs):

Course Outcomes	At the end of the course, the student will have the ability to	PO's Mapped	Strength of Mapping
CO 1	Understand distributed database management.	PO 1	2
CO 2	Good knowledge of complex topics like Distribution design, distributed query processing	PO 1, PO 3	2, 2
CO 3	Solution to the some of the Architectural issues.	PO 1, PO 2, PO 3	1,1,2
CO 4	Explore distributed database design framework and Examples of DDB's	PO 3, PO 4	1, 1
CO 5	Know to use the concurrency control mechanisms.	PO 1, PO 2	1, 1

3 = High; 2 = Medium; 1 = Low

X. MAPPING COURSE OUTCOMES LEADING TO THE ACHIEVEMENT OF PROGRAM OUTCOMES

Course Outcome (CO)	Program Outcome (PO)											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2											
CO 2	2		2									
CO 3	1	1	2									
CO 4			1	1								
CO 5	1	1										

XI. ASSESSMENT METHODOLOGIES –DIRECT

Internal Exam	PO1, PO2, PO3, PO4	End Exams	PO1, PO2, PO3, PO4	Assignment	PO1, PO2, PO3, PO4
Viva	-	Mini Project	-	Laboratory Practices	-

XII. ASSESSMENT METHODOLOGIES -INDIRECT

✔	Early Semester Feedback	✔	End Semester OBE Feedback
✘	Assessment of Mini Projects by Experts		

Prepared By:

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