

Department of Liberal Education
Era University, Lucknow
Course Outline
Effective From: 2023-24

Name of the Program	B.A. / B.Sc. (LIBERAL EDUCATION)			Year/ Semester:	2nd / 3rd
Course Name	Database Management Systems	Course Code:	CS201	Type:	Theory
Credits	04			Total Sessions Hours:	60 Hours
Evaluation Spread	Internal Continuous Assessment:	40 Marks		End Term Exam:	35 Marks
Type of Course	<input type="radio"/> Compulsory	<input checked="" type="radio"/> Core	<input type="radio"/> Creative	<input type="radio"/> Life Skill	
Course Objectives	<ol style="list-style-type: none"> 1. To introduce the data base management system. 2. To introduce the server query language and to design the database for the system. 3. To enables the students to generate the query and to the transaction of data and to perform various tasks of the different management systems. 4. To learn the recovery system and basics of concurrency control system. 				
Course Outcomes (CO): <i>After the successful course completion, learners will develop following attributes:</i>					
Course Outcome (CO)	Attributes				
CO1	Have a broad understanding of database concepts and database management system software.				
CO2	Have a high-level understanding of major DBMS components and their function.				
CO3	Be able to model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model.				
CO4	Be able to write SQL commands to create tables and indexes, insert/update/delete data, and query data in a relational DBMS.				
Pedagogy	Interactive, discussion-bases, student-centered, presentation.				
Internal Evaluation Mode	Mid-term Examination: 20 Marks Class test: 05 Marks Online Test/Objective Test: 05 Marks Assignments/Presentation: 05 Marks Attendance: 05 Marks				
Session Details	Topic			Hours	Mapped CO
Unit 1	Introduction to Databases: Advantage of Database System, Database System versus File System, View of Data, Database System Concepts and Architecture: Data Models, Schemas, and Instances, Three schema architecture and Data Independence, Database Languages and Interfaces, Classification of Database Management Systems.			15	CO1
Unit 2	ER model concepts, notation for ER diagram, Mapping constraints,			15	CO2

	keys, Concepts of Super Key, candidate key, primary key, Generalization, aggregation. Introduction to the Relational Model: Relational data model concepts, integrity constraints: entity integrity, Referential integrity, Keys constraints, Domain constraints, relational algebra, and relational calculus.		
Unit 3	SQL: Data Definition, Constraints, Schema Changes in SQL, Basic Queries in SQL, More Complex SQL Queries, Insert, Delete and Update Statements in SQL. Data Normalization: Functional dependencies, Normal form concepts and Types: First Normal Form, Second Normal Form, Boyce-Codd Normal form, Third Normal form and Fourth Normal Form	15	CO3
Unit 4	Transaction Processing Concepts: Transaction system, Transaction concepts: Transaction execution and Problems, Transaction execution and control with SQL, Transaction properties, Transaction log, Concurrency control, locking, Techniques for concurrency control.	15	CO4

CO-PO and PSO Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	2	2		1	2	2	3	2	2	2	2	2	3
CO2	3	2	1			1	2	1	2	1	1	1	3	1
CO3	2	1	1	1	1	2	2	2	2	1	3	1	2	2
CO4	1	1	3	1	1	1	1	2	3	2	2	2	2	1

Strong contribution-3, Average contribution-2, Low contribution-1,

Suggested Readings:

Text- Books	<ol style="list-style-type: none"> 1. Fundamentals of Database Systems, Elmasri Navathe, Pearson Education, India, 6th edition, 2010 2. Introduction to Database Systems, C.J. Date, Pearson Education, India, 8th edition, 2003.
Reference Books	<ol style="list-style-type: none"> 1. Data base System Concepts, Silberschatz, Korth, McGraw hill, USA, 6th edition, 2011. 2. Elmasri, Nawathe, Fundamentals of Database Systems, Addison Wesley. 3. Silberschatz, Korth, Sudarshan, Database System Concepts, McGraw-Hill.

Para Text	<p>Unit 1:</p> <ul style="list-style-type: none"> • https://archive.nptel.ac.in/noc/courses/noc19/SEM1/noc19-cs12/ <p>Unit 2:</p> <ul style="list-style-type: none"> • https://nptel.ac.in/courses/106105177 <p>Unit 3:</p> <ul style="list-style-type: none"> • https://nptel.ac.in/courses/106105175 <p>Unit4:</p> <ul style="list-style-type: none"> • https://archive.nptel.ac.in/noc/courses/noc19/SEM2/noc19-cs46/
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Recapitulation & Examination Pattern

Internal Continuous Assessment:

Component	Marks	Pattern
Mid Semester	20	Section A: Contains 10 MCQs/Fill in the blanks/One Word Answer/ True-False type of questions. Each question carries 0.5 Marks . Section B: Contains 07 descriptive questions out of which 05 questions are to be attempted. Each question carries 03 Marks .
Class Test	05	Contains 05 descriptive questions . Each question carries 01 Mark.
Online Test/ Objective Test	05	Contains 10 multiple choice questions . Each question carries 0.5 Marks.
Assignment/ Presentation	05	Assignment to be made on topics and instruction given by subject teacher
Attendance	05	As per policy
Total Marks	40	

Course created by: Dr. Mohd Haleem

Signature:

Approved by: Prof. Mansaf Alam

Signature:

